



Mathematics at Bard College

We are located in the 3rd floor of Albee Hall.

The Mathematics Program at Bard provides a wide array of courses and activities for students across the college. We have a joint seminar series with computer science, a weekly lunchtime gathering in the dining hall, and periodic events throughout the year.

Check out our website: <http://math.bard.edu>

Mathematics Program Faculty

- Ethan Bloch, bloch@bard.edu (Program Chair)
- Lauren Rose, rose@bard.edu (Science Division Chair)
- Maria Belk, mbelk@bard.edu (Director of Quantitative Support)
- Mark Halsey, halsey@bard.edu (Associate Dean of the College)
- James Belk, belk@bard.edu
- John Cullinan, cullinan@bard.edu
- Cliona Golden, golden@bard.edu
- Sam Hsiao, hsiao@bard.edu
- Mary Krembs, krembs@bard.edu
- Greg Landweber, gregland@bard.edu
- Robert McGrail, m McGrail@bard.edu (Computer Science)
- Matthew Deady, deady@bard.edu (Physics)
- Japheth Wood, jwood@bard.edu (MAT Program in Math)

Activities and Events for students

- **Math/CS Table:** Lunch and socializing for students and faculty. Wednesdays in Kline.
- **Free tutoring** in the *Math Study Room*, Sun-Wed, 7-10 pm.
- **Undergraduate Conference:** Mid-Hudson Math Conference at Bard in October.
- **Pi Day Celebrations:** On March 14th, we celebrate Pi Day!
- **Putnam Exam:** Participate in a national math competition. Contact: gregland@bard.edu.
- **Math Talks:** Weekly Math/CS Seminar. Go to math.bard.edu/seminar.
- **Distinguished Scientist Lectures:** High profile math/science talks for a general audience.
- **Mathematics Research:** Opportunities for summer and academic year research.
- **Bard MAT Program:** One-year master's program to become a high school math teacher.
- **Bard Math Circle:** Outreach to local middle and high school students.

Mathematics Courses at Bard 2009-10

Courses offered Fall 2008

- *Algebra Workshop*
- *Algebra, Trigonometry, and Functions*
- *Precalculus*
- *Communications and Miscommunications with*
- *Calculus I*
- *Calculus II*
- *Differential Equations*
- *Calculus III*
- *Linear Algebra*
- *Proofs and Fundamentals*
- *Problem Solving Seminar*
- *Coding Theory*
- *Advanced Calculus*
- *Abstract Algebra*
- *Real Analysis*
- *Number Theory*
- *Modern Geometry*

Courses offered Spring 2009 (tentative)

- *Algebra Workshop*
- *Algebra, Trigonometry, and Functions*
- *Precalculus*
- *Cryptology*
- *Topics in Geometry*
- *Calculus I*
- *Calculus II*
- *Calculus III*
- *Differential Equations*
- *Linear Algebra*
- *Proofs and Fundamentals*
- *Mathematical Biology*
- *Probability and Statistics*
- *Abstract Algebra*
- *Math Elective, TBA*
- *Complex Analysis*
- *2-credit Elective, TBA*
- *Mathematical Logic*

Which math course should I take?

Math Placement

The *Online Math Placement Diagnostic* will tell you which math course(s) you are ready for. Most students start with Calculus I, II or III, but if didn't take that much math in high school you can take Precalculus or an Algebra Workshop. If you're interested in courses beyond Calculus III, speak with a math faculty member.

Advanced Placement

Bard gives credit for a score of 5 on the AB or BC Calculus Advanced Placement Test. However, you don't need AP credit to skip Calc I or II.

Questions about math courses or the placement test?

Professor Ethan Bloch, bloch@bard.edu, Chair of the Mathematics program.

Professor Lauren Rose rose@bard.edu, Chair of the Division of Science, Math and Computing

Professor Maria Belk, mbelk@bard.edu, Director of Quantitative Support.

The Mathematics Major at Bard

Students completing a mathematics major at Bard have gone to graduate school in math, computer science, economics, finance, physics, engineering, law, business, and medicine. Students have pursued math related careers in teaching, research, software development, actuarial science, and finance. A strong mathematics background can be the precursor to a career in just about any discipline, as problem solving and analytical thinking skills are important for most occupations.

Moderation into the Mathematics Program

In order to moderate in mathematics, students must write the two standard moderation papers. In addition, students must write a one or two page paper in *Latex* (a mathematical typesetting program) about a mathematics topic they have learned on their own, outside of class work. The following courses are required for moderation.

- *Math 141: Calculus I* (or the equivalent)
- *Math 142: Calculus II* (or the equivalent)
- *Math 212: Calculus III*
- *Math 261: Proofs and Fundamentals*

Graduation Requirements

In addition to the moderation requirements, students must take (at minimum):

- *Linear Algebra (Math 242)*
- *Abstract Algebra (Math 332)*
- *Real Analysis (Math 361)*
- Two math electives 300-level or above
- One computer science course
- Two semesters of senior project

Students interested in a joint major between math and either computer science, physics or economics should consult faculty members in each program.

The Senior Project in Mathematics

Senior math majors spend two semesters engaging in mathematical research under the guidance of one or more faculty members. At the end of the senior year, students produce a written thesis and give both a poster presentation and a seminar presentation of their work. Samples of recent senior projects can be found on our website (<http://math.bard.edu>), under student research.

Preparing for Graduate School or Employment

Students interested in *Applied Math* should take:

- ❖ *Differential Equations (Math 211)*
- ❖ *Probability and Statistics (Math 275 or 319)*
- ❖ *Other Applied Math electives*
- ❖ Advanced Physics, Computer Science and/or Economics courses.

Students interested in *mathematics graduate school* should participate in a summer research program after their junior (or sophomore) year. They should also take several of the following:

- ❖ *Differential Equations (Math 211)*
- ❖ *Probability and Statistics (Math 275 or 319)*
- ❖ *Advanced Abstract Algebra (Math 432)*
- ❖ *Advanced Calculus (Math 312)*
- ❖ *Complex Analysis (Math 362)*
- ❖ *Topology (Math 351)*
- ❖ *Other Math electives, especially at the 400-level (selection varies from year to year)*

Career and Research Opportunities

Go to www.maa.org/students/undergrad/ for information about

- ❖ Summer Research
- ❖ Graduate School
- ❖ Math related careers

Weekly Math Program Events

Math Study Room

Every Sun through Wed, 7-10 pm, RKC 111

Math/CS Table

Every Wednesday, 12:15-1:15 pm, Kline Committee Rooms

Math/CS Seminar

Most Thursdays, 4:15-5:30pm, RKC 111