



NYU's academic center in Berlin now offers a rare opportunity for undergraduate mathematics students to stay on track for their major while studying in Germany's diverse capital. Mathematics classes in Berlin will be kept small, allowing for an intensive pace and close interaction with professors who are leaders in their field. To complement their studies in mathematics, students take a German language course, and may choose from a wide variety of courses in art, art history, environmental studies, metropolitan studies, politics, and much more. NYU Berlin's Mathematics program will begin in **Spring 2012**. Interested students are encouraged to contact the Director of undergraduate studies in mathematics under dugs@cims.nyu.edu

Mathematics Courses

Vector Analysis (MATH-UA 9224) * 4 points

Brief review of multivariate calculus: partial derivatives, chain rule, Riemann integral, change of variables, line integrals. Lagrange multipliers. Inverse and implicit function theorems and their applications. Introduction to calculus on manifolds: definition and examples of manifolds, tangent vectors and vector fields, differential forms, exterior derivative, line integrals and integration of forms. Gauss' and Stokes' theorems on manifolds.

Numerical Analysis (MATH-UA 9252) * 4 points

In numerical analysis one explores how mathematical problems can be analyzed and solved with a computer. As such, numerical analysis has very broad applications in mathematics, physics, engineering, finance, and the life sciences. This course gives an introduction to this subject for mathematics majors. Theory and practical examples using Matlab will be combined to study a range of topics ranging from simple root-finding procedures to differential equations and the finite element method.



The NYU Berlin Center

Berlin is a cosmopolitan city that holds a complex and crucial place in modern European history. Youthful, artistic, and hip, Berlin has traveled a path that led from the defining cultural avant-garde of the Weimar Republic to the devastation of World War II, from a divided city symbolizing the Cold War to today's reunified and renewed capital.

The NYU Berlin center is located right in the heart of the lively and vibrant Prenzlauer Berg district with its numerous restaurants and outdoor cafes. The Center is housed in the KulturBrauerei, a converted former brewery complex that is home to a movie theatre, shops, cafes and even yoga and dance studios. NYU Berlin's multi-story building features classrooms, offices, art studio space, a student lounge with kitchenette, and a computer lab. The program is affiliated with Humboldt University, and students have access to its facilities, including its libraries and dining halls.

For more information, visit: www.nyu.edu/studyabroad/berlin