



TECHNISCHE UNIVERSITÄT
CHEMNITZ

Erasmus + in Mathematics

Faculty of Mathematics

EU exchange student program



Erasmus+ is the EU's program to support education, training, youth and sport in Europe. Its budget of €14.7 billion will provide opportunities for over 4 million Europeans to study, train, gain experience, and volunteer abroad.

Studying abroad is a central part of Erasmus+ and has been shown to have a positive effect on later job prospects. It is also an opportunity to improve language skills, gain self-confidence and independence and immerse yourself in a new culture. Erasmus+ also offers the chance to combine studying abroad with a traineeship. Opportunities are available for students at Bachelor, Master or Doctoral levels.



City of Chemnitz

Chemnitz, the third largest city in Saxony, Germany, looks back proudly on a history of innovation with which few other cities can hope to compete. With the advent of the Industrial Revolution, Chemnitz quickly developed into the leading center of mechanical engineering in Germany. This great tradition has continued uninterrupted to the present day, even through the period in which the city was known as Karl-Marx-Stadt. Today, Chemnitz (population 245,000) is well on its way to becoming one of the most important high-tech locations in Germany. But Chemnitz has much more to offer than just science and technology. Amongst other things, there is the King Albert and Gunzenhauser Museums with their excellent collection of German Expressionist paintings, the newly reconstructed State Museum for Archeology in the former Schocken department store. The August Horch Museum close to Chemnitz tells the story of the famous AUDI production here. And in the Kassberg Quarter you can see the largest intact area of Art Nouveau architecture in Germany. More Information about Chemnitz can be found under [Website of the City of Chemnitz](#) and the [Wikipedia-entry of Chemnitz](#).



The focus of studies at the Faculty of Mathematics lies in mathematical modelling, optimization, and computation. The emphasis is on the adequately modeling of real-world applications by modern mathematical tools and the quantitative analysis of mathematical models. Numerical Analysis, Optimization, Scientific Computing, Inverse Problems are specialities of the Faculty.

Numerical Analysis:

Numerical Methods for Ordinary Differential Equations (ODEs),
Numerical Methods for Partial Differential Equations (PDEs),
Numerical Linear Algebra, Introduction to Wavelets

Applied Analysis:

Inverse Problems, Fourier Analysis, Analysis and Numerics of Integral Equations,
Distributions and Differential Operators, Orthogonal Polynomials

Optimization:

Nonlinear optimization, Discrete Optimization,
Optimization with partial differential equations,
Optimization under Uncertainty, Randomized Algorithms and Online Optimization,
Combinatorial Optimization, Infinite-Dimensional Optimization,
Algorithms for Convex Optimization

Stochastics:

Stochastic Analysis, Stochastic Processes,
Mathematical Methods of Uncertainty Quantification, Time Series Analysis

Algebra and Geometry:

Computer Algebra, Methods of Algebraic Statistics, Algebraic Geometry,
Singularity Theory, Convex and Toric Geometry

Applications:

Quantitative Finance, Algorithmic Game Theory, Mathematics of Big Data,
Scientific Computing, Graph Theory

Admission: Bachelor from the second year on, Master always possible

Duration: 3 - 12 months

Possible Certificates: Comparable record of ECTS credits

Duration:

Your study period at TU Chemnitz can last from a minimum of 3 months (or 1 academic term or trimester) to a maximum of 12 months. You can benefit of an exchange abroad with Erasmus+ multiple times, either as a student or as a trainee, but your total time abroad may not exceed 12 months. To study abroad with Erasmus+, you must be registered at an European university and enrolled in studies leading to a recognized degree. For Bachelor students, you need to be at least in the second year of your studies. Your period of study at TU Chemnitz must be relevant for your degree-related learning and personal development needs, and be part of the study program that you are following. Your home university must have an inter-institutional agreement with TU Chemnitz for you to study there with Erasmus+.

Academic recognition

Before the study abroad period: You, your university and TU Chemnitz must sign a Learning Agreement for Studies to ensure a transparent and efficient preparation of the exchange abroad, as well as to agree on how activities successfully completed abroad will be recognized. This document sets out rights and responsibilities of the various parties.

After the study abroad period:

1. TU Chemnitz provides you and your university with a transcript of records confirming that the agreed program has been completed and acknowledge the results.
2. Your university must recognize the ECTS credits as agreed in the Learning Agreement before the mobility and count them towards your degree, without any further requirements

Financial support: You may receive an Erasmus+ grant as a contribution to your travel and subsistence costs. It may vary according to differences in living costs between your country and the destination country, the number of students applying for a grant, the distance between countries and the availability of other grants. As an Erasmus+ student, you will be exempted from fees for tuition, registration, examinations, and charges for access to laboratories or libraries at TU Chemnitz.

How to apply: You can apply through the international or Erasmus+ office of your university.

