

Clausthal University of Technology

CUT is a small university with some 3,000 students and 90 professors. Students at CUT enjoy a unique and international atmosphere. In contrast to large universities, students and teaching staff have been able to develop a good personal rapport. Often students have the opportunity to become members of research teams during their Master studies.



Sports Facilities

Clausthal is located in the Harz Mountain National Park in northern Germany. CUT offers numerous opportunities for outdoor activities whether it be swimming, canoeing, walking or skiing.



Deadlines

We recommend to start studying in winter term (October), but commencing studies in summer term (April) is also possible. Official deadline for international applications is July 15 (for the up-coming winter term) and February 15 (for the up-coming summer term) respectively. Applications after these deadlines may be considered under certain circumstances.

Applications

Studentensekretariat der TU Clausthal
 Adolph-Roemer-Str. 2a, 38678 Clausthal-Zellerfeld
 Telefon: +49 5323 72-2218/-3890/-2493
 Telefax: +49 5323 72-3897
 E-Mail: studentensekretariat@tu-clausthal.de
 Internet: www.tu-clausthal.de/IA/

General Information

Adolph-Roemer-Str. 2a, 38678 Clausthal-Zellerfeld
 Telefon: +49 5323 72-3671
 Telefax: +49 5323 72-3168
 E-Mail: studienberatung@tu-clausthal.de
 Internet: www.tu-clausthal.de/zs/

Academic Advisor

Prof. Dr. Michael Kolonko
 Tel.: +49 5323 72 2410
 Fax: +49 5323 72 4876
 e-mail: kolonko@math.tu-clausthal.de
 Institut für Mathematik,
 Erzstraße 1, D-38678 Clausthal-Zellerfeld
 Internet: www.math.tu-clausthal.de

Internet

www.tu-clausthal.de
www.studium.tu-clausthal.de

Master of Science Operations Research



Operations Research (OR)

provides the scientific basis for decision making in complex economical and technical matters and employs methods from mathematics, economics and computer science. OR develops models and algorithms for various fields as production planning, airline management, traffic scheduling, energy supply, route planning, chip design or health care management. Typically, in these problems optimal solutions have to be found under numerous technical and economical constraints. Mathematical abstraction allows to reduce problems to a common model and to apply general solution methods.



Job Market

Today's economy faces multiple challenges from globalisation as well as from the need to save natural resources. There is less room for intuitive decisions in business, instead the need for optimal allocation of all resources increases. This is where experts from Operations Research come in. They are working in OR departments of large organizations, banks and insurance companies, in consulting businesses, in the private as well as in the public sector. They apply their knowledge to manufacturing of cars and pharmaceuticals, telecommunication industries and to transport, construction and service industries.

Master Program Operations Research

Duration: 4 semesters (2 years)
Degree: Master of Science (M.Sc.)

The first year is used to level and deepen the knowledge of

- mathematics (in particular stochastics and optimization)
- economics (e.g. operations management and project planning)
- Computer Science (e.g. data bases and software engineering)

During the second year students will focus on interdisciplinary courses, which aim to teach the typical process of problem solutions in OR: understanding problems, building models, formulate and implement algorithms, find a solution, apply it and adapt the model, if necessary. These courses work on real world problems, often in direct cooperation with German companies.

A Master Thesis completes the program.

Phase I Improving basic knowledge	Phase II integrating, application related	
Mathematics (stochastics, optimization) 36-42 CP ca. 47 %	Appli- cation 9 CP	Master Thesis 30 CP
Computer Science 18-24 CP ca. 25 %		
Economics 21-27 CP ca. 28 %		

Admission

To join the Master program a Bachelor degree in mathematics, computer science, business intelligence, industrial engineering or similar fields is required.

Students need a good background in mathematics, in particular applied mathematics, and should be familiar with the basic concepts of economics and computer science. They should be interested in applying mathematical models to practical applications, developing and implementing algorithms and should be able to work in teams.

Since the language of instruction is German, a sound knowledge of German is required.

Currently tuition fees amount to 500 € per semester. An additional administrative fee of 142 € will also be charged.

An Internationally Accepted Master Degree

A Master Degree from a German University of Technology is internationally accepted. It provides skills required for challenging jobs in a rapidly changing technological and economical environment. It also offers a chance to get into touch with German companies. Many of those are expanding to other countries and need personnel at executive level which have graduated from a German University and speak German.