

Educational System in Germany

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If you want to study in Germany, choose Saxony – there are no tuition fees. Every semester the student has to pay a small semester contribution for transportation and student services. At Chemnitz University of Technology, Bachelor studies take 3-4 years and Master studies 2 years. There are two semesters per academic year. The winterterm starts in October and the summerterm starts in April. A student can join the course either for the winter semester or for the summer semester. Classes can start at 7.30 a.m in the morning and end latest at 8.30 p.m. in the evening. But there are two long breaks of 45 minutes (breakfast and lunch) and 15 minute breaks between all other classes. Every lecture or seminar lasts for 90 minutes. Attendance in classes is not mandatory but the student may get problems to follow the lessons if he is not attending the classes regularly. In lab courses, attendance is compulsory. Only students who have an attendance rate of 80 percent or more are eligible to register for the final exam.



Figure 1 classroom in Chemnitz University of technology

The subjects include both theory and practical parts. In Germany, studies are generally research oriented but it strongly depends on the orientation of the different faculties and departments. In my case, practical work got more importance than theory. The theory, which is required for practical work, is taught in the class. The Institute for Print and Media Technology at Chemnitz University of Technology (pmTUC) has all the state of



Figure 2 viewing the sample through microscope

of machineries to do research in the field of printed electronics. The pmTUC produces most of the devices by conventional and digital printing: paper solar cells, organic field effect transistors, electro chromic devices, thin film batteries, pressure sensors and speakers. The students can do research in all the fields according to their area of interest. Students will get the chance to present their work in the subject “Research Project Seminar”. Once a week,

eminent personalities from the industry give presentations in the media colloquium about various topics.

The student has to take written exams for the first three semesters of his Master studies and the last semester is dedicated to the Master's thesis. The student has to register the subjects in the examination office (Prüfungsamt) in order to take part in the written exams. The University of Chemnitz follows a 1 to 5 scale system.

| Scale | Grade description |
|--------------|---|
| 1, 0 - 1, 3 | sehr gut (very good) |
| 1, 7 - 2, 3 | gut (good) |
| 2, 7 - 3, 3 | befriedigend (satisfactory) |
| 3, 7 - 4, 0 | ausreichend (sufficient) |
| Below 4.0 | nicht ausreichend (not sufficient/fail) |

The last semester concentrates on the Master's thesis. The student is assigned to a guide from the institute and will then do some research in new topics related to printed electronics and conventional printing. The maximal duration of the thesis is five months and the student has to work at least 300 hours in the lab. He has to include the results of his research in the thesis. At the end, the student has to defend his thesis in front of an expert committee from the institute. Only then, he will get his Master's degree.



Figure 3 University Bibliothek

Chemnitz University also provides extensive literature for your studies. In several libraries on the campus, all types of books related to science and engineering are available. The university library owns a collection of 1,174,000 books, dissertations, journals. In addition, the library also provides audiovisual materials and electronic information sources. The students can download useful information from the website www.bibliothek.tu-chemnitz.de. They can also search books and their location within the library.

Other facilities accessible on the campus are the university's computer rooms for working with special programs, reading, sending emails, searching for online information and printing

documents or scripts for seminars if required. The student needs his student card to access the computer rooms. Printers and scanners are also available in the computer rooms. There is, however, a charge for printing.

Fraunhofer ENAS, one of the Europe's largest application-oriented research organisation has a branch in Chemnitz. Their institute is situated at the backside of the university, Reichenhainer Straße. Students can do their research work in the department of printed functionalities. There are facilities for doing research on laser microstructuring,



Figure 4 Group photo in opera with German teacher

printed RFID antenna and inkjet printing.

The Master's degree is an English study programmes, all classes are held in English. German language, however, is absolutely essential for living in Germany. The University is conducting classes without any fees for international students. At the end of the first year of their Master studies, the student should have completed the German A₂ course.

After reviewing the German education system from different points of view, it can be assumed that it is one of the best systems in the world. I thank the German government for giving me an opportunity to study in Germany. I also thank all the staff members of Chemnitz University of Technology for their support and guidance in doing the Master's degree programme.