**City of Dresden**

The City of Dresden, with more than half a million inhabitants, is the capital of the state of Saxony. Dresden is located on the banks of the Elbe and is renowned for its opera, theaters, museums, and art galleries. Students can also enjoy a vibrant cultural scene. Dresden is surrounded by large forests and hilly terrain, which offer a variety of recreational activities.

Dresden is the center of Silicon Saxony, Europe’s most important cluster for micro- and nanoelectronics with more than 40,000 employees in about 1200 companies.

**Technische Universität Dresden**

The TU Dresden is one of the oldest and highly regarded technical universities in Germany. Today, the university has about 36,000 students, 6700 employees and 419 professors in 14 different faculties. The Faculty of Electrical and Computer Engineering has been rated as the best faculty for Electrical and Computer Engineering in the Centre for Higher Education Development (CHE) rankings published in 2010.

**Studying in Dresden**

*Counseling*

The master’s program starts with a group project and introductory and orientation meetings in the first week of October.

During the entire program further information and evaluation meetings are organized.

*Special Services*

The Studentenwerk Dresden offers various options for accommodation in Dresden. Costs range from 130 to 240 EUR per month. http://www.studentenwerk-dresden.de/english/

Complementary lectures in German are offered. German language courses are offered by various organizations, for example TUDIAS or Goethe-Institut, Dresden.

*Further Research Work*

Research work leading to a Ph.D. degree may be offered to top-level M.Sc. graduates.

*Fees*

There is no tuition fee. Students only have to pay an administrative charge of around 230 EUR per term.

*Grants*

Different options for receiving financial support are available. For further information please check http://tu-dresden.de/internationales, or go to the website of the DAAD (www.daad.de).

Please bear in mind that there might be possibilities of funding in your home country.
Our Mission

The ongoing miniaturization in the microelectronics industry leads to systems that are now being referred to as nanoelectronic systems. Such systems offer a variety of applications, but their design and implementation is becoming increasingly complex. This is the motivation for the new master’s program in “Nanoelectronic Systems” with the key areas:

1) Technologies for nanoelectronic systems.
2) Design of nanoelectronic systems.
3) Applications of nanoelectronic systems.

The correlation/overlap between these areas will also be covered. The program not only focuses on traditional scaling (“More Moore”), but also ideas and concepts for “More than Moore” and “Beyond Moore”.

The practical training (offered in parallel with theoretical concepts) develops skillsets and expertise that can be used during internships, project work, and the master’s thesis which can be undertaken at companies or research institutes.

Admission Requirements

Bachelors in Electrical Engineering, Information Technology, Physics, or similar with the following prerequisites:

- Advanced mathematics.
- Analog and digital circuit design.
- Electro-magnetic fields.
- Systems theory.
- Operation and construction of basic electron devices. (e. g. diode, bipolar and MOS transistors)
- Object-oriented programming.

One of the above prerequisites may be missing, but must be undertaken independently.

Certificate of proficiency in English on the level C1 of the Common European Framework of Reference for Languages (CEFR)

Elective Modules (a sample selection)

Technology
- Materials for Nanoelectronics and Vacuum Technology
- Memory Technology
- Molecular Electronics
- Nanotechnology and Material Science
- Optoelectronics

Design
- Computer Arithmetic
- High and Low Level Synthesis
- Integrated Circuits for Broadband Optical Communications
- Lab VLSI Processor Design
- Modeling and Characterization of Electron Devices

Applications
- Real-Time-Systems
- Software Fault-Tolerance
- Stochastic Signals and Systems
- System Engineering
- Theory of Nonlinear Networks
- Ubiquitous Information Systems
- Wireless Sensor Networks

Non-technical
- Investing in a Sustainable Future
- German Language and Culture

Medium of instruction is English for all modules.

Planned Start: October 2011

Initiated by