Since fall 2016 the Faculty of Engineering at Friedrich-Alexander University Erlangen-Nürnberg (FAU) offers the international Elite Master’s Degree Programme ‘Advanced Signal Processing and Communications Engineering’ (ASC). ASC is a 4-semester M.Sc. within the Elite Network of Bavaria taught in English and designed for holders of outstanding Bachelor’s degrees in Electrical Engineering, Communications Engineering, Computer Science, Applied Mathematics or closely related disciplines. This Elite Master’s programme is characterised in particular by advanced specialist training, intensive individual supervision of outstanding national and international students (‘high potentials’), early introduction of students to international cutting-edge research, an international outlook and the core skills it imparts to participants.

Fields of action
ASC is focusing on concepts for advanced technologies in the areas of signal processing and communications such as: information theory, coding, statistical signal processing, machine learning, pattern recognition, optimization and game theory. Students deepen the broad interdisciplinary scope of these topics choosing from various areas of specialization.

ASC and the local Metropolitan Region
According to the Shanghai ranking, FAU Erlangen-Nürnberg is first in Telecommunications Engineering within Germany. The ASC programme is embedded into this stimulating engineering school at FAU and is greatly enriched by the direct involvement of the International Audio Laboratories – a joint research unit of Fraunhofer IIS (‘Home of the mp3’) and the university. With numerous high-profile and world-renowned R&D institutions for audio, multimedia, communications, and medical systems (Siemens, Fraunhofer, Alcatel-Lucent, INTEL, Qualcomm, Continental, Doisy, Medical Valley, a.o.) nearby, theory meets practice on a daily basis, thereby offering many options for complementing studies and for starting an engineering career.

Friedrich-Alexander University Erlangen-Nürnberg (FAU) offers a range of subjects that is unique in its diversity in Germany. The Faculty of Engineering is one of FAU’s five faculties and has an excellent reputation in science and industry. For more than 40 years, highly qualified engineers and computer scientists have been graduating from more than 20 modern and interdisciplinary degree programmes and six Master’s programmes taught in English.
In future, society will face significant challenges associated with energy supply and ageing populations while digitalisation will continue to progress into all areas of life. Developing a society based on knowledge and innovation is essential to achieving economic competitiveness and sustainable development. Communications and multimedia technology will play a key role in every area of society, particularly for achieving goals of this nature. The purpose of the ASC Elite Master’s programme is to make a decisive contribution towards this objective by providing individualised training to particularly outstanding students.

Digital engineers in Germany will exert a decisive influence on the ongoing rapid pace of technological progress and the high rate of innovation in information and communications technology and their applications, in particular with regard to the emerging fifth generation (5G) of mobile communications systems and the Internet of Things. Cyber physical systems will play a central role in the worlds of business and everyday life. Their task will be to log, evaluate and communicate information collected from the environment, in particular multimedia content. Data needs to be protected ever greater amounts of information. Massive multi-antenna technology, the latest mathematics and computer science, such as advanced algorithms, will be required in particular. When the preparation of the profile of the ASC Elite Master’s programme was undertaken, excellence criteria for research and teaching were defined. ASC is driven by the Institute of Digital Communications, the Chair of Multimedia Communications and Signal Processing, the Chair of Electronics, the Chair of Economic Theory and the Chair of Economics – Discrete Optimization – Mathematics. ASC is also tightly linked to the International AudioLab Erlangen, a joint research institute of the university and the Fraunhofer IIS.

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Research and Teaching Environment

When the preparation of the profile of the ASC Elite Master’s programme was undertaken, excellence criteria for research and teaching were defined. ASC is driven by the Institute of Digital Communications, the Chair of Multimedia Communications and Signal Processing, the Chair of Electronics, the Pattern Recognition Lab, the Chair of Computer Networks and Communications System, the Chair of Hardware-Software-Cos-Design, the Chair of Economic Theory and the Chair of Economics – Discrete Optimization – Mathematics. ASC is also tightly linked to the International AudioLab Erlangen, a joint research institute of the university and the Fraunhofer IIS. All lectures are taught by internationally recognized research faculty, including five IEEE Fellows and recipients of numerous other national and international awards.

International Students

- Scholarships: Student jobs for all ASC-students are guaranteed to cover their cost of living, the average income being around €730 monthly.
- Tuition Fees: There is no tuition fee at FAU but every student should pay €114 per semester for student services and a semester ticket. Using the semester ticket, students can use bus transportation in Nuremberg, Erlangen and Fürth on weekends and also during the weeks from 7pm to 8am. They can promote their tickets to full time coverage by paying an extra fee.
- Visa: Before coming to Germany you need to check the visa requirements for your case. For further information see the Visa Information provided by DAAD.
- Residence Permit: If you are interested in complementing your financial resources by working in Germany, a working permit for student jobs or internships is quite easy to obtain.
- Health Insurance: In Germany you will generally need to be covered by health insurance. Several major insurance companies have branch offices in Erlangen.
- Accommodation: Accommodation in Erlangen costs between €250 to €400 monthly per person, depending on the size and type of room or apartment. The FAU accommodation support helps students to find an appropriate accommodation.
- Costs of Living: The minimum monthly cost of living (including accommodation and health insurance costs in Erlangen) is about €650 to €800.