▶ Numbers and Facts

Start: Winter semester
Duration: 4 semesters
Degree: Master of Science

▶ Application and Enrolment

Entry requirements
To be eligible for admission to this Master's programme students must have first completed a Bachelor's degree programme or an equivalent qualification in Computing Science or Psychology (with technical specialization) or a programme which is closely related to the subjects covered in the Master's programme. Students are also required to have good knowledge of the English language (at least B2 level of the common European framework of reference).

For further information on admission requirements and the application form, please refer to the admission regulations.

Application
With a German university entrance qualification: You can apply online on the University of Oldenburg's website.

EU or international applicants: You can apply through uni-assist e.V.

For more detailed information and deadlines, refer to:
www.uol.de/en/students/application-and-enrolment

▶ Contacts

For questions regarding your course of study
Academic Advisor
Phone: 0441-9722-566
E-mail: engsts@uol.de

Student association of Computing Science
E-mail: oldenburg@fachschaft-informatik.de
Web: fachschaft-informatik.de

General advice regarding studies
Study and Career Counselling Service - Zentrale Studien- und Karriereberatung

Application procedures / Entry requirements
Admissions Office - Immatrikulationsamt

StudierendenServiceCenter
Campus Haarentor A12
26129 Oldenburg
0441-798-2728
studium@uol.de
www.uol.de/en/students/service-advice

▶ Further Information

Homepage Computing Science
www.uol.de/informatik

Homepage Psychology
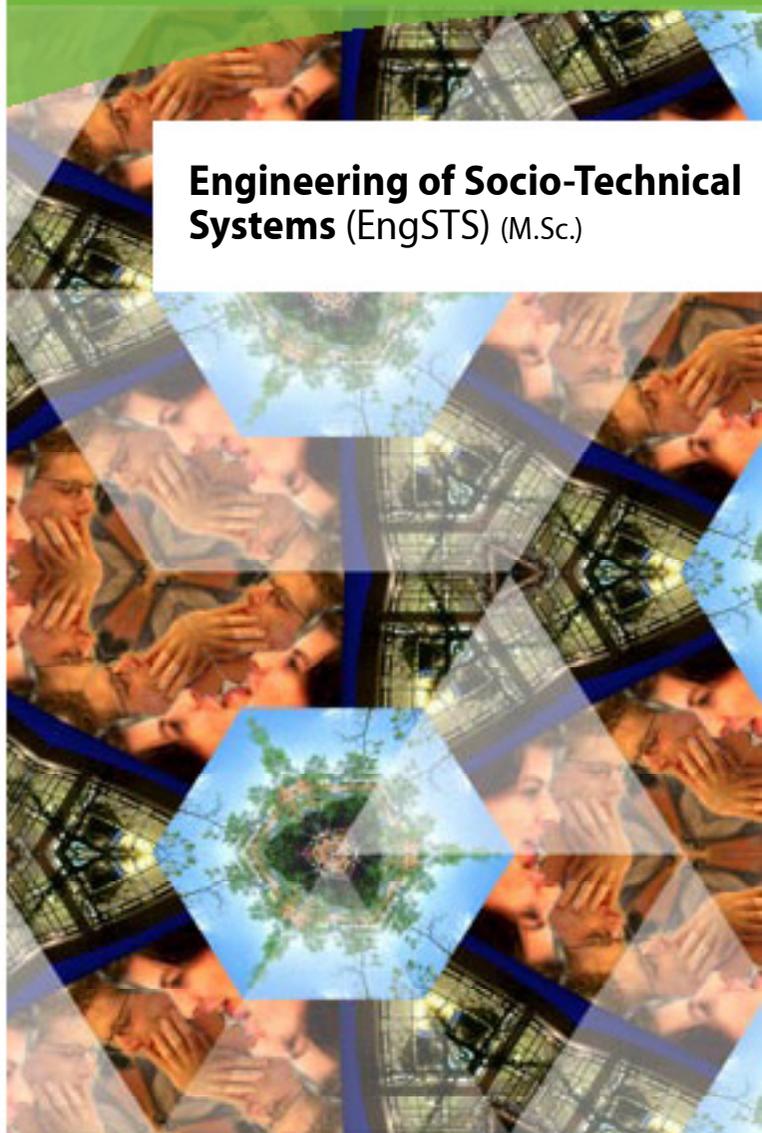www.uol.de/en/psychology/

Range of study courses
www.uol.de/en/students/degree-programmes

Funding
www.uol.de/studium/finanzierung

CARL VON OSSIETZKY UNIVERSITÄT OLDENBURG

Engineering of Socio-Technical Systems (EngSTS) (M.Sc.)

The English-language Master's degree programme Engineering of Socio-Technical Systems (EngSTS) is a specialized academic curriculum. To be admitted to this programme, students must have completed a Bachelor's degree in Computing Science or Psychology (with a technical specialization) or in one of the previously mentioned subjects which are closely linked to the Master's programme. The courses take an interdisciplinary approach to the development of safety-critical, computer-based interactive systems, and particularly focus on the interaction between humans and technology. They combine content from neuroscience with methods used by engineers to develop information systems. This Master's degree programme offers students a unique opportunity to follow an intricate mix of Computing Science and Psychology courses, especially cognitive psychology and perception.

During your studies, you will gain an in-depth understanding of the principles and methods of computer science and cognitive sciences, as well as their applications, which are necessary for the development of reliable socio-technical systems. By the end of the programme, you will understand the methods, problems and results of the latest research in this field. You will be able to evaluate theories and methods, process models, tools and systems according to scientific criteria and use them to solve practical problems. You will then be able to apply this knowledge to solve complex and new problems. You will gain expert knowledge about the design, specification, implementation, optimization, validation, operation, further development and safety analyses of complex socio-technical systems, and be able to apply and manage the application of this knowledge to solve problems systematically. You will learn how to work in transdisciplinary teams to determine and document the requirements of existing and new accentuation domains, to translate them into appropriate socio-technical system solutions, to implement those solutions and assess their characteristics.

In accordance with the internationalization of teaching at the University, the courses offered as part of this Master's degree programme are taught in English. This makes it much easier for international students to apply to and follow the programme. Native speakers of German have the opportunity to improve their English-language skills, as essential in the international labour market.

▶ Content and structure

The Master's degree programme EngSTS consists of four semesters (two years) and offers excellent opportunities for students to specialize in various focal areas and tracks.

- Fundamental Competencies in Computer Science and Psychology (18 credit points, first semester): Introduction to the relevant mathematical-logical and computer science principles and introduction to the relevant cognitive, psychological and empirical principles (compulsory modules)
- Foundations of Socio-Technical Systems Engineering (24 credit points): principles of neuroscience, psychology and computer science (compulsory modules)
- Accentuation Practical (24 credit points): specialization, students select specialization tracks (elective)
- Accentuation CS: specialization, students select a specialization from one of the core computer science courses (elective)
- Accentuation Domain: in-depth insights into the requirements and particularities of different accentuation domains (automation and robotics, automotive, maritime, medical technology, optional)
- Master's thesis (30 credit points) including final colloquium in the last semester

**M.Sc. Study Program
Engineering of Socio-Technical Systems**
General Structure

	Foundations of STS Eng.: Statistics and Programming		Foundations of STS Eng.: Cognitive Processes	Fundamental Competencies in Computer Science or Psychology (3 individually assigned courses)			
1. Term	Foundations of STS Eng.: Statistics and Programming		Foundations of STS Eng.: Cognitive Processes	Fundamental Competencies in Computer Science or Psychology (3 individually assigned courses)			
2. Term	Foundations of STS Eng.: Psychology and Philosophy of Technology	Foundations of STS Eng.: Systems Engineering	Accentuation in Computer Science	Accentuation Practical	Accentuation Practical	Application Domains and Domain-Specific Processes
3. Term			Accentuation in Computer Science	Accentuation Practical	Accentuation Practical	Application Domains and Domain-Specific Processes
4.	Master Thesis and Colloquium						

If you intend to spend a semester abroad we recommend doing so in the second semester, since you will still have the chance to follow and sit the examinations for the remaining units from the two-semester „Foundations of Socio-Technical Systems Engineering" modules in the fourth semester.

You can also make use of the eLearning and Distance Learning applications, which are available to provide extra support while you are studying in another country.

▶ Attractive and innovative tracks

Human Computer Interaction (HCI): This track equips students with the necessary theoretical knowledge and practical skills to design, implement and evaluate future interactive systems in the context of the design of complex technical systems. It combines basic knowledge of usability with knowledge from psychology to conceptualize and design interactions between humans and technology.

Embedded Brain-Computer Interaction (EmbeddedBCI): This track provides students with the necessary theoretical knowledge and practical skills to design and evaluate complex technical systems with both human and technical players as well as to use brain-computer interfaces in cyber-physical systems. This course covers the principles of system design, neurocognitive psychology and signal processing as well as a wide range of accentuation domains, which emphasizes the extent to which the knowledge and skills learnt during this course can be transferred to and applied in different areas.

Systems Engineering (SE): This track equips students with the necessary theoretical and practical knowledge to analyse, design and develop large cooperative networks of safety-critical, socio-technical systems, i.e., large systems without predefines system boundaries. At the end of this course, students will be able to recognize, analyse and describe the relationships between individual subsystems in the context of an integrated system as well as the interactions between subsystem properties and integrated system properties.

For more information about the tracks, see
www.uol.de/informatik/msc/engSTS