Facts and figures

Start: Winter semester
Duration: 4 semesters
Degree: Master of Science
Language: English
Admission restricted

Application and enrolment

Admission requirements

General admission requirements:
www.uol.de/stud/610en

Language skills:
English native speaker or level B2

Application

Application deadline: 15 July

German university degree:
Online application
www.uol.de/studium/bewerben/master

EU or international applicants:
www.uol.de/en/application/international-students/master

Contact

For questions about the subject/degree programme

Academic counselling for Engineering of Socio-Technical Systems
www.uol.de/en/subject-specific-student-advice

Student representatives for Computing Science
www.fachschaft-informatik.de/doku.php
oldenburg@fachschaft-informatik.de

For questions about your studies

Study and Career Counselling Service
www.uol.de/en/zskb

Basic questions about application and enrolment

Student InfoLine
Phone +49 441 798 - 2728
study@uol.de

Visitor address
Student Service Centre – SSC
Haarentor campus, Building A12
26129 Oldenburg
www.uol.de/en/students/service-advice

Further information

Engineering of Socio-Technical Systems website
www.uol.de/en/informatik/msc/engsts

Psychology website
www.uol.de/en/psychology

Degree programmes at the University of Oldenburg
www.uol.de/en/students/degree-programmes

Financing your studies
www.uol.de/en/students/fees/financing-your-studies

Optional period abroad
www.uol.de/en/going-abroad

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Carl von Ossietzky
Universität
Oldenburg

Engineering of Socio-Technical Systems

Master's degree

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

The English-language Master's degree programme Engineering of Socio-Technical Systems (EngSTS) is an academic programme of advanced study for students who have attained a Bachelor in Computing Science or Psychology with a technology specialisation or in a closely related subject. The degree programme takes an interdisciplinary approach to the development of safety-critical, computer-based interactive systems with a particular focus on human-machine interaction. It combines content from neuroscience with methods used by engineers to develop information systems. This results in the unique nature of the programme: a fascinating mix of Computing Science and Psychology, in particular cognitive and perception psychology.

Following the principle of internationalisation, all teaching courses are held in English. This facilitates access for foreign students; while students with German as a first language gain the language proficiency they need on an international employment market.

Career opportunities

Graduates are prepared for all application fields in which interactive, cooperative and cyber-physical systems (CPS) are developed and optimised:

- **Development of practical interactive systems**
- **Development of sensor and actuator systems for interaction with the human brain**
- **Consulting in systems analysis, design and implementation in various industries**
- **Research institutes**
- **Academic career (PhD)**
- **Automotive and aerospace**

Structure and contents

SEMESTER 1

FUNDAMENTAL COMPETENCES AND BASIC MODULES — 42 CP

Compulsory modules

- Fundamental Competences in Computing Science or Psychology (3 individually assigned courses) / 18 CP
- Foundations of Socio-Technical Systems Engineering: Cognitive Processes / 6 CP
- Foundations of Socio-Technical Systems Engineering: Statistics and Programming / 6 CP
- Foundations of Socio-Technical Systems Engineering: Psychology and Philosophy of Technology / 6 CP
- Foundations of Socio-Technical Systems Engineering: Systems Engineering / 6 CP

SEMESTER 2/3

SPECIALISATION MODULES — 48 CP

Elective module of a focus area

- Human-Computer Interaction
- Embedded Brain-Computer Interaction
- Systems Engineering

Elective modules – depending on specialisation

- Specialisation: Computing Science / 12 CP
- Specialisation: Practical / 24 CP
- Specialisation: Application Domains and Domain-Specific Processes / 12 CP

SEM. 4

COMPULSORY — 30 CP

- Master's thesis module

MASTER OF SCIENCE — 120 CP

Specialisations

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 conceptualise 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. The course covers the principles of system design, neurocognitive psychology and signal processing as well as a wide range of application domains. Therefore, the knowledge and skills learned 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 which may not be separable from other systems. At the end of this course, students will be able to recognise, 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.

Language skills

The degree programme is taught in English. German language skills are not necessary for admission.

Stay abroad

Students can spend the second semester abroad. In the fourth semester students can catch up with and sit exams in any contents they have missed from the two-semester module Foundations of Socio-Technical Systems Engineering.