

Engineering

Master

More information at
[hslu.ch/mse](https://www.hslu.ch/mse)



Program Structure

The Master of Science in Engineering is a practical and future-oriented degree program which offers eleven specializations, personalized supervision by an advisor, and a range of elective lecture modules tailored to your individual needs.

Lectures are primarily held in Zurich near Main Station. The language of instruction is English, except for the modules in the Civil Engineering specialization, which are taught in German. The project modules are carried out in English or German, as agreed upon with the advisor.



Do you have any questions?

Prof. Dr. Sascha Götte
Head of MSE program

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To complete your program, you will need to collect 90 ECTS credits over the course of three to seven semesters, either on a part-time or full-time basis.

1. Choose your specialization from Building Technologies, Business Engineering, Civil Engineering, Computer Science, Data Science, Electrical Engineering, Energy and Environment, Mechanical Engineering, Mechatronics and Automation, Medical Engineering or Photonics and Laser Engineering

2. Co-operate with your advisor
The role of your advisor is to provide specialist and organizational supervision throughout your degree program, develop research areas, assist you in planning your study program, and support you in your project work.

3. Choose your lecture modules
Choose from 140+ lecture modules.



Current list of advisors
on: hslu.ch/mse

The 90 ECTS Degree Program

10 Lecture Modules (30 ECTS)

Advanced fundamentals and subject-specific knowledge are essential. Please visit msengineering.ch for an overview of the available modules.

2 Specialization Projects (30 ECTS)

Applied Research and Development at Lucerne University of Applied Sciences and Arts (LUASA) includes company projects within your professional field. Supplementary lectures (EVAs) can be taken alongside the project assignments.

Supplementary Lectures / EVAs (3 ECTS each)

To reduce the volume of your specialization projects, consider attending optional supplementary lectures (EVAs); they offer specialized knowledge in small group settings.

Master Thesis (30 ECTS)

The final project assignment combines applied research and development with project management.

Lecture Modules (minimum 30 ECTS)

The theory modules are taught centrally near Zurich Main Station. Additionally, modules in Lausanne or Lugano can be chosen. Each theory module carries a value of 3 ECTS credits. These modules are divided into three categories:

Technical Scientific Specialization (TSM)

Modules focused on the chosen specialization with a minimum requirement of 12 ECTS credits.

Fundamental Theoretical Principles (FTP)

In-depth lectures on essential theoretical principles, with a minimum requirement of 9 ECTS credits.

Context Modules (CM)

Non-technical modules covering diverse topics such as business, ethics and the law are available. The minimum requirement is 6 ECTS credits.

Specializations



Building Technologies

The specialization aims to enhance your understanding of thermal and electrical building technology systems, building automation and information, as well as building climatology. You will develop skills in decentralized and modular energy supply and storage, thermal and electrical supply networks, and life cycle analyses of material flows and resources. Moreover, you will acquire the expertise to design holistic building services engineering solutions.



Business Engineering

Enhance your expertise by integrating engineering, business, and user-centered design knowledge to develop innovative products, services, solutions and business models that resonate with both, users and customers. This approach will boost your proficiency in market analysis, agile methodologies, business processes, production, sales and marketing as well as innovation. Specialization options include product and service management, supply chain management or business process reengineering.



Civil Engineering

Gain expertise to assume a leading role in engineering firms, construction companies or public institutions in the disciplines of structural, geotechnical, hydraulic, and facade engineering. The wide range of topics covered includes bridge and seismic design, soil-structure interaction, dam construction, and river engineering. This specialization also addresses challenges related to the maintenance of civil engineering structures, principles of sustainable construction and provides training in project management skills.



Computer Science

Enhance your skills and broaden your knowledge in computer science for roles in research, development, and technical management. Develop innovative IT solutions, optimize complex systems and migrate legacy projects. Gain proficiency in leadership and comprehensive IT infrastructure management skills.



Data Science

Gain expertise in the areas of data analytics, statistical methods, data mining, and machine learning. Improve your skills in designing experiments, constructing and validating data-driven models, and deriving meaningful insights along with critical thinking abilities. Gather application-specific data from diverse sources, such as structured relational databases, unstructured data, big data platforms, and real-time streaming data feeds. Recognize the significance of collecting application-related data from a wide range of sources.



Electrical Engineering

Expand technical skills and become qualified to handle complex projects and manage technical departments. Contribute to advancing the state of the art in your chosen fields. Analyze problems and develop electrical and electronic solutions. Tackle various tasks in applied research, product development, production automation, and operation of electrical devices and systems.



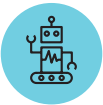
Energy and Environment

Engage in practical research and development projects and learn how to design, model, simulate, implement, operate, and assess complex energy systems in industrial processes, process engineering, building technologies, district heating and cooling, environmental technologies for soil, water, and air purification, and many more. Seek technical solutions to maximize the utilization of renewable energies and minimize environmental impact.



Mechanical Engineering

Acquire skills for developing, manufacturing, and optimizing machinery, materials, and products in industrial, research and regulatory settings. Identify and analyze problems to develop engineering solutions and successfully bring them to market. Create and assess complex designs taking into account established standards and applying state of the art CAx technologies. Enhance your knowledge with a holistic view of complete systems, along with the skills to evaluate and optimize them.



Mechatronics and Automation

Immerse yourself in the world of robotics and learn to develop, model, analyze, and deploy complex systems. Acquire expertise in mechatronics, robotics, automation, measurement, and control technology as well as signal processing, communication, data processing, and data security. Develop skills in analyzing and evaluating mechatronic systems and in project management.



Medical Engineering

Empower patients well-being with cutting-edge solutions. Collaborate with pioneering research teams which are driving the frontier of technology in medicine. Explore groundbreaking research that revolutionizes treatment strategies for patients. Acquire knowledge of medical device requirements and regulations, delving into the realm of CE certification for transformative devices. Join us as we shape a radiant future for healthcare together.

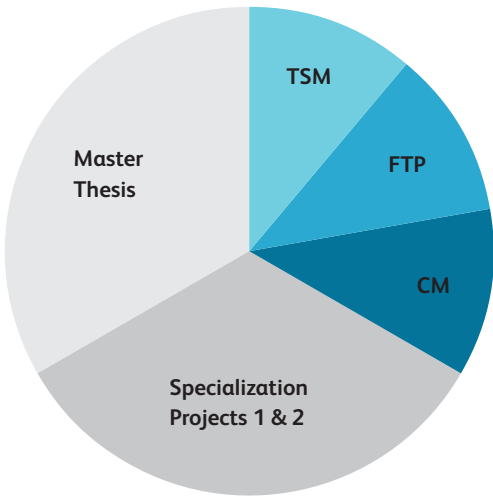


Photonics and Laser Engineering

Gain knowledge and understanding of optical and optoelectronic components, light-based processes, and measurement methods. Design novel photonic solutions for specific applications and interface them with electrical and mechanical systems. Analyze laser and X-ray physics processes and their applications in industrial processes and devices. Acquire profound knowledge in fields such as imaging systems, spectroscopy, thin film technologies, and interferometry.

For detailed information on our MSE specializations, please visit our website and check out our testimonial videos at www.hslu.ch/mse-testimonials

Structure of the Master's Degree Program



Lecture Modules (30 ECTS)

- TSM: Technical scientific specialization (12-15 ECTS)
- FTP: Fundamental theoretical principles (9-12 ECTS)
- CM: Context modules (6-9 ECTS)

Project Modules (60 ECTS)

- Professional specialization (30 ECTS)
 - Specialization project 1 (12 ECTS)
 - Specialization project 2 (18 ECTS)
 - Supplementary lectures (3 ECTS each)
- Master thesis (30 ECTS)

International Partnerships and Careers

Broaden your Horizons

Studying a semester abroad lays the perfect foundation for embarking on an international career. You gain new knowledge, improve your language skills, and develop intercultural competencies.

The University of Applied Sciences and Arts – School of Engineering and Architecture has partnerships with over 80 universities worldwide. You have the opportunity to spend a semester abroad or participate in a Double Degree program in Italy, Austria, or France.

For more information on the Double Degree Programs, please visit [hslu.ch/mse-dd](https://www.hslu.ch/mse-dd).

Furthermore, there are various opportunities available, such as International Summer Schools or projects with research partners in the international industry or at partner universities.

A semester abroad can be a significant personal, professional, and social enrichment. Do not miss out on this opportunity.

For more information, please visit [hslu.ch/ea-international](https://www.hslu.ch/ea-international).

«SungKyunkwan University is a prestigious institution that offers a wide range of subjects and hosts numerous student clubs for various sports and recreational activities providing international students with opportunities to immerse themselves in Korean culture.»

Luca Grossmann

Master Student in Business Engineering

He completed an exchange semester in South Korea in 2022.

Useful Information



Application

Applications for the Master's degree program will be accepted at any time.



Sports

Lucerne UASA offers an attractive and diverse sports program.

unilu.ch/en/university-life/sport/



Employment

In parallel with the part-time study model, we offer the opportunity for part-time employment (up to 50%) within one of the research groups at Lucerne University of Applied Sciences and Arts.

hslu.ch/en/lucerne-school-of-engineering-architecture/research/



Accommodation

Are you looking for a place, perhaps a room you can call your home for learning and living? We offer affordable accommodation both for local and exchange students. For housing inquiries please contact housing@hslu.ch.



Student Counselling

Find information about funding and student loans at hslu.ch/stipendien.



Theory Modules

The MSE degree program is part of a co-operation among the Swiss Universities of Applied Sciences, which is why lectures are held at central locations in Switzerland. Students of LUASA mostly attend lectures near Zurich Main Station.



Commencement of Studies

You can start the MSE degree program in the spring semester (mid-February) or in the fall semester (mid-September).



Self-employment / Start-up

Are you preparing for future self-employment? 'Smart-up' is here to support you.
[hslu.ch/smart-up](https://www.hslu.ch/smart-up)



Admission

Excellent grades in a bachelor's degree in Engineering or Computer Science and proficiency in English at level C1 (CEFR) are both required for admission to the degree program. Foreign students specializing in 'Civil Engineering' are required to have a proficiency in the German language at level C1.



Practical Focus

We equip you with the skills necessary for your future career. Students collaborate closely with real-world businesses throughout their degree program, including the master thesis.



Flexibility

Customize the curriculum to meet your personal needs: the MSE degree program consists of 90 ECTS and can be pursued on a full-time or part-time basis. The maximum duration for completing your studies is seven semesters.



Campus

Are you more of a mountain or a town person? Our campus is conveniently located and easy to reach from both rural and urban areas.
[hslu.ch/ta-standort](https://www.hslu.ch/ta-standort)

Do you have any questions?

Our Bachelor & Master Secretariat will be happy to assist you.

**Lucerne School of
Engineering and Architecture**

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Blog: [hub.hslu.ch/ta-experience](https://www.hslu.ch/ta-experience)



For more information
about our Master of
Science in Engineering