

**C>ONSTRUCTOR**  
INSTITUTE



Tuition  
fee  
offer



Study in Switzerland



# Educating the NEXT generation of digital leaders



Our graduate  
programs





# MSc in Computer Science, Software Engineering, and Leadership (CSSEL)

## Facts and figures

- Academic degree  
Master of Science in Computer Science, Software Engineering and Leadership (CSSEL)
- Language of instruction  
English
- Application & Admission dates  
**30th of Apr for all students - Rolling admission\***
- Program start date  
Mid September (classes)
- Teaching mode  
Hybrid mode (ideal if your visa is not ready on time)
- Study duration  
Classic program (120 ECTS):  
4 semesters; Fast-track and part-time options available
- Tuition  
10,000 CHF per year for EU and EFTA students \*\*  
20,000 CHF per year for non-EFTA and non-EU nationals \*\*
- Location  
Schaffhausen, Switzerland
- Scholarships  
Full scholarships and tuition waivers for students with excellent grades are available
- Teaching benefits  
Supported by a unique team of world-class scientists, educators, and leaders

## What we offer

- Deep interdisciplinary technical expertise
- Entrepreneurial mindset and a can-do mentality
- Strong connections to major target industries
- High-tech, high-touch study environments

\* Deadline could be extended due to individual circumstances and availability

\*\*Spring forward - 10% tuition fee reduction by 30th of April

## Drive innovation in a digitalized future

The complex, ambitious, and innovative software systems developed by successful technology companies require a particular kind of leader, possessing both in-depth technical knowledge and excellent leadership abilities. Some traditional master's programs train software developers, and others train classical managers, but they often fail to deliver the digital-technology-savvy leaders that companies need for positions such as Product Manager, Chief Information Officer, Chief Security Officer, Chief Technology Officer, Chief Program Officer, Chief Security Officer, Chief Development Officer, Chief Product Officer, and others requiring competence on both sides.

The Master of Science in Computer Science, Software Engineering and Leadership (CSSEL) at Constructor Institute Schaffhausen addresses this urgent need. The research-oriented master's program includes a wide range of courses and projects covering a broad spectrum of computer science and software engineering topics as well as essential management and leadership skills. To prepare students for the role of technology leaders in research and industry, the CSSEL master's program provides a strong software engineering training covering both development and management, as well as core technical courses in three areas that lie at the heart of modern IT systems:

- Software engineering
- Cybersecurity
- Artificial intelligence

Courses are taught by experts in the field, including permanent Constructor faculty and lecturers from companies.

By completing the master's program, students acquire the core expertise of digital leaders, with a strong technological backbone, and essential management and leadership skills, making them ready for active leadership in the digital technology field.

Constructor University's multi-country setup prepares them to play a key role in today's global and multiethnic societies. While many students join the industry in high-profile roles, the CSSEL program is also an excellent preparation for Ph.D. research in software engineering, cybersecurity, artificial intelligence and other advanced topics.

## Program structure

➤ MSc in Computer Science, Software Engineering and Leadership (CSSEL)

		Master Thesis / Seminar (m, 30 CP)						
➤ Year 2		Core (me, 5.0 CP)	Core (me, 5.0 CP)	Core / Research Project* (me, 5.0 CP)	Capstone Project III (me, 5.0 CP)	Transformational Change Management (m, 5.0 CP)	Customer-centric Mindset and Agile Delivery Management (m, 2.5 CP)	Agile Leadership & Strategic Management (m, 2.5 CP)
		Architectural Strategy (m, 5.0 CP)	Core (me, 5.0 CP)	Core (me, 5.0 CP)	Capstone Project II (me, 5.0 CP)	Product Innovation and Marketing (m, 5.0 CP)	Organizational Behavior (m, 2.5 CP)	Academic Writing Skills / Intercultural Training (m, 2.5 CP)
➤ Year 1		Software Construction, Software Architecture and Software Engineering (m, 5.0 CP)	Quality Engineering (me, 5.0 CP)	Core (me, 5.0 CP)	Capstone Project I (me, 5.0 CP)	Agile Product Development & Design (m, 5.0 CP)	Entrepreneurship & Intrapreneurship (m, 2.5 CP)	Communication & Presentation Skills for Executives (m, 2.5 CP)
		Core Technical Content				Management	Leadership / Academic Skills	

m = mandatory, me = mandatory elective







# MSc in Quantum Software Engineering and Computer Science (QSECS)

## Facts and figures

- Pre-requisite**  
BSc in Physics or related field (with solid coding skills), BSc in Computer Science or related field.
- Language of instruction**  
English
- Application & Admission dates**  
**30th of Apr for all students - Rolling admission\***
- Program start date**  
Mid September (classes)
- Teaching mode**  
Hybrid mode (ideal if your visa is not ready on time)
- Study duration**  
Classic program (120 ECTS):  
4 semesters; Fast-track and part-time options available
- Tuition**  
10,000 CHF per year for EU and EFTA students \*\*  
20,000 CHF per year for non-EFTA and non-EU nationals \*\*
- Location**  
Schaffhausen, Switzerland
- Scholarships**  
Full scholarships and tuition waivers for students with excellent grades are available
- Teaching benefits**  
Supported by a unique team of world-class scientists, educators, and leaders.

## What we offer

- Deep interdisciplinary technical and quantum expertise
- Small classes of excellent students and approach
- Strong network of interrelated industries
- Modern methods of teaching and contemporary environment

\* deadline could be extended due to individual circumstances and availability  
\*\* Spring forward - 10% tuition fee reduction by 30th of April

## The future of software is Quantum computing

This program is the first of its kind and seeks to simultaneously prepare students with the software engineering and leadership skills necessary for the quantum future. The dynamic and innovative software systems of the future require a particular kind of individual who possesses in-depth technical knowledge, a holistic approach to solving complex problems, and excellent leadership abilities.

The Master of Science in Quantum Software Engineering and Computer Science (QSECS) at Constructor Institute provides aspiring students with the unique opportunity to dive into quantum computing, learn software engineering, and understand how to create businesses around these exciting and emergent technologies. It is the ideal program for a physicist with strong coding skills or a computer scientist willing to explore quantum computing.

To prepare students for the role of leaders in research and industry, the QSECS master's program provides a strong software engineering curriculum that covers development and management, and core technical courses in quantum technology. The main areas of research are:

- Software engineering
- Quantum technologies



Constructor Institute's multi-country setup prepares graduates to play a key role in today's global and multi-ethnic society. While many students join the technology industry in high-profile roles, the QSECS program also serves as an excellent preparation for Ph.D. research in software engineering, quantum technologies, AI, and other advanced topics.

- The main topics covered are:
- Advances in software engineering
  - Quantum informatics
  - Capstone project
  - Agile product development & design
  - Entrepreneurship and Intrapreneurship

## Program structure

➤ MSc Quantum Software Engineering and Computer Science (QSECS)

		Master Thesis (30 CP)						
➤ Year 2		Advances in Software Engineering (5.0 CP)	Quality Engineering (5.0 CP)	Quantum Informatics II (5.0 CP)	Capstone Project III (5.0 CP)	Transformational Change Management (5.0 CP)	Customer-centric Mindset and Agile Delivery Management (2.5 CP)	Agile Leadership & Strategic Management (2.5 CP)
		Architectural Strategy (5.0 CP)	Machine Learning (5.0 CP)	Quantum Informatics I (5.0 CP)	Capstone Project II (5.0 CP)	Product Innovation and Marketing (5.0 CP)	Organizational Behavior (2.5 CP)	Academic Writing Skills / Intercultural Training (2.5 CP)
➤ Year 1		Software Construction, Software Architecture & Software Engineering (5.0 CP)	Cryptography (5.0 CP)	Introduction to Quantum Physics Or Advanced programming (5.0 CP)	Capstone Project I (5.0 CP)	Agile Product Development & Design (5.0 CP)	Entrepreneurship & Intrapreneurship (2.5 CP)	Communication & Presentation Skills for Executives (2.5 CP)
		Computer Science and Software Engineering		Quantum Specific	QSECS Capstone	Leadership courses		





## Applying knowledge with the Capstone project

The Capstone project allows students to apply the knowledge and expertise in technical, management and leadership skills gained throughout the master's program in a "real-world" project that runs over the course of three semesters. The course teaches students how to effectively design reliable systems that meet the needs of producers and customers, developing solutions to agreed-upon problems with industry partners and laboratories that act as clients. Working closely with instructors and assistants, students are mentored and work in a modern environment supported by open-source IDEs and engineering tools.



Prof. Manuel Oriol

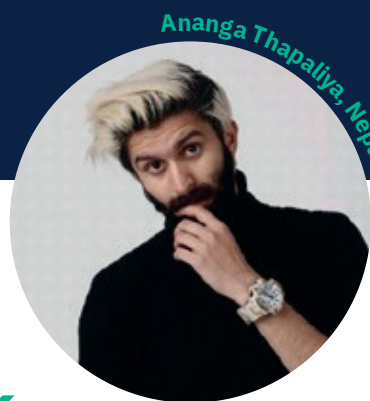
## Career opportunities

Constructor Institute's master of science programs allow you to graduate with the skills needed to drive innovation in industry, academia, or through your own startup. Through interdisciplinary learning and the development of strong skills in various functional areas, the knowledge gained throughout the master's program will not only guide you to the career of your choice but will allow you to stand out as an exceptional candidate.

With scientifically up-to-date course content, the skills and knowledge required by the industry needs of today and tomorrow are expertly met. The students profit from unique opportunities such as employment through our network, research project participation, and opportunities to access the EU and Swiss job markets.



Studying in Switzerland offers a unique and enriching experience that combines natural beauty, academic excellence, and a high quality of life.



Ananga Thapaliya, Nepal

“

It's a flexible and demanding program that prepares you for the real world, equipping you with both hard and soft skills. Whether you come from a technical or business background there is something for everyone – programming, entrepreneurial, and business courses. It gives you so many opportunities by exposing you to new people and a new culture. If you are proactive, you will make connections with a lot of companies, and be able to handle yourself anywhere.”



Flora Teklit, Ethiopia

“

The way the program is designed is quite innovative. It's a mixture of technology and leadership courses, where you get good exposure to emerging technologies, and is a perfect fit for the current market. It's located in the most beautiful city, Schaffhausen, with supportive faculty members and diverse classmates. You will not regret joining this program!”



Yuri Gritsuk, Belarus

“

Switzerland is a great country to be in because of its high standard of living, the tolerance of people and the number of opportunities available.”

Check our video here



## Future leadership jobs

- **Chief Architect (CA):** A crucial and active horizontal role to drive the technology delivery roadmap across the organization.
- **Chief Product Officer (CPO):** A strategic leader, visionary, and team supervisor of new-generation product management in which computer science, business, and innovation are combined.
- **Chief Program Officer (CPO):** A new leader who focuses on program value flow and delivery, stakeholder communication, cadence and planning, cross-team collaboration, and continuous improvement.
- **Chief Development Officer (CDO):** A strategic leader who shapes an enabling engineering environment – people, structure, agile processes, and tools.
- **Chief Security Officer (CSO):** A transformational leader who takes a “bodyguard” approach rather than a “gate-keeper” one.



## Take concrete steps toward the career of your dreams

Use the writing of a master's thesis to further enhance your career prospects or diversify into a different functional area.

- Research project
- Industry project
- Startup design

## Industry partners

At Constructor Institute, we believe that to prepare the next generation of leaders in science, students must learn not only from renowned scientists but also from business leaders. Traditional technical education does not fully prepare students for a technical career. Our network of industry partners has experienced this firsthand. That is why we provide access points to several large software and IT organizations headquartered in Schaffhausen, allowing a one-of-a-kind relationship with industries.

- Acronis: Leader in cyber protection.
- Plesk: Leading WebOps hosting platform.
- Acumatica: Leading innovator in cloud ERP.
- cPanel: Industry-leading hosting platform.
- Parallels: Leader in cross-platform solutions.
- Runa Capital: Global venture capital firm.





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**Knowledge through science**



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Constructor Institute  
Rheinweg 9 · 8200 Schaffhausen ·  
Switzerland [www.institute.constructor.org](http://www.institute.constructor.org)

