School of Engineering

School of Life Sciences & Facility Management

School of Management and Law

https://www.zhaw.ch/en/sml/study/master/circular-economy-management/

Circular Economy Management

Master of Science (MSc)

Building Competence. Crossing Borders.

“Our Master of Science provides a unique, interdisciplinary, and practice-oriented approach that also allows students to focus on their professional goals and interests.”

Dr. Christian Zipper, Head of MSc in Circular Economy Management, ZHAW School of Engineering

Prof. Rolf Krebs, Head of MSc in Circular Economy Management, ZHAW School of Life Sciences and Facility Management

Prof. Christian Vögtlin, Head of MSc in Circular Economy Management, ZHAW School of Management and Law

(From left to right)

Editorial

We have a responsibility to educate, train, and prepare students, the managers of the future, so they can help organizations manage the transition from a linear economy towards sustainability and a circular economy. A central theme is the balance between economic, technological, social, and ecological sustainability.

The MSc in Circular Economy Management is a new degree program that supports our university's key commitment to sustainability, specifically to impart and develop knowledge and skills in that area and support individuals and organizations in their efforts to make a valuable contribution to society.

This Master's program has been designed and developed jointly by three schools of Zurich University of Applied Sciences (ZHAW) – Life Sciences and Facility Management, Engineering, and Management and Law. It is a truly interdisciplinary program that utilizes and combines expertise from several different disciplines.

The aim of this Master's program is to equip students with the necessary professional and interdisciplinary skills to understand and explore the concept of a circular economy in all its facets. The strong involvement of business and industry in all areas ensures the practical relevance of this degree program. It also allows students to choose a learning path focused on specific professional roles and career paths.

Our program is aimed at ambitious, high-performing graduates who would like to develop expert knowledge and practical skills to help launch their career in sustainability and the circular economy. Discover for yourself what makes the MSc in Circular Economy Management so special.

Dr. Christian Zipper

Head of MSc in Circular Economy Management, ZHAW School of Engineering

Prof. Rolf Krebs

Head of MSc in Circular Economy Management, ZHAW School of Life Sciences and Facility Management

Prof. Christian Vögtlin

Head of MSc in Circular Economy Management, ZHAW School of Management and Law

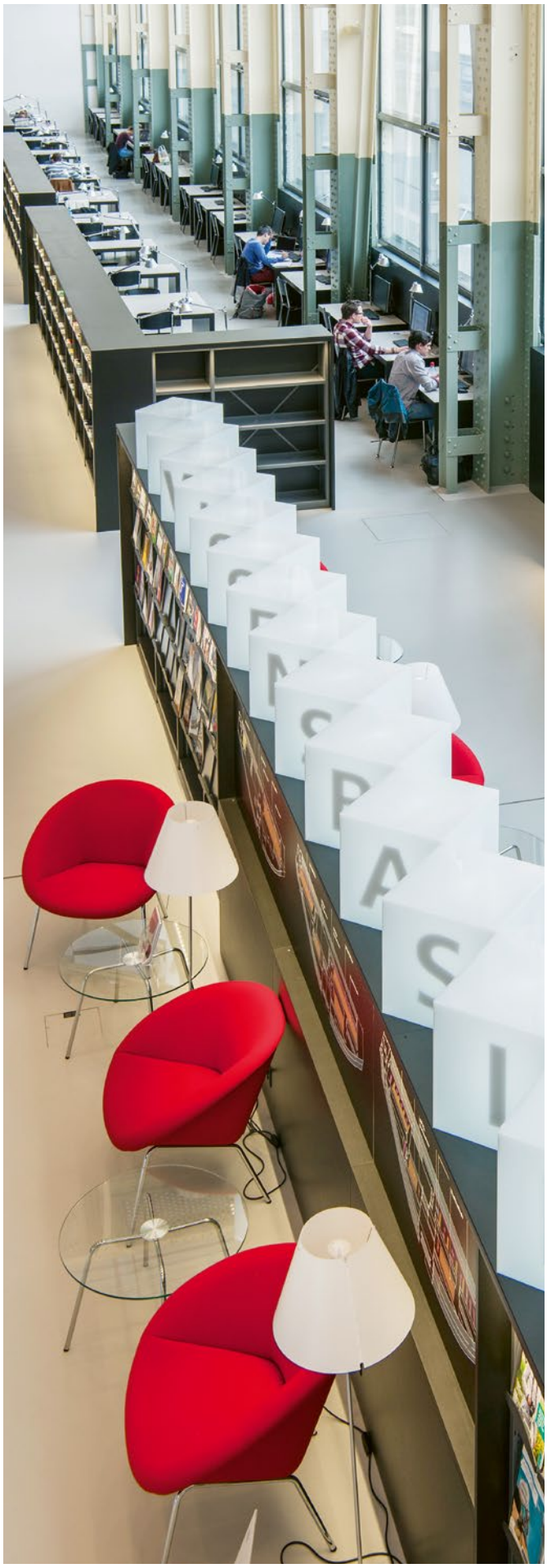
AACSB ACCREDITED

In 2015, the SML became the first business school of a Swiss university of applied sciences to be accredited by the Association to Advance Collegiate Schools of Business (AACSB). A mere six percent of the world's business schools have managed to achieve this prestigious standard of achievement awarded by the most significant international accreditation institution for business schools.

FT EUROPEAN BUSINESS SCHOOLS **RANKING**

FT MASTERS IN MANAGEMENT **RANKING**

The SML has featured in two of the prestigious Financial Times rankings since 2020. It is listed as one of the best European business schools, and its Master of Science in International Business is ranked among the best in the world.



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At a Glance

Key Data

Title	**Master of Science (MSc) in Circular Economy Management**
Start	**September**
Workload	**90 ECTS (European Credit Transfer System) credits, approx. 2,700 hours of work**
Length of Program	**3 semesters, full-time study**
Location	**Winterthur, Zurich and Wädenswil, Switzerland**
Cost	**CHF 720 regular semester fee (includes a flat-rate fee for exams)** **CHF 500 additional semester fee for students legally domiciled outside Switzerland** **CHF 100 enrollment fee**
Admission Requirements	**Bachelor's degree in an economic, engineering, or natural sciences discipline** **Knowledge of English: B2+ level according to Common European Framework of Reference for Languages (CEFR), to be documented** **Applicants must pass an entrance exam**
Language	**English**
Instruction	**Monday to Friday**

Competence Profile

The program aims to equip students with the necessary professional knowledge and skills to deal with the complex issues of the circular economy. Unique to this Master's program is the inter- and transdisciplinary approach throughout. It combines all dimensions of the circular economy – technical, environmental, social, and economic – providing practical and theoretical knowledge in all disciplines. Emphasis is placed on the development of critical thinking, creativity, communication, teamwork, self-management, and self-reflection.

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For further details and to register for the program:
››› www.zhaw.ch/sml/master-cem

Five Good Reasons for Getting a Master's Degree at ZHAW

PRACTICAL ORIENTATION

At ZHAW, not only are instructors academically qualified, but they also have extensive practical experience as well as access to a broad professional network. The program is orientated towards applied learning. In addition, the program provides opportunities for you to meet potential future employers.

DIGITAL LEARNING

Teaching at ZHAW is continually developed and updated to incorporate the most up-to-date methods. Digitally supported learning makes content descriptive, enables learning to be more flexible in terms of time and place, and integrates career-relevant media tools into the study program.

INTERNATIONAL ALIGNMENT

ZHAW degree programs are designed to foster global, international, and intercultural learning and prepare students for their future professions. Case studies and projects with ZHAW partner universities enable students to gain international experience that is both valuable and relevant.

HIGHLY REGARDED AND ACCREDITED

ZHAW is one of the leading universities of applied sciences in Switzerland. It offers teaching, research, continuing education, and other services that are both practice-oriented and science-based. The university is accredited by AAQ, the Swiss Agency of Accreditation and Quality Assurance, and AACSB International.

STAYING CONNECTED

Our campuses are in close proximity to the financial and business center of Zurich and well connected to the public transportation network. In addition, the close ties ZHAW has to companies and organizations as well as its extensive alumni network ensure excellent career prospects.

Consecutive Master's Program

The next step in your professional career

Consecutive Master's degree programs are targeted mainly at exceptionally capable and ambitious Bachelor's graduates seeking an additional academic qualification and possessing a keen scientific interest.

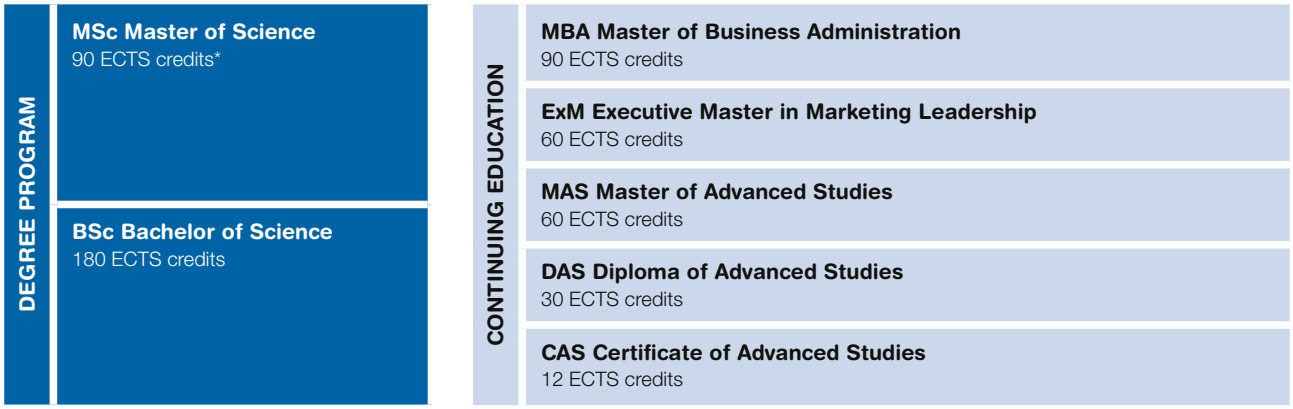
THE BENEFITS OF A CONSECUTIVE MASTER'S PROGRAM

The minimum requirement for participation in a consecutive Master's program is a Bachelor's degree or equivalent qualification. Consecutive Master's programs at universities of applied sciences typically comprise 90 ECTS credits. This corresponds to a workload of approximately 2,700 hours, usually spread over four or six semesters. Consecutive Master's programs build on the content of Bachelor's degree programs. They offer a professional specialization with scientific skills development and high practical relevance. They promote professional, methodological, social, and self-competence and open up career prospects in middle and senior management. Our consecutive Master's programs are recognized internationally, so they also enable graduates to pursue a career outside Switzerland.

NOT ALL MASTER'S PROGRAMS ARE THE SAME

A consecutive Master's program is the second level of education in the university system and should not be confused with the MAS (Master of Advanced Studies) or the MBA (Master of Business Administration). Both the MAS and MBA are continuing education programs and require several years of practical experience on the part of participants. With a consecutive Master's program, the workload is greater, and academic standards are higher.

STRUCTURE



* Credits are based on the ECTS credit system (European Credit Transfer System). Credits create transparency in European education through a standardized evaluation of academic achievements. One credit represents approx. 30 hours of work in a (BSc/MSc) degree program and 25–30 hours of work in a continuing education program.

The Program's Value-Added

Help accelerate the transition to a circular economy

Are you interested in pursuing a career that helps organizations manage the transition towards a circular economy? Are you looking for a Master's degree that will help you to gain the necessary professional and interdisciplinary skills?

THE NEED FOR MANAGERS WITH INTERDISCIPLINARY SKILLS AND COMPETENCES

Its interdisciplinary nature allows the program to draw on expertise from a variety of disciplines – engineering and technology, natural and environmental sciences, business studies, and social sciences. As a result, graduates are employable in a wide range of industries.

A MASTER'S DEGREE TAILORED TO TODAY'S BUSINESS AND ENVIRONMENTAL CHALLENGES

Practical orientation runs like a thread through the study program. Accordingly, students complete many practical assignments (e.g., case studies, simulations, and projects commissioned by companies) in their compulsory and elective modules as well as the Master's thesis. The practical relevance of the program is ensured by the involvement of business partners in the form of projects, case studies, and guest lectures.

STRONG INTERNATIONAL ORIENTATION

The program is taught exclusively in English. This makes it attractive to local students who want to work in an international environment and to international students who want to study in Switzerland.

A WIDE SPECTRUM OF CAREER OPTIONS

The unique structure of the MSc in Circular Economy Management gives students the opportunity to choose a learning path that targets a specific profession or career, be it in an environmental, technical, or business-related area. Our graduates can choose from a range of potential employers and occupations. Ideal entry-level positions can be found in the private sector, in public administration, and in nonprofit organizations.

Graduate Competency Profile

Graduates of this program will

- have a solid knowledge of decision-making tools, current and future manufacturing technologies, digital transformation, value chain, and regulatory issues relevant to circular economy;
- have acquired specialized knowledge, skills, and competencies related to the circular economy;
- be able to use their research skills to produce qualified results to solve complex problems;
- be able to apply, analyze, and synthesize theory and practically relevant subject content;
- be able to design and plan creative and innovative circular economy strategies and action plans and contribute to their implementation; and
- be prepared for positions in the field of sustainability and the circular economy and be able to lead demographically and professionally diverse teams.

Nine Benefits of our MSc in Circular Economy Management

Why this program might be right for you

Develop expert knowledge and practical skills to help launch your career

1 INTERDISCIPLINARY PROGRAM

The program's inter- and transdisciplinary approach is unique. The curriculum has been co-designed by a team of experts from across ZHAW, combining the disciplines of engineering and technology, natural and environmental sciences, business studies, and social sciences.

2 THE BEST BLEND BRINGS RESULTS

The module content, supported by practical case studies and action-learning segments, highlights the interconnectedness of the disciplines that contribute to the circular economy. In addition, state-of-the-art knowledge, some of it from the lecturers' own research projects, enrich the curriculum.

3 GEARED TO THE NEEDS OF BUSINESS AND INDUSTRY

Practical orientation is a key feature of the MSc in Circular Economy Management and runs like a thread through the program. With a focus on applied learning, the program is geared towards and directly relevant to business and industry.

4 DIFFERENT CAREER PATHS

By choosing electives designed for specific professional roles and careers, students can follow their preferred learning path.

5 METHODOLOGICAL APPROACH

The scientific foundations of the program are addressed in all participating disciplines. The program enables students to know, apply, critically reflect on, and further develop proven and new approaches, concepts, and instruments for a future-oriented circular economy management.

6 CRITICAL THINKING. PROBLEM-SOLVING

Graduates gain the ability to deal with complex issues and think critically. Their application and reflection competence helps them integrate and adapt concepts and respond constructively to new trends, changes, and uncertain developments.

7 BROAD VARIETY

The variety of topics delivered by instructors with both academic and professional expertise makes this an exciting study program.

8 A TOP MASTER'S DEGREE

Students earn a Master's degree from a leading Swiss university.

9 INTERNATIONAL STUDENT BODY

This program attracts students from all parts of the world due to the unique nature of its subject matter and because it is taught entirely in English.

Program Overview

Your skills profile will expand

With a consecutive Master's program, graduates continue their higher education after obtaining a Bachelor's degree. It provides a comprehensive set of tools and resources in accordance with the guidelines developed in the Bologna Process.

A UNIQUE MASTER'S DEGREE

The MSc in Circular Economy Management is a full-time course of study. It consists of a preliminary week and three semesters of intensive study. The program combines all dimensions of the circular economy – technical, environmental, social, and economic –, and students acquire practical and theoretical knowledge in all disciplines. Students develop a broader understanding and implementation skills for the circular economy through an interdisciplinary, hands-on approach. The program's compulsory modules are grouped into themes and provide a foundation, while elective clusters allow students to prepare for specific career paths and professional roles. Case studies and, ultimately, the Master's thesis provide students with practical credentials. In addition, there is a strong emphasis on developing critical thinking, creativity, communication, teamwork, self-management, and self-reflection.

The program comprises 15 compulsory modules (45 ECTS credits), eight elective modules (of which four are selected, representing 24 ECTS credits), two case study modules (6 ECTS credits), and the Master's thesis (15 ECTS credits).

PRELIMINARY WEEK – BOOT CAMP

In the week before the actual start of the program, students attend the MSc in Circular Economy Management Boot Camp. This provides students with an overview of the disciplines important for the circular economy. The Boot Camp helps close any gaps in students' general knowledge and understanding of the circular economy in business, technology, environment, and sustainability. It ensures a common level of understanding and lays the foundations for more advanced program content. At the same time, students become familiar with ZHAW and meet their fellow students.

COMPULSORY MODULES – THEMATIC AREAS

The curriculum comprises 15 compulsory modules (3 ECTS credits each) divided into five core themes covering the circular economy's different technical, environmental, social, economic, and legal perspectives. These modules are designed to give in-depth theoretical insight and enable practical application, allowing students to explore specific aspects of the circular economy.

- THEME 1: SUSTAINABILITY AND RESOURCES. Students gain an understanding of material and energy flows in natural and human systems, life cycle assessment models, and key sustainability trends and concepts related to the circular economy. Sufficiency, efficiency, and consistency are introduced as essential strategies for implementing sustainable development.
- THEME 2: TECHNOLOGY AND DESIGN. The focus is on bioeconomics, the use of materials, and the general principles of operations management, design, and production. Modules address the impact of current trends and technologies on the circular economy, both in theoretical terms and in practical application.
- THEME 3: BUSINESSES AND ORGANIZATIONS. These modules enable students to understand the shift from traditional linear business models to the more service-oriented circular economy business models. Students explore the concept of the circular economy, the resource efficiency of material and product flow, the impact of international business on the value chain, the ESG (envi-

ronmental, social, and governance) principles, and relevant financial implications.

– THEME 4: POLITICS, LAW, AND TRANSFORMATION. This theme demonstrates how the interplay of legal, political, and governance factors supports and drives the transformation to a circular economy. Students discuss policy challenges and learn about concepts, methods for analyzing complex system innovations, and approaches for managing change. In addition, they are introduced to the EU directives affecting the circular economy and the relevant legal framework in Switzerland.
– THEME 5: BEHAVIOR AND BEHAVIOR CHANGE. Students learn to embrace change, deal with uncertainty, make informed decisions in difficult situations, and reflect on the decision-making process. They acquire skills that will enable them to bring about behavioral change and support the implementation of the circular economy in business and society.

ELECTIVE CLUSTERS

There are four elective areas or clusters, each comprising four modules (6 ECTS credits per module). The clusters allow students to gain additional competencies concerning circularity in product design, regional cycles and resources, business economics, labels and standards, and government and stakeholder management. The four clusters are focused on different roles, careers, and sectors in the circular economy. Students choose one cluster.

– CLUSTER 1: CIRCULARITY IN PRODUCT DESIGN. This cluster focuses on the development of circular products. Students use methodological approaches, measurable assessment criteria, and a systemic approach to identify, evaluate, and discuss solutions in terms of their impact on economic sectors that are relevant to the circular economy.
– CLUSTER 2: REGIONAL CYCLES AND RESOURCES. Students deal with the essential aspects and the special role of regional cycles. They learn that endogenous resources should be used sustainably in regional value creation. In addition, students are introduced to strategies and tools to promote the implementation of the circular economy in a specific region.
– CLUSTER 3: BUSINESS ECONOMICS, LABELS AND STANDARDS. Students gain insight into how a linear economy is transformed into a circular economy and the implications of this process. The complex interplay between (new) technologies, established patterns in supply chains, and expected or desired changes in consumer behavior are highlighted. This cluster also considers the societal and financial pressures organizations face in complying with the new regulatory requirements.
– CLUSTER 4: GOVERNMENT AND STAKEHOLDER MANAGEMENT. This elective cluster allows students to understand the importance of the role of governments and stakeholders (NGOs and consultants) in changing consumer and supplier behavior. As organizations and society are forced to reduce their ecological footprint and adopt the principles of the circular economy, various stakeholder management approaches are evaluated. These include the provision of information, advice and support, financial and other incentives, and potential consequences of noncompliance.

SEMESTER 1

The first semester focuses on the following compulsory modules:

- Theme 1: Sustainability and Resources (modules: Material and Energy Systems; Life Cycle Sustainability Assessment; Sustainability – Sufficiency – Efficiency – Consistency)
- Theme 2: Technology and Design (modules: Manufacture; Bioeconomy/Materials)
- Theme 3: Businesses and Organizations (modules: Supply Chain – Value Chain; Organizations and Environment, Social and Governance)
- Theme 4: Politics, Law, and Transformation (modules: Drivers: Politics and Governance; International and Swiss Law – Circular Economy)
- Theme 5: Behavior and Behavior Change (modules: Critical Thinking; Behavioral Psychology)

SEMESTER 2

The second semester focuses on the following compulsory modules:

- Theme 2: Technology and Design (module: Design)
- Theme 3: Businesses and Organizations (module: Business Models for the Circular Economy)
- Theme 4: Politics, Law, and Transformation (module: Transformation Processes)
- Theme 5: Behavior and Behavior Change (modules: Change Management; Behavioral Psychology)

Students also complete the Case Study 1 module and modules from their chosen cluster:

- Cluster 1: Circularity in Product Design (module: Technology Assessment; Systems and Potential Analysis)
- Cluster 2: Regional Cycles and Resources (modules: Data Analysis and Monitoring; Systems and Potential Analysis)
- Cluster 3: Business Economics, Labels and Standards (modules: Technology Assessment; Communication and Consulting)
- Cluster 4: Government and Stakeholder Management (modules: Communication and Consulting; Data Analysis and Monitoring)

Photo: Frank Brüderli

SEMESTER 3

In the third semester, students complete the Master's thesis, the Case Study 2 module, and the following modules from their respective clusters:

- Cluster 1: Circularity in Product Design (modules: Business Production and Service Transformation; Real Estate, Energy and Waste Management)
- Cluster 2: Regional Cycles and Resources (modules: Real Estate, Energy and Waste Management; Food Systems and Natural Resources)
- Cluster 3: Business Economics, Labels and Standards (modules: Business Production and Service Transformation; Financing – Private and Public Sectors)
- Cluster 4: Government and Stakeholder Management (modules: Financing – Private and Public Sectors; Food Systems and Natural Resources)

FROM SCIENCE TO PRACTICAL APPLICATION

Practical orientation is a key feature of this Master's program. To this end, students are exposed to application examples and practical exercises in all their modules. Besides, the program is closely aligned with current research on the circular economy and related topics. ZHAW, and especially the schools involved in this Master's program, maintain a lively exchange with the national and international research community and participating business partners. As a result, students receive a scientific foundation and insight into current research applications. We consider it vital to give our students the scientific competencies needed to solve the real-life problems of the professional world.

TEACHING AND LEARNING

Our program follows the principles of blended learning: Classroom instruction, self-study, and e-learning are combined in ways that are conducive to learning. To ensure the effective integration of science and its application, our instructors at the Master's level are all senior lecturers with academic qualifications and recent practical experience.

LANGUAGE OF INSTRUCTION

This program is taught entirely in English, and all its materials are also in English.

Program Structure

A truly interdisciplinary Master's program

The program draws on and consolidates the state of knowledge from various disciplines across the university to help students understand and explore the nuances of the circular economy.

PROGRAM STRUCTURE

Prior to Semester Start	**Preliminary Week Boot Camp**			
1st Semester 30 ECTS credits	**Compulsory Modules** 30 ECTS credits			
2nd Semester 30 ECTS credits	**Compulsory Modules** 15 ECTS credits	**Elective Modules (Clusters)** 12 ECTS credits	**Case Study 1** 3 ECTS credits	
3rd Semester 30 ECTS credits	**Master's Thesis** 15 ECTS credits	**Elective Modules (Clusters)** 12 ECTS credits	**Case Study 2** 3 ECTS credits	

MODULE OVERVIEW

1st Semester 30 ECTS credits	**Theme 1: Material and Energy Systems** 3 ECTS credits	**Theme 2: Manufacture** 3 ECTS credits	**Theme 3: Supply Chain – Value Chain** 3 ECTS credits	**Theme 4: Drivers: Politics and Governance** 3 ECTS credits	**Theme 5: Critical Thinking** 3 ECTS credits	
	Theme 1: Life Cycle Sustainability Assessment 3 ECTS credits	**Theme 2: Bioeconomy / Materials** 3 ECTS credits	**Theme 3: Organizations and Environment, Social and Governance** 3 ECTS credits	**Theme 4: International and Swiss Law – Circular Economy** 3 ECTS credits		
	Theme 1: Sustainability – Sufficiency – Efficiency – Consistency 3 ECTS credits					
2nd Semester 30 ECTS credits		**Theme 2: Design** 3 ECTS credits	**Theme 3: Business Models for the Circular Economy** 3 ECTS credits	**Theme 4: Transformation Processes** 3 ECTS credits	**Theme 5: Behavioral Psychology** 3 ECTS credits	
	Technology Assessment 6 ECTS credits	**Data Analysis and Monitoring** 6 ECTS credits	**Communication and Consulting** 6 ECTS credits	**Systems and Potential Analysis** 6 ECTS credits	**Theme 5: Change Management** 3 ECTS credits	**Case Study 1** 3 ECTS credits
3rd Semester 30 ECTS credits	**Business, Production and Service Transformation** 6 ECTS credits	**Financing – Private and Public Sectors** 6 ECTS credits	**Real Estate, Energy and Waste Management** 6 ECTS credits	**Food Systems and Natural Resources** 6 ECTS credits	**Master's Thesis** 15 ECTS credits	**Case Study 2** 3 ECTS credits

- **Theme 1: Sustainability and Resources**
- **Theme 2: Technology and Design**
- **Theme 3: Businesses and Organizations**
- **Theme 4: Politics, Law, and Transformation**
- **Theme 5: Behavior and Behavior Change**

Compulsory Modules Foundations 3 ECTS credits
Elective Clusters 6 ECTS credits
Scientific Methods Research Skills 15 ECTS credits

“The circular economy is a fundamental concept that helps us reduce our consumption of resources. The goal is to no longer consider products as waste at the end of their use, but as new raw products. In order to successfully implement the circular economy, companies depend on team-oriented employees who can think in a holistic way.”

Filloreta Gecaj, KYBURZ Switzerland AG, Assistant to the CEO and Sustainability Coordinator

Modules

Modules and electives designed for your future career

THEME 1: SUSTAINABILITY AND RESOURCES

- MATERIAL AND ENERGY SYSTEMS: This module focuses on understanding material and energy flows in natural and human systems as a conceptual model for the circular economy.
- LIFE CYCLE SUSTAINABILITY ASSESSMENT: Scientifically valid life-cycle-based information is crucial in implementing sustainability strategies. Students learn to transfer insights from applied science to industry and society through life cycle thinking and management.
- SUSTAINABILITY – SUFFICIENCY – EFFICIENCY – CONSISTENCY: In this module, students consider trends and concepts of sustainability, relating them to the circular economy. Sufficiency, efficiency, and consistency are presented as essential strategies for implementing sustainable development.

THEME 2: TECHNOLOGY AND DESIGN

- DESIGN: This module highlights the importance of the design of goods for the circular economy. Students learn that design is a critical factor in creating circular systems, and they explore parameters such as material, performance, and lifetime need.
- MANUFACTURE: This module builds on the general principles of operations management. These involve designing and controlling efficient material and resource flows for generating and manufacturing products and services. Students engage with traditional production companies and start-ups of new circular economy products and services.
- BIOECONOMY / MATERIALS: This module includes forms of developing and processing renewable raw materials, such as paper, pharmaceuticals, and food, as well as the development of new supply chains and business models.

THEME 3: BUSINESSES AND ORGANIZATIONS

- SUPPLY CHAIN – VALUE CHAIN: The concept of circularity and the resource efficiency of the material and product flow (e.g., redesign, recover, remanufacture, reuse, recycle, reduce, and extending the life of products) will impact and disrupt traditional linear supply chains and lead to new supply models for companies.
- BUSINESS MODELS FOR THE CIRCULAR ECONOMY: The successful implementation of the guiding principles of the circular economy to reduce, reuse, or refuse products will require new business models. This module considers the transition from traditional linear business models to more service-oriented ones, including aspects of splitting profit and revenue with suppliers.
- ORGANIZATIONS AND ENVIRONMENT, SOCIAL AND GOVERNANCE: The ESG principles are used to challenge companies and investors and guide them towards principles that are more socially acceptable (including diversity, inclusion, and fair labor relations), environmentally responsible, and regulated (stakeholder management). The ESG principles and guidelines go beyond simple compliance. They address revenue models and investor objectives strongly linked to circular economy aspects.

THEME 4: POLITICS, LAW, AND TRANSFORMATION

- TRANSFORMATION PROCESSES: The implementation of the circular economy is a long-term transformation process in which technologies, materials, processes, value chains, business models, regulations, standards, and behaviors are combined. This module covers the concepts and methods for analyzing this system innovation and approaches for managing transformation.
- DRIVERS – POLITICS AND GOVERNANCE: The transformation towards a circular economy is supported and driven by policy. Governance and a policy mix concept are key. This module analyzes multi-level governance, policy challenges and measures, instruments, and transformation paths from multiple stakeholder perspectives.
- INTERNATIONAL AND SWISS LAW – CIRCULAR ECONOMY: This module focuses on new EU guidelines and resolutions through the Circular Economy Action Plan. It also looks at the relevant Swiss legal framework and at international trade laws and standards, covering consumer protection, extended producer liabilities, procurement, reverse logistics, waste, and various legal aspects.

THEME 5: BEHAVIOR AND BEHAVIOR CHANGE

- CRITICAL THINKING: The transition from a linear and conventional business model to a circular one will inherently involve risk-taking and will be prone to initial failures. To embrace change, a different mindset is needed, where the actors can deal with uncertainties and accept failures while being able to take decisions. Critical thinking will be applied towards the challenges of moving stakeholders from a linear to a circular mindset.
- CHANGE MANAGEMENT: The successful implementation of circularity into business and society will invariably require significant changes in not only mindsets, but also organizational structures, responsibilities, decision-making processes and leadership. This module will build on proven principles of change management in a setting of "new" and "unknown" territories for the transition.
- BEHAVIORAL PSYCHOLOGY: Many business models and nonprofit initiatives promoted in a circular economy only work if private actors adopt new "circular-friendly" behavior. Students will learn how to apply important concepts from behavioral change to individual behaviors that are desirable in a circular economy.

ELECTIVE MODULES (CLUSTERS)

- TECHNOLOGY ASSESSMENT (CLUSTERS 1 AND 3): Students will learn to analyze and assess technologies, products, and materials with regard to their impact on the environment and society and derive conclusions for the circular economy. This provides them with the basis for improving products, defining standards, and categorizing products and services (labelling). The instruments for assessing the circular economy are also taught.
- COMMUNICATION AND CONSULTING (CLUSTERS 3 AND 4): Communication and consulting will play a significant role to inform and engage all stakeholders to address required changes and also any anxieties and behavior, be it from a supplier, a B-2-B or B-2-C perspective. This module will investigate different communication methods, their relevance towards heterogeneous stakeholders, and impact in a circular economy setting.
- DATA ANALYSIS AND MONITORING (CLUSTERS 2 AND 4): Data-driven decision-making is crucial in circular economy issues/applications. Statistical and visualization techniques are required to extract valuable information from data and transfer it to stakeholders. In this module, students are taught a scientific approach to data handling with the help of statistical methods, as well as methods to carry out plausibility checks on the outcomes of data analyses.

- SYSTEMS AND POTENTIAL ANALYSIS (CLUSTERS 1 AND 2): The search for cycle-compatible solutions in nature and the economy is preceded by cycle and systems thinking by the actors. Students learn to model, design, construct, control, and operate complex biological/ecotechnical circular systems. Examples are taken from the fields of ecotechnology and packaging to illustrate the concept of the circular flow.
- BUSINESS, PRODUCTION AND SERVICE TRANSFORMATION (CLUSTERS 1 AND 3): The module will build on the general principles of operations management, i.e., the design and control of efficient material and resource flows for the generation/production of products and services. The module will also address the financial implications for the suppliers, especially regarding the profit and loss statement, the balance sheet, and operational cash flow.
- REAL ESTATE, ENERGY AND WASTE MANAGEMENT (CLUSTERS 1 AND 2): The construction and real estate sectors are responsible for around two-thirds of waste generation and half of resource consumption. The principles of the circular economy are taught in the context of the planning, construction, use, and operation of buildings, infrastructures, and cities, using theoretical contexts as well as projects and examples.
- FINANCING – PRIVATE AND PUBLIC SECTORS (CLUSTERS 3 AND 4): Financing the circular economy will require a combination of private and public schemes. There will be a need for new legislation as well as the reuse and recycling of materials to support the transition to a circular society. From a business perspective, the sharing economy and new pay-per-use business models will require new financing schemes to be developed together with financial services sector.
- FOOD SYSTEMS AND NATURAL RESOURCES (CLUSTERS 2 AND 4): Food systems are most important worldwide for food security, economic development and societies, and are also the largest users of natural resources. In this module, students can define the requirements for a sustainable use of natural resources within food systems that still deliver food security.

CASE STUDIES 1 AND 2

Case studies offer an interdisciplinary view of the circular economy, enabling students to understand the interconnectedness of different topics, disciplines, and tasks. By linking theory and practice, students gain a more comprehensive understanding of the various aspects of the challenges and management of the circular economy. Case studies are completed in teams and focus on the selected cluster topic. Case Study 1 addresses methodological issues in the areas of systems understanding, assessment, data collection and analysis. Case Study 2 presents real business problems where students are given the opportunity to present their findings and conclusions to a partner organization.

MASTER'S THESIS

The Master's thesis is an independent piece of scientific work of practical relevance. While students prepare, analyze, and present data, they employ the knowledge and skills they have acquired and learn more about methodology and applied research.

“The skills needed to manage projects, spot new business opportunities, and apply critical thinking are all very important. Graduates must be both curious and creative, and they also need to have empathy for others. This is a highly networked function that has an impact on a company’s entire organization.”

Andreas Müller, CEO, Georg Fischer AG

Accreditations and Rankings

Your degree is internationally recognized

Zurich University of Applied Sciences (ZHAW) is accredited by the AAQ and the AACSB and features in the prestigious Financial Times rankings, increasing the value of our Master's degrees on the international job market.

The Master of Science in Circular Economy Management has been approved by the Swiss Confederation, which monitors and supports the program. It is also recognized in the EU and many other countries. To ensure continuous quality improvement, ZHAW submits itself to regular scrutiny by Swiss and international quality assurance organizations.

AAQ – SWISS AGENCY OF ACCREDITATION AND QUALITY ASSURANCE / SWISS ACCREDITATION COUNCIL SAC

In December 2020, the SAC granted accreditation to ZHAW as a university of applied sciences. The procedural report of the AAQ, including the analysis and evaluation made by the panel of experts, provides an overview of the quality assurance system and an appraisal of standards within ZHAW. The expert group gave ZHAW's quality assurance system a very good overall rating.

ASSOCIATION TO ADVANCE COLLEGIATE SCHOOLS OF BUSINESS (AACSB)

Since 2015, ZHAW has been proud to be accredited by the AACSB. Only around 6 percent of all business schools worldwide bear this seal of quality from the leading accreditation body in this field.

FINANCIAL TIMES RANKINGS

The ZHAW School of Management and Law is currently the only business school of a Swiss university of applied sciences to feature in the prestigious Financial Times "90 leading European Business Schools" rankings.

AACSB ACCREDITED

SCHWEIZERISCHER AKKREDITIERUNGSRAT
CONSEIL SUISSE D'ACCRÉDITATION
CONSIGLIO SVIZZERO DI ACCREDITAMENTO
SWISS ACCREDITATION COUNCIL
Institutionell akkreditiert nach HFKG für 2020 – 2027

FT EUROPEAN BUSINESS SCHOOLS RANKING

FT MASTERS IN MANAGEMENT RANKING

"The circular economy is a vital concept that is here to stay. Many new start-ups are highly dynamic and ideologically motivated, making them behave differently than conventional corporations and SMEs."

Simon Zysset, Responsible for Education Partnerships, WWF Switzerland

Campus Plus

What else you can expect

In addition to your studies, Zurich University of Applied Sciences (ZHAW) and the cities of Zurich, Winterthur, and Wädenswil have plenty to offer.

ACCOMMODATION

The Student Accommodation Association (WOKO) is responsible for negotiating affordable student housing in Winterthur and Zurich. The Youth Residential Network (JUWO) also offers affordable accommodation. Further offers are available at students.ch, wgzimmer.ch, and on regular, online real estate platforms.

››› www.woko.ch
››› www.students.ch
››› www.juwo.ch
››› www.wgzimmer.ch

ALIAS

All ZHAW students are members of Alias. This student association represents them in dealings with the university and publishes the student magazine “Brainstorm.” By organizing student parties and events, Alias contributes to a vibrant campus life. Alias is also a point of contact for a range of student concerns. ››› www.alias-zhaw.ch

ALUMNI SERVICES

Alumni Services acts as the link between current and former ZHAW students and is thus the first point of contact for networking topics. We advise, support, coordinate, and connect people. In keeping with our motto, “Beyond Student Life,” we will continue to update you about the university, continuing education opportunities, and events even after you leave. ››› alumni.sml.zhaw.ch

See also: ››› www.alumni-zhaw.ch

CAMPUS GRÜENTAL – WÄDENSWIL

The ZHAW School of Life Sciences and Facility Management Grüental Campus is situated in beautiful surroundings overlooking the Lake of Zurich. The city of Wädenswil has excellent facilities and a lively small-town feel. While the campus is undergoing renovation, most classes for the MSc in Circular Economy Management will take place in Winterthur and Zurich.

CAMPUS WINTERTHUR

The School of Engineering and School of Management and Law buildings are situated in the center of the city of Winterthur. The university provides cutting-edge laboratories and technology facilities. The train station is within easy walking distance. The university Library at "Sulzer Areal," a former industrial site, has workstations for over 650 students and state-of-the-art infrastructure. A variety of different food outlets across the campus provide quick meals and a place to relax.

CAREER SERVICES

SML Career Services helps you make a successful transition from student to professional and supports your personal career development. Our services include:

- Events and workshops (Long Night of Careers, Rotation Dinner, etc.)
- Career counseling (CV and LinkedIn checks, career coaching, video interview training, online assessment training, etc.)
- Website (job exchange, Tips and Tools, CV database, etc.)

»» career.sml.zhaw.ch/en

See also: »» www.zhaw.ch/careerservices

SPORTS AND FITNESS

From A for Aikido to Z for Zumba, ASVZ (Academic Sports Association Zurich) offers over 120 different sports in Winterthur and Zurich as an active way to achieve a healthy work-life balance. Benefit from an extensive infrastructure with modern sports equipment as well as knowledgeable, professional supervision. ASVZ membership is included in your semester fee. »» www.asvz.ch

Admission

Early registration is recommended

Applications are addressed on a first-come, first-served basis and must be complete to be considered.

TARGET AUDIENCE

This degree program is aimed at Bachelor's graduates keen to develop their interdisciplinary knowledge of sustainability and the circular economy within their chosen professional field. The focus is on graduates of natural sciences, engineering, and business studies programs. Within ZHAW, the target group includes those who showed a particular interest in and an affinity for the subject matter during their Bachelor's studies. The practical applicability of this program lends itself to individuals wishing to obtain expert knowledge and practical skills to help launch their careers.

ADMISSION

Admission to the program is subject to a procedure based on the following requirements:

- Bachelor's degree (at least 180 ECTS credits) in business studies, economics, engineering, or natural science.
- Swiss degrees: The final grade must be at least 4.5 (of 6).
- English level B2 – Good or equivalent pass (e.g., Cambridge at least 173 points).
- A passing grade in the entrance exam for this degree program.

ENTRANCE EXAM

As part of the registration procedure, applicants must sit a written entrance exam in which they must demonstrate a basic understanding of all three disciplines of the degree program: life sciences, technology, and business. For each, they receive a separate grade. Entrance exams are administered online and take approximately 45 minutes.

REGISTRATION

Registration opens in mid-October for programs starting the following September. For your online registration, you will need:

- Proof of qualifications: copies of diploma, diploma supplement, grades, transcript of records (ECTS credits)
- Evidence of your level of English (see "Admission")
- Resume
- Digital passport photo
- Swiss vocational or academic baccalaureate diploma or foreign university entrance qualification

Application deadline: end of May. Candidates who have not yet graduated from their Bachelor's program by then may submit the respective documents later. Students with visa requirements are recommended to register well in advance since the visa application process might take some time. We will happily answer your questions at one of our information events or a free consultation.

>>> www.zhaw.ch/sml/registration-master

ADDITIONAL INFORMATION

If you have any questions about the registration procedure, please contact us:

ZHAW School of Management and Law
Student Services
St.-Georgen-Platz 2
P.O. Box
8401 Winterthur
Switzerland
Phone +41 58 934 68 68
studentservices.sml@zhaw.ch

Ready for the Future

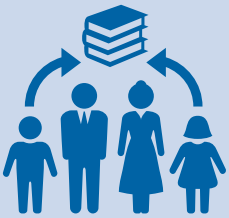
Becoming highly employable

With your newly acquired expertise, you will benefit from better career opportunities. What's more, you will be able to continually expand your network, enjoy professional redevelopment, and learn to appreciate the many benefits of lifelong learning.

An expanding network

Better career opportunities

Professional redevelopment



Lifelong learning

Better employability

Specialist expertise

Zurich University
of Applied Sciences

**School of
Management and Law**

St.-Georgen-Platz 2
P.O. Box
8401 Winterthur
Switzerland

www.zhaw.ch/sml

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School of Engineering | School of Life Sciences & Facility Management | School of Management and Law

MSc in Circular Economy Management

Master of Sience (MSc)

INTERESTED? Learn more!
www.zhaw.ch/sml/master-cem

The program aims to equip students with the necessary professional knowledge and skills to deal with the complex issues of the circular economy. Unique to this Master's program is the inter- and transdisciplinary approach throughout. It combines all dimensions of the circular economy – technical, environmental, social, and economic – providing practical and theoretical knowledge in all disciplines. Emphasis is placed on the development of critical thinking, creativity, communication, teamwork, self-management, and self-reflection.

"The circular economy is a vital concept that is here to stay. Many new start-ups are highly dynamic and ideologically motivated, making them behave differently than conventional corporations and SMEs."

Simon Zysset, Responsible for Education Partnerships, WWF Switzerland

Key Data

Title: Master of Science (MSc) ZFH in Circular Economy Management

Start: Mid-September

Workload: 90 ECTS credits

Duration: 3 semesters, full-time

Teaching location: Winterthur and Zurich

Semester fees: CHF 720.– plus CHF 500 for students legally domiciled outside Switzerland and CHF 100 enrollment fee

Language of instruction: English

Instruction: Monday to Friday full-time

Graduate Competency Profile

Graduates of this program will
- have a solid knowledge of decision-making tools, current and future manufacturing technologies, digital transformation, value chain, and regulatory issues relevant to circular economy;
- be able to use their research skills to produce qualified results to solve complex problems;
- be able to apply, analyze, and synthesize theory and practically relevant subject content;
- be able to design and plan creative and innovative circular economy strategies and action plans and contribute to their implementation; and
- be prepared for positions in the field of sustainability and the circular economy and be able to lead demographically and professionally diverse teams.

MODULE OVERVIEW

1st Semester 30 ECTS credits	**Theme 1: Material and Energy Systems** 3 ECTS credits	**Theme 2: Manufacture** 3 ECTS credits	**Theme 3: Supply Chain – Value Chain** 3 ECTS credits	**Theme 4: Drivers: Politics and Governance** 3 ECTS credits	**Theme 5: Critical Thinking** 3 ECTS credits	
	Theme 1: Life Cycle Sustainability Assessment 3 ECTS credits	**Theme 2: Bioeconomy / Materials** 3 ECTS credits	**Theme 3: Organizations and Environment, Social and Governance** 3 ECTS credits	**Theme 4: International and Swiss Law – Circular Economy** 3 ECTS credits		
	Theme 1: Sustainability – Sufficiency – Efficiency – Consistency 3 ECTS credits					
2nd Semester 30 ECTS credits		**Theme 2: Design** 3 ECTS credits	**Theme 3: Business Models forthe Circular Economy** 3 ECTS credits	**Theme 4: Transformation Processes** 3 ECTS credits	**Theme 5: Behavioral Psychology** 3 ECTS credits	
	Technology Assessment 6 ECTS credits	**Data Analysis and Monitoring** 6 ECTS credits	**Communication and Consulting** 6 ECTS credits	**Systems and Potential Analysis** 6 ECTS credits	**Theme 5: Change Management** 3 ECTS credits	**Case Study 1** 3 ECTS credits
3rd Semester 30 ECTS credits	**Business, Production, and Service Transformation** 6 ECTS credits	**Financing – Private and Public Sectors** 6 ECTS credits	**Real Estate, Energy, and Waste Management** 6 ECTS credits	**Food Systems and Natural Resources** 6 ECTS credits	**Master's Thesis** 15 ECTS credits	**Case Study 2** 3 ECTS credits

- Theme 1: Sustainability and Resources
- Theme 2: Technology and Design
- Theme 3: Businesses and Organizations
- Theme 4: Politics, Law, and Transformation
- Theme 5: Behavior and Behavior Change

Compulsory Modules Foundations 3 ECTS credits
Elective Clusters 6 ECTS credits
Scientific Methods Research Skills 15 ECTS credits