

# MAS ETH MTEC

Drive transformation.



# Welcome

Dear readers,

Today's business landscape is evolving at an accelerating pace and confronts individuals, teams and organisations with major challenges in their efforts to stay competitive. What is cutting-edge today will be common practice tomorrow.

In the face of this rapid transformation, many questions arise. How do you go about creating a data-driven business model? What risks come with using or staying clear of new technologies? What tools are available for mastering the challenges that lie ahead? ETH Zurich provides an ideal setting for finding answers to these and other crucial questions.

At ETH Zurich, we believe education is the most effective means for creating impact and disseminating knowledge in academia, business, public organisations and society at large. Our Master of Advanced Studies in Management, Technology, and Economics (MAS ETH MTEC) is a part-time continuing education programme designed for engineers and natural scientists. Building on your academic background the programme enables you to refocus your career on leadership by equipping you with a comprehensive skillset in management and economics and furthering your personal development.

The MAS ETH MTEC programme is hosted at the Department of Management, Technology, and Economics (D-MTEC). At D-MTEC we bring together engineering and the natural sciences with the social sciences. We empower students to become competent and critical leaders, mindful of the impact of their decisions both on organisations and on society as a whole.

We are continuously updating and improving our programme to prepare students for the growing and diversifying challenges tomorrow's business leaders will face. We regularly incorporate new modules based on the latest developments in the business world, recent findings from ETH research, and feedback from our alumni. We recently introduced a mentoring programme that draws on the professional experience of industry practitioners in one-on-one coaching for our students. Integrative student-alumni learning formats such as our Mentoring and MAS+ programmes facilitate knowledge transfer from our alumni in industry to D-MTEC. In return, our alumni profit from staying up to date with D-MTEC's latest research.

On the following pages, we invite you to explore what the MAS ETH MTEC programme has to offer. Take the first step towards becoming a leader of tomorrow.



**Dr Bastian Bergmann**  
Programme Coordinator




**Professor Bart Clarysse**  
Academic Programme Director

# Master of Advanced Studies in Management, Technology, and Economics

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“At D-MTEC, we have developed a long-term perspective on our educational programmes. We not only strive to provide an outstanding education for our students; we also view their time at D-MTEC as the starting point of what we call a lifelong partnership, a collaboration in which we continue to support their career development through further education opportunities in the fields of management and economics.”

Florian von Wangenheim  
Professor of Technology Marketing

An aerial, high-angle photograph of a courtyard at ETH Zurich. The courtyard is paved and contains a white van parked in a designated space. The surrounding buildings are multi-story, classical-style structures with stone facades, arched windows, and balconies. The image is positioned on the left side of the page, partially overlapping the text area.

ETH ZURICH

## Where the future begins.

Freedom and individual responsibility, entrepreneurial spirit and open-mindedness: ETH Zurich stands on the bedrock of true Swiss values. Our university of science and technology dates back to the year 1855, when the founders of modern-day Switzerland established it as a centre of innovation and knowledge. At ETH Zurich, students build an ideal foundation for independent thinking and further their professional development, while researchers thrive in a climate that allows them to push the boundaries of the known. Situated in the heart of Europe, yet forging connections all over the world, ETH Zurich is deeply involved in pioneering effective solutions to the global challenges of today and tomorrow.

The Department of Management, Technology, and Economics (D-MTEC) is one of 16 departments at ETH Zurich. Through its research, teaching and technology transfer, it brings together technological and scientific research on the one hand, and the social sciences, business, policy-making and society on the other. At D-MTEC, our mission is to understand and help shape the interactions between technology, organisations and society, particularly with respect to their impact on the sustainable use of natural and human resources. We are active in basic and applied research in management, economics, systems dynamics and risk, and are committed to addressing ongoing and future challenges. Developing knowledge and making it matter in society is of the utmost importance to us: This is why we foster a strong relationship with partners in the private and public sectors, both through our research projects and in our teaching. Ultimately, we view our education programmes as the most effective tools for realising the potential of our research within our society – because we know we can count on our students to lead the way forward.

While the MAS ETH MTEC programme lies at the heart of our endeavour to shape emerging leaders, we are also committed to a lifelong partnership with our students. Graduating with an MAS ETH MTEC degree is thus also a starting point from which you can profit from a wide variety of further education opportunities that will keep you up to date and support your career development. ■

THE MAS ETH MTEC PROGRAMME

**Realise your potential as a leader.**





“New technologies enable us to address societal problems and business needs, but they also create challenges for executives and society at large. Business leaders have to learn how to reconcile the manifold and contradictory goals of different interest groups both within and outside of their organisations. The MAS MTEC programme is here to help aspiring entrepreneurs and managers achieve their full potential as transformational leaders.”

Stefano Brusoni

Vice Rector for Continuing Education and Professor of Technology and Innovation Management

The MAS ETH MTEC programme is one of the longest-standing and most successful management education programmes in Switzerland. Since 1980, it has been building on students' technical and scientific backgrounds and equipping them with a solid skillset that allows them to focus their future career development on management and leadership roles. The MAS ETH MTEC programme also attracts architects, intellectual property lawyers and others with a strong interest in technology issues.

The programme will endow you with the tools and skills required to lead teams and organisations engaged in processes of transforming and redefining their business models. It is aimed at professionals with at least two years of work experience.

Challenges like the digital transformation of entire industry sectors, globalisation and the future of work, and the transition to a low-carbon economy call for professionals who bring both technical expertise and leadership skills to the table. Global connectedness comes with global risks, and with these, new challenges emerge for businesses. This is why we have increased the palette of risk-management-related modules offered in the programme.

The curriculum comprises four different categories of study – Core Courses, Elective Courses, Personal Development (Skill-based Training), and a Master's thesis – for a total of 60 ECTS credit points (CP). The first semester focuses on Core Courses that provide foundational building blocks in management and economics. In the following semesters, the curriculum shifts to interactive block courses that focus on more specialised topics and on individual development. Together with your peers, you will now tackle real-life business cases featuring lecturers from our faculty and from industry. The application-oriented Master's thesis is written in a business context of your choice, usually in the fourth semester. ■

**91 %**

of MAS ETH MTEC alumni say that the programme led to an increase in their professional responsibility.

Source: D-MTEC Alumni Survey 2020, n=235.

**96 %**

of MAS ETH MTEC alumni would recommend the programme to their peers.

Source: D-MTEC Alumni Survey 2020, n=249.

## CORE COURSES

# Build a solid foundation for your managerial expertise.

Core Courses allow you to acquire foundational knowledge in management and economics. They are divided into six competence areas and can be chosen according to your own interests, with the requirement that you earn a minimum of three credit points in at least five of these six areas.

### General Management and Human Resource Management

Planning, overseeing and leading organisations requires a fundamental skillset. By analysing organisations as open, dynamic, and interconnected systems, we impart the knowledge and tools that will allow you to profoundly understand the critical performance factors of these systems, and to act on that understanding. Given the rapidly evolving business landscape, our courses specifically consider the interaction between technology and organisations, as well as the impact of technology on organisational change and contemporary leadership.

### Strategy, Markets, and Technology

Technology shapes the opportunities available for starting or transforming a business. Assessing these opportunities, forming a team, raising funding, protecting ideas, testing the market, and then evaluating all of these steps are crucial to successful entrepreneurial endeavours. Our courses in strategic management and technology marketing analyse how science develops into technology, and how technology becomes suitable for the market. Assessment of the potential for – and limitations on – sustainable development in companies rounds out this competence area.

### Information and Operations Management

Today's information technologies are enabling new business models and disrupting existing markets. Mastering the challenges of business transformation and the alignment of corporate development with IT lies at the heart of this competence area. Our courses in this field provide a well-founded theoretical background and offer a holistic perspective on business transformation. They employ an integrated approach to dealing with strategy, processes and information systems, and apply this model to various case studies.



“It is within everyone’s reach to bring innovative ideas successfully to market. However, there are certain recipes to follow, and pitfalls to avoid, and this is where the MAS MTEC programme comes into play. It offers a deeper understanding of the world and of the economic trends around us, and equips its students to reflect on how the future might be shaped. ETH Zurich provides the perfect environment for experiencing the convergence of the latest scientific innovations with modern entrepreneurial thinking.”

Edward Gaere  
Senior Data Analytics Manager, Sunrise Communications AG

### Quantitative & Qualitative Methods for Solving Complex Problems

Data is becoming a key resource in today’s business environment, allowing for better-informed management decisions. However, evidence-based decision-making requires a fundamental understanding of statistical methods. Being able to plan, implement and evaluate analytics draws the value out of data and contributes to firms’ efficiency and competitive advantage. In this competence area you will also learn to use the problem-solving cycle and other methods to structure complex problems, efficiently allocate resources and find systemic solutions.

### Micro and Macroeconomics

Earth’s resources are finite and social welfare is far from evenly distributed. Our economics courses address how our society uses scarce resources to produce goods and services to further social welfare. At the same time, they consider environmental and cultural factors. Economics employs empirical and theoretical models to analyse the behaviour of consumers, firms and policymakers in different forms of the market. The courses in this competence area will teach you how to think like an economist and critically reflect on the economic problems faced by our society.

### Financial Management

Financial markets are a critical driver of our economy. A solid understanding of their mechanisms and intricacies and their interface with firms is crucial to leading organisations on a successful path. Our courses cover this field by providing fundamental insights from two different angles: Some lectures will equip you with a comprehensive toolkit for managing finances within and across organisations, while others will elucidate the dynamics of financial markets and examine the diverse spectrum of products on offer, and the opportunities they present. ■



## ELECTIVES

# Sharpen your profile through individual specialisation.

Elective courses build on the foundational knowledge gained in core courses to deepen your understanding of issues that cut across disciplines and technologies. Together with your peers, you will tackle real-life challenges in specialised block courses and case studies. In some of these courses we collaborate with companies, thereby directly integrating practitioners' expertise into the MAS ETH MTEC curriculum.

What is the best strategy for identifying organisational challenges? How can you design an appropriate plan for tackling them, and how should you manage the corresponding process of change? Electives dedicated to innovation, change management and leadership answer these questions based on case studies, and convey the skills necessary to apply the lessons learned.

The financial market is indispensable for corporate growth. Our elective courses on finance tackle questions like how firms are rated for debt financing, how they can utilise financial products for refinancing, and how private equity funds reflect their value. You will gain an understanding of the language and perspective of financial markets by working on illustrative case studies.

Humans are the pivotal element in the economy. Consumers are responsible for a significant portion of overall economic demand, and firms rely to a large extent on human capital. Our programme goes beyond classical economic theory and integrates behavioural sciences, psychology and data science to improve your understanding of organisational decision-making and help you better understand your customers.

Sound risk management is key to running global organisations. It requires a firm grasp of risk modelling and an understanding of concepts such as uncertainty, vulnerability, resilience, and decision-making under conditions of uncertainty. Our risk-related courses feature a diverse spectrum of case studies, with an emphasis on data-driven approaches. They cover issues like organisational and cyber risk, climate and natural disaster risk, and energy and financial market risk. ■

Choose from

# 30+

elective courses featuring a broad spectrum of both content and teaching formats.

“As I took on more and more non-technical responsibilities in my job, I realised that my purely technical education had not equipped me to manage employees and navigate complex business environments. The MAS programme provided me with the tools and frameworks necessary for analysing and structuring complex business-related issues, and allowed me to meet many smart, inspiring and talented people.”

Luba Rogoleva  
Enterprise Architect Channel Applications, Credit Suisse

## Going Global

Broaden your perspective through a direct experience of international economic, social, and cultural factors on our course abroad.

## Digitising Business

IT and Cybersecurity are transforming how business is done. We will show you how to utilise the opportunities and conquer the disruptions of digitisation.

## Practicing Strategy

Smart tools stand at the ready in the face of even the most complex problems, allowing you to systematically structure, analyse and solve them.

## Daring Entrepreneurship

Find your idea. Form a team. Make a plan. Identify the market. Get the funding. Found your business. Evaluate. And do it right.

## Empowering Leadership

Successful leadership has many faces. We will guide you on your way to determining and refining your own leadership style.

## Creating Sustainability

Sustainability is a value in itself. D-MTEC prepares you to become a champion of sustainable business practices.

## SKILL-BASED TRAINING

# Develop your personal skills and become an effective leader.

Leadership requires character. In their pivotal roles, leaders interact with their peers, their superiors, and with other stakeholders. How well they do this is crucial to the outcome of their endeavours. The potential that abides in knowledge and the tools for utilising it can only be fully realised through dynamic, nuanced,

Personal development is a key concern in human resource management. Hence, our Skill-based Training courses address topics such as recruiting, performance management, and compensation. Using a variety of interactive methods such as conflict simulations, these courses will provide you with a practice-oriented and theoretically grounded skillset for dealing with HRM-related topics.

We believe that the foundations of effective professional character are skills which you can master through training.

and responsive advocacy. We believe that the foundations of effective professional character are skills such as communication and self-management, both of which you can master through training. We have therefore established a course format we call Skill-based Training to prepare you for taking on managerial responsibility.

Organisations rely on effective and mindful representation – be it in relations with other organisations, with regulators or with the public. Since negotiations can be of existential importance to organisations, those who undertake them bear a major responsibility. Our Skill-based Training courses dedicated to negotiation and advocacy impart the crucial skills you will need to take on this responsibility through in-depth case studies, discussions and role-playing.

Taking on a leading role in an organisation will open up a new page in your own personal story. As you are the one writing the script, you will need to head into

How can you improve your problem-solving competence and enhance your creativity to benefit both your organisation and your career? Our Skill-based Training courses nurture your innovation and creativity as you reflect on your personal roles in professional processes within and outside of organisations.

## How do your mindset, attitude and history influence your decisions?

Imparting personal skills requires an approach beyond conventional lecture courses and seminars. Skill-based Training courses place a strong emphasis on interaction and peer-to-peer learning. Much like professional coaches, personal developers will guide you as you develop insights in small group settings. Reflecting on and practicing your personal and cognitive abilities with a focus on your creativity and problem-solving skills will increase your awareness of your strengths and guide you towards opportunities for further development.

this new chapter with a well-founded narrative based on a fierce practice of self-awareness. What is your mindset, your attitude, your history? How do these factors influence your decisions? And where do you want to go? The insights you gain in our Skill-based Training on self-marketing will not only be of use in job interviews, but will also help you develop an authentic and powerful presence. ■

## THE MAS MENTORING PROGRAMME

# Build upon the experience of industry professionals.

To ensure that the MAS ETH MTEC programme has an optimal impact on your career, it needs to be tailored to your individual situation. We have established the MTEC Mentoring Programme MAS (MMP MAS) to help you put what you learn into a relevant context. Towards the end of your studies, through the MMP MAS, you will interact directly with a senior industry leader. This mentor will support you one-on-one in your personal and professional development, and will help you make most of your degree through career and network building.

All mentors participate in the programme on a voluntary basis and can draw on a great depth of profes-

sional experience and extensive industry networks. They come from fields as varied as IT start-ups, national infrastructure companies and global manufacturing firms. The MMP MAS is co-managed by MAS student representatives (MAS Board) to ensure a strong link between the MMP MAS design and students' wishes.

The mentoring process is backed up by a framework that encompasses goal setting, training in practice, networking formats, and continuous assessment. It runs for one semester, with a programme-wide kick-off meeting and monthly one-on-one personal coaching sessions. ■



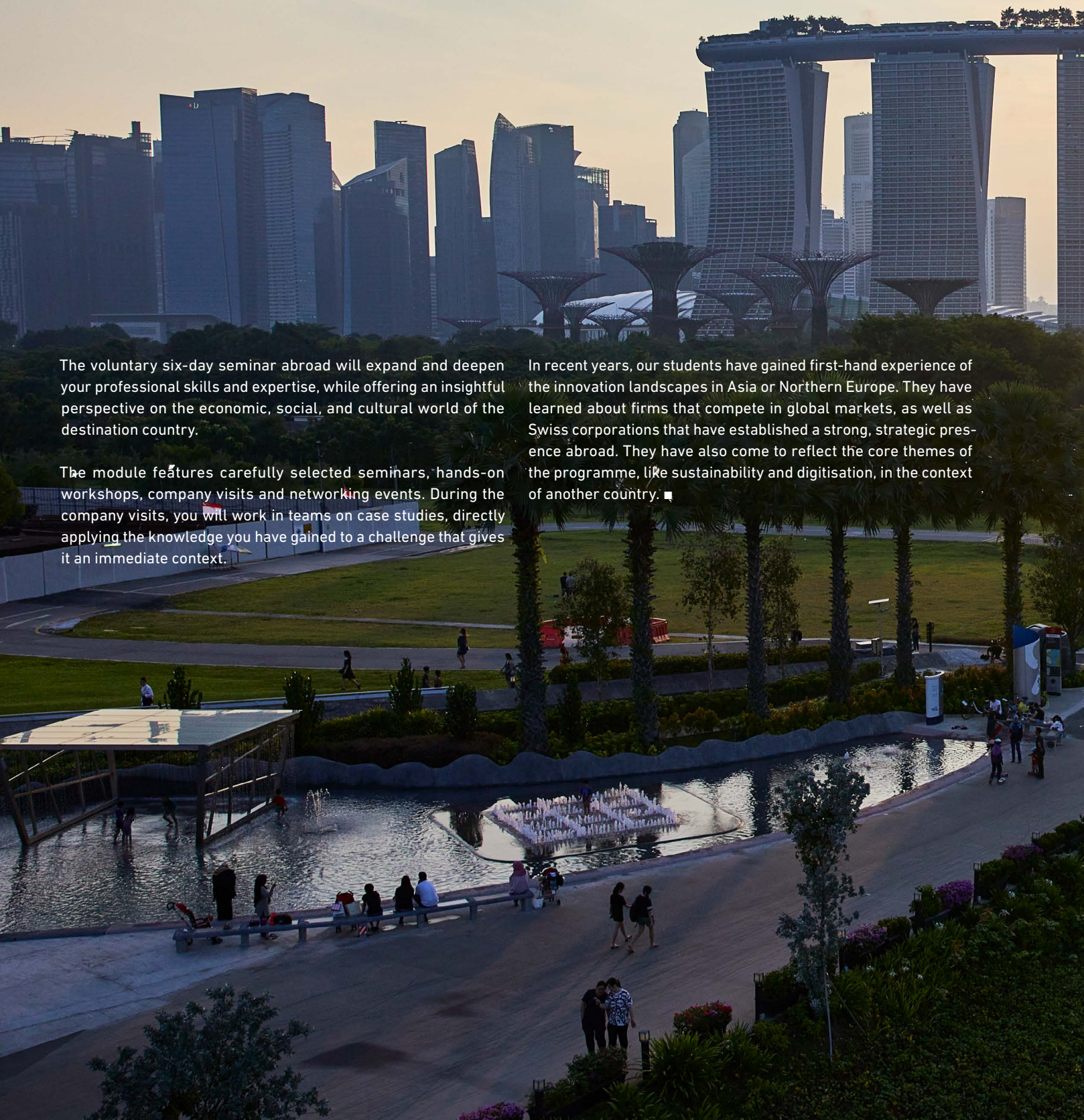
## COURSE ABROAD

# Expand your profile in an international context.

The voluntary six-day seminar abroad will expand and deepen your professional skills and expertise, while offering an insightful perspective on the economic, social, and cultural world of the destination country.

The module features carefully selected seminars, hands-on workshops, company visits and networking events. During the company visits, you will work in teams on case studies, directly applying the knowledge you have gained to a challenge that gives it an immediate context.

In recent years, our students have gained first-hand experience of the innovation landscapes in Asia or Northern Europe. They have learned about firms that compete in global markets, as well as Swiss corporations that have established a strong, strategic presence abroad. They have also come to reflect the core themes of the programme, like sustainability and digitisation, in the context of another country. ■





“During the study trip, I made many contacts in organisations that operate between China and Switzerland. This has helped me better understand the mutually beneficial relationship between the two countries. What inspired me most were the depth and breadth of the experiences the trip offered. For me it was definitely one of the highlights of the MAS MTEC programme.”

Dan Liu  
Senior Analog IC Design Engineer, Power Integrations



## LIFELONG PARTNERSHIP

# Become part of the D-MTEC network.

At D-MTEC we believe that effective professionals need to continuously adapt to a changing world. This is why we aim to establish a lifelong partnership with our alumni. Even after you graduate from the MAS MTEC programme, we continue to support your professional development. Through talks, workshops and other events, you can stay up to date, broaden your horizons and expand your network. You can join our Mentoring Programme as a mentor to connect with our students and keep your finger on the pulse of the times. In our alumni work we collaborate closely with the ETH Alumni Association, which has more than 34,000 members worldwide, while at the same time fostering a vibrant community among graduates from all study programmes at D-MTEC.

MAS+ Sessions are the latest addition to our portfolio of platforms connecting students and alumni at D-MTEC. These events tackle up-and-coming topics such as Distributed Ledger Technologies, Artificial Intelligence, Future Money and Cyber Risk and integrate perspectives from business experts, from ETH researchers and from our own students and alumni. They range from workshops that assess and re-evaluate our programme content, to talks by industry professionals, to field trips and career building sessions and networking events. ■



“Linking my personal experience and my passions, the MAS MTEC programme has helped me succeed in a competitive and fast-changing job market. For me, the MAS MTEC programme has been like a constant strong wind that helps a sailboat cross a rough ocean by propelling it towards its destination.”

Matteo Frigerio  
Senior Solution Consultant, Hilti North America



## THE MAS MTEC COHORTS FROM 2013 TO 2022

# Thrive in a diverse student community.



678 students since 2012



33 average age

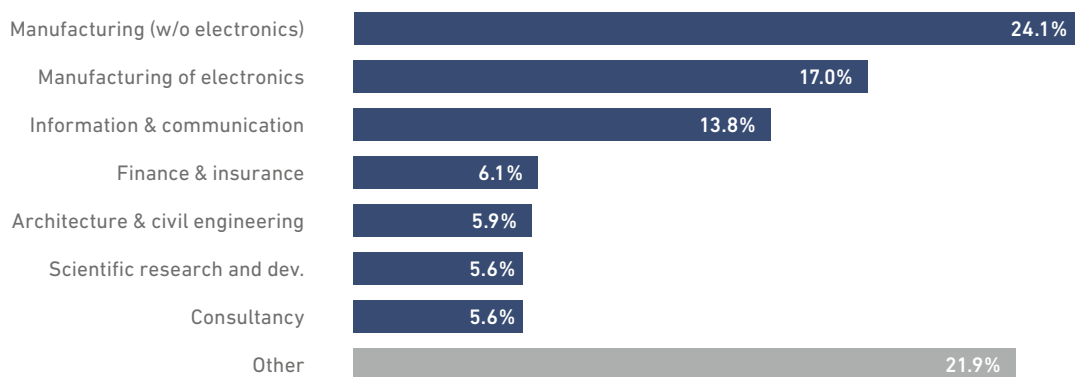


29% women

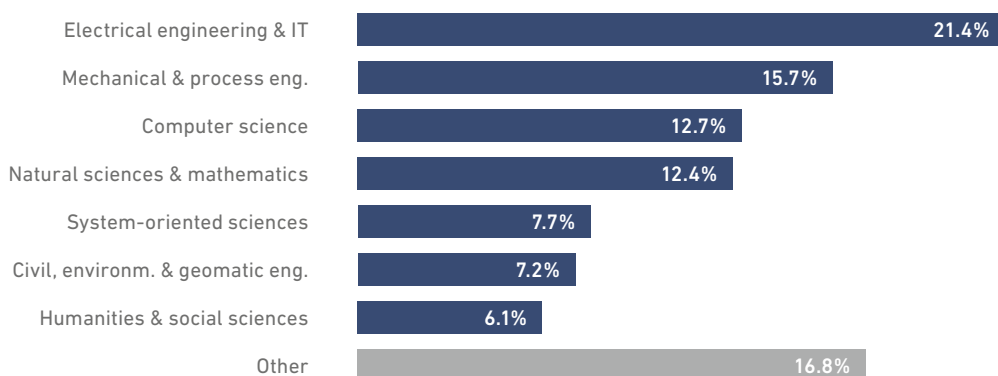


7 years average work experience

## Students' professional background when starting their MAS MTEC studies:



## Students' study areas prior to taking the MAS MTEC programme:



## APPLICATION AND ADMISSIONS

# Join the MAS MTEC Programme.

If you hold a Master's degree in a scientific or technical discipline from a university recognised by ETH Zurich, and have at least two years of professional experience, we encourage you to apply to the MAS MTEC programme.

Qualified candidates with a comparable education can also be admitted sur dossier, after submitting documentation of their professional experience and their qualifications in the required areas.

During the selection process, we will carefully consider your qualifications and professional experience. On average, we admit 65 students per class.

You may submit your application for studies beginning in between 10 January and 30 April online.

You can find a link to the online application platform and comprehensive information regarding our admission requirements and the application process on our website at [www.mas-mtec.ethz.ch/application](http://www.mas-mtec.ethz.ch/application). ■

**Application period**  
10 January to 30 April

**How to apply**  
[www.mas-mtec.ethz.ch/apply](http://www.mas-mtec.ethz.ch/apply)

**Programme start**  
September

**Tuition fee**  
CHF 23,700

## Find out more

We would be pleased to answer any questions you may have, and are available for a personal consultation.

You are also invited to explore our programme at our Information Events, where you can hear about it first-hand from students, alumni, lecturers, and the programme management.

[www.mas-mtec.ethz.ch/info](http://www.mas-mtec.ethz.ch/info)

## FURTHER INFORMATION

For more details on the programme, we invite you to consult the documents listed below. You will find them at the back of the brochure if you are reading a print version.

If you are reading this electronically, you can click on the document names to view them online.



### MAS MTEC Impact

Data on how the MAS MTEC degree has impacted our students' professional development, and alumni profiles.



### Study Plan

The MAS MTEC Study Plan provides an overview of the curriculum. It lists the course categories and their corresponding lecture courses, as well as all the requirements that students need to fulfil.



### Schedule

The MAS MTEC Schedule lists important dates and deadlines over the course of the programme.



### How to design your MAS MTEC course of study

The MAS MTEC programme offers some flexibility in terms of workload distribution. This information sheet contains two examples that illustrate different course plans and will help you better organise your courses.



### D-MTEC Research Portfolio

D-MTEC faculty members are distinguished economists, management scholars, policy experts, entrepreneurs and executives in private and public organisations. The research portfolio provides an overview of their research.



### External Lecturers (online only: [www.mas-mtec.ethz.ch/external-lecturers](http://www.mas-mtec.ethz.ch/external-lecturers))

External lecturers in the MAS MTEC programme include leading experts from industry as well as from other universities and business schools. On our website you can find details about their backgrounds and the courses they teach.



### Information Events

Learn more about the programme at our Information Events, which take place every year between September and April. If you are reading this document digitally, you will be directed to a page on which you can also register for the events.

#### Programme Management

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#### Admissions

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