



D-MTEC Chair Guide

Information on research, teaching and Master's
thesis supervision of D-MTEC research groups

Welcome

The Chair Guide provides an overview of the research and teaching activities of the research groups at the Department of Management, Technology, and Economics (D-MTEC) at ETH Zurich. It is designed to help students at D-MTEC find a group to write their Master's thesis with.

The listed courses are a selection of the course portfolio which is listed in full in the ETH Course Catalogue. Note that courses beginning with 364- target doctoral students, and those beginning with 365- are exclusively offered to MAS MTEC students.* The courses are either offered in Autumn Semester (HS) or in Spring Semester (FS). The labels for core courses (C) and elective courses (E) apply to the MSc MTEC curriculum. This classification is slightly different for MAS MTEC students, who are advised to consult the ETH Course Catalogue for that information.

www.course-catalogue.ethz.ch

In addition, the prerequisites for writing a Master's thesis at each chair are listed. Further information about research, teaching and outreach activities of the chairs can be found on their respective websites provided with the chair profiles herein, or all in one place:

www.mtec.ethz.ch/groups

*For some courses the identification number is not listed. This is due because these are new courses and their number has not been defined at the time of publishing the Chair Guide.

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Chair of Energy and Climate Economics

Professor Lint Barrage

Vision – The chair at a glance

Energy policy plays a critical role in pressing challenges ranging from climate change to macroeconomic stability. Our mission is to create knowledge that may aid society in better understanding and managing these interconnected risks.

Research

Integrated Economic-Environmental-Energy Modelling: We develop quantitative models designed to analyse interactions between the macroeconomy, environmental systems (such as the climate), and the energy sector.

Climate Change Impacts: We use both data and structural models to study the effects of climatic risks on outcomes such as economic growth, public finances, housing markets, financial markets, and firms/households.

Innovation and Technological Change: We use both data and structural models to study the effects of market conditions and public policies on technological change, particularly in the energy sector.

Policy Optimisation (Fiscal, Energy, Climate): We develop both theoretical and computational models to characterise policy trade-offs in mitigating climate change, transitioning energy systems, and balancing government budgets.

Behavioural Factors: How do factors such as individual beliefs affect household and market responses to climatic risks? What determines the political acceptability of energy policies? We investigate these questions with methods ranging from household surveys to econometrics.



Teaching*

FS **363-0561-00** [Climate Economics and Finance \(C\)](#)

We expect to add a doctoral course in environmental macroeconomics and an MSc/MAS level course in Advanced Energy Economics and Policy to our course offerings in the near future, with scheduling TBD, along with further core economics coursework.

Writing a Master's thesis at our chair

We supervise MSc/MAS theses in our area of research. Thesis applicants should provide a short motivation statement, a CV, and a transcript of records. We also require completion of the following courses:

363-0503-00 Principles of Microeconomics

363-0565-00 Principles of Macroeconomics

363-0561-00 Climate Economics and Finance

In addition, depending on the thesis topic, we require completion of at least one additional relevant course such as:

363-0570-00 Principles of Econometrics

363-0575-00 Economic Growth, Cycles and Policy

363-0537-00 Resource and Environmental Economics

363-1036-00 Empirical Innovation Economics

363-1136-00 Dynamic Macroeconomics, Innovation and Growth

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www.clenec.ethz.ch/research

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Chair of Integrative Risk Management and Economics

Professor Antoine Bommier

Vision – The chair at a glance

Professor Bommier and his group conduct research in the economics of risk management, with a particular interest in approaches that look at sources of risk from an integrative point of view. Research topics vary from theoretical problems related to multidimensional risk management to applied issues focusing on specific risks, including financial, environmental, and demographic risks. Members of the group contribute to the activities of D-MTEC and are particularly involved in the activities of the Center of Economic Research at ETH (CER-ETH) and of the ETH Risk Center.

Research

The chair conducts both theoretical and applied research on the economic analysis of risk. This research is conducted within a general applied theory tradition, in which theoretical innovations are developed and then related to specific problems. The chair's main contributions in theoretical research bear on multidimensional risk management – a field that has not been explored in depth to date.

This research can be applied to a huge variety of problems, but the chair emphasises applications related to three specific risks: financial, environmental, and demographic. The aim is to show why opting for a multidimensional approach may provide a better management of each risk, as well as to underline other advantages of considering them jointly.

Teaching*

HS	363-1081-00	Asset Liability Management and Treasury Risks (E)
	363-1100-00	Risk Case Study Challenge (E)
	363-1106-00	The Economics of Climate Change (E)
	363-1162-00	Resilience in the New Age of Risk (E)
	364-0531-00	CER-ETH Research Seminar
FS	364-1025-00	Advanced Microeconomics
	364-1058-00	Risk Center Seminar Series
	363-0515-00	Decisions and Markets (C)
	363-1000-00	Financial Economics (E)
	363-1100-00	Risk Case Study Challenge (E)
	363-1114-00	Introduction to Risk Modelling and Management (E)
	364-1058-00	Risk Center Seminar Series

Writing a Master's thesis at our chair

If you are interested in writing a risk-related Master's thesis at the IRME chair, we would be happy to receive your application, which should include your CV, your transcript of records, and a statement of motivation.

Your application should mention the topics and methods that are of interest to you. It is expected that you will already have taken a careful look at the chair's website and at some research papers of the group's members.

If you would like to know more about the possibilities of writing a risk-related Master's thesis at the IRME chair, or if you have already formulated your own ideas on what thesis you would like to develop and work on, please contact us.

Contact

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www.irme.ethz.ch

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Chair of Technology and Innovation Management

Professor Stefano Brusoni

Vision – The chair at a glance

We are a group of diverse researchers interested in understanding how innovation happens and how and to what extent business and society can benefit from it. We study both individuals (how they learn; how they develop cognitive and technical skills; how they manage their emotions) and organisations (their internal dynamics as they search out, adopt and develop new technologies; how they manage the interplay of stability and change; their evolving relationships within ecosystems). We build on a variety of methods including experiments, field studies and simulation modelling.

Research

We look at innovation with a critical eye. We are aware that not everyone benefits equally from it, at least in the short term. We are interested in understanding why, when and how tensions arise between, for example, stability and change, or short- and long-term objectives, and, more generally, when the pursuit of business objectives conflicts with the greater needs of society. We also examine how these tensions can be resolved. Our research can be grouped into two broad areas:

Technology Systems and Strategy – TESS Our aim is to understand how organisations leverage technical change to solve problems: their own, their customers' and those of society. We are interested in understanding the obstacles that prevent the adoption of new technologies or the realisation of their full potential. Key questions focus on strategic entry into new technological areas, the integration of new and existing technologies, and the evolution of boundaries and internal processes that manage innovation and change.

Cognition Learning and Adaptive Behaviour – COLAB The adaptive behaviour of individuals is a fundamental aspect of change and innovation. After all, it is individuals who initiate and drive change and innovation in dynamic environments. Our goal is to understand the cognitive mechanisms involved in adaptive decision-making, problem-solving and learning. To achieve this interdisciplinary goal, we use a combination of qualitative, experimental, neuroimaging and computational methods. Key questions focus on how individuals can develop abilities that better allow them to manage tensions such as those between exploration and exploitation, between social and economic outcomes, between creative and old ideas, and between focusing on one rather than multiple goals.



Teaching*

- HS** **363-0389-00** Technology and Innovation Management (C)
 363-0341-00 Introduction to Management (C)
 364-1110-00 Foundations of Innovation Studies
- FS** **363-0764-00** Project Management (E)
 365-1097-00 Innovation Management

Writing a Master's thesis at our chair

We encourage students interested in writing an innovation-related Master's thesis at TIM to submit an application including a brief statement of motivation, a CV and a transcript of records. Students writing a thesis at TIM should attend both core courses offered by our chair:

- 363-0389-00** Technology and Innovation Management
363-0341-00 Introduction to Management

and at least one methods course on how to write a thesis and/or how to collect data (e.g. Management Research).

Contact

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Chair of Entrepreneurship

Professor Bart Clarysse

Vision – The chair at a glance

Our group focuses on research and teaching in the broad area of entrepreneurship, with a strong emphasis on high-impact entrepreneurial activity. We aim to contribute new insights into how entrepreneurs and organisations create value from innovative initiatives. Our main context is that of independent technology ventures emerging from environments such as universities and different types of corporate venturing initiatives.

Research

We conduct theoretical and empirical research that contributes to important conversations in management research, with an emphasis on new technology and implications for entrepreneurial strategy. We predominantly study deep-tech contexts but are open to all domains in which entrepreneurial venturing generates social and economic value. We are currently focusing on the following settings:

- science-based ventures and how their processes of strategy formation and resource mobilisation impact their development trajectories
- new technology paradigms (e.g. blockchain, AI, ML) and how these lead to new forms of organising economic activity
- corporate entrepreneurship and how to design systems that successfully contribute to corporate innovation and renewal
- grand challenges and the impact of technology entrepreneurship in designing new sustainable structures and business ecosystems

Teaching*

We are committed to designing and delivering innovative educational programmes that combine useful theory with practical experience. Our teaching is aimed at self-motivated students who want to explore entrepreneurial career opportunities. To enrich the learning experience, we build on real-life cases, project-based teaching, and regular talks from members of the start-up community.

- HS** **363-0790-00** Technology Entrepreneurship (E)
 363-1082-00 Enabling Entrepreneurship: From Science to Startup (E)
 351-0778-00 Discovering Management
- FS** **363-1077-00** Entrepreneurship (C)
 363-1095-00 Commercialising Science and Technology (E)
 363-1103-00 Lean Startup Academy – From Idea to Startup (E)
 351-0778-00 Discovering Management

Writing a Master's thesis at our chair

We supervise MSc and MAS theses that align with our research areas. We enjoy working with self-starters and ambitious students who have a strong interest in producing high-quality work. Students writing a thesis at our chair should have attended our core course 363-1077-00 Entrepreneurship and/or one of the specialised courses from the chair's education portfolio, plus at least one methods course on how to write a thesis or how to collect data.

The application for the thesis should include a short motivation statement, a short statement of how the thesis fits into our research interests, a CV and your transcript of records. More information on how to apply can be found on our website.

Contact

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Chair of Applied Economics: Innovation and Internationalisation

Professor Peter Egger

Vision – The chair at a glance

The chair's main research focus is on applied international trade and multinational firms. We study the patterns and consequences of international linkages between countries and firms in the context of a global economy.

We collaborate internationally by disseminating our findings in presentations at scientific events, publishing in high-quality peer-reviewed journals, and providing consultancy and advice to public institutions based on policy-relevant research.

Research

Applied and theoretical econometrics: we use microeconomic and panel methods and econometric models with spatial interdependence in our applied work and develop methods that exhibit desirable properties for econometric analysis.

International economics: we are interested in the determinants and consequences of trade and multinational activity with a view to developing structural models of trade flows to estimate the consequences of shocks in trade frictions on trade, GDP, and welfare.

Industrial organisation and multinational firms: combining theory and application, we examine the determinants and consequences of trade and multinational activity at the micro-level.

Public finance and regional economics: along with gathering extensive data on tax systems, we develop and estimate models of international tax competition at both the corporate and individual level. We are also interested in the evaluation of regional support programmes.



Teaching*

- HS** **363-0585-00** Intermediate Econometrics (E)
 364-0585-01 Applied Econometrics
 363-0511-00 Managerial Economics (for students of other departments)
- FS** **364-1015-00** International Economics: Theory of New Trade and Multinational Firms

At the doctoral level, we also teach courses on spatial and panel econometrics and simulation modelling in microeconomics on an irregular basis.

Writing a Master's thesis at our chair

Thesis applications from MSc and MAS students should include a short motivation statement, a CV, and a transcript of records. We also require the completion of either 363-0570-00 (Principles of Econometrics) and 363-0585-00 (Intermediate Econometrics), or 364-1015-00 (International Economics), depending on the thesis topic.

Contact

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Chair of Energy and Public Economics

Professor Massimo Filippini

Vision – The chair at a glance

Our mission is to improve the understanding of issues in energy economics and policy in both industrialised as well as in developing countries using empirical methods, to contribute to the evaluation of policy instruments and to apply learnings from behavioural economics in the realm of environmental and energy economics.

Research

Within the field of applications of energy economics in both industrialised as well as in developing countries, we utilise micro-econometric methods to analyse the behaviour of households with respect to energy-saving measures and investments, as well as to study issues related to energy demand. In particular, we are interested in analysing the adoption of energy-efficient durable goods (electrical appliances, cars etc.) and the role played by a household's level of energy-related financial literacy.

In addition, we use the tools of behavioural economics to better understand underinvestment in energy efficiency on a microeconomic level. We focus on how behavioural anomalies (such as cognitive limitations, or limited attention) may prevent households and firms from undertaking these investments. In a new strand of research, we also study the role of behavioural factors in determining investments in pension plans and other personal finance instruments. In the area of policy evaluation, we use empirical methods to undertake assessments of existing policies in the fields of electricity demand, as well as investments in energy-saving durables. Examples of policies that we have studied include taxes and subsidies/rebates, information-based programmes and energy-efficiency policies, as well as the role played by factors such as culture and religion.

Teaching*

- HS** **363-0503-00** Principles of Microeconomics (C)
 363-1137-00 Applied Econometrics in Environmental and Energy Economics (E)
- FS** **363-0514-00** Energy Economics and Policy (E)
 363-1164-00 Topics in Energy and Climate Policy (E)

Writing a Master's thesis at our chair

For writing a thesis in **Environmental and Energy Economics** you should be familiar with the contents of the courses 1-7 in the list below (or courses with equivalent contents) plus one additional course in economics.

- | | | |
|----------|--------------------|--|
| 1 | 363-0503-00 | Principles of Microeconomics |
| 2 | 363-0514-00 | Energy Economics and Policy |
| 3 | 363-0537-00 | Resource and Environmental Economics |
| 4 | 363-1137-00 | Applied Econometrics in Environmental and Energy Economics |
| 5 | 363-0515-00 | Decisions and Markets |
| 6 | 363-1063-00 | Academic Writing Course |
| 7 | 363-0570-00 | Principles of Econometrics |

We therefore ask you to provide a transcript of records when contacting us.

Contact

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www.eepe.ethz.ch/education/master-thesis

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Chair of Information Management

Professor Elgar Fleisch

Vision – The chair at a glance

We attempt to understand the ongoing merging of the digital and physical worlds, and to leverage this understanding in the design of new technologies and applications for the benefit of the economy and society. To realise this vision, we investigate the impact of new technologies using a vertically integrated approach: we identify, design, and build emerging applications and theorise about their potential implications for policy and business models, which we then test in field experiments whenever possible.

Research

The group organises its research in labs that are located at ETH Zurich, the University of St. Gallen, other academic institutions, and among research partners in industry:

Bits to Energy Lab investigates the role of ubiquitous computing technologies for reducing energy consumption and greenhouse gas emissions, with a focus on behavioural interventions for resource conservation.

Centre for Digital Health Interventions links IT and behavioural sciences to promote well-being and a healthy lifestyle by building and evaluating health information systems aimed at health promotion and disease prevention.

Teaching*

HS [363-0421-00 Management for Digital Transformation \(C\)](#)
[363-0425-00 Transformation: Corporate Development and IT \(E\)](#)
[363-1163-00 Developing Digital Biomarkers \(E\)](#)

CAS ETH in Digital Health

Writing a Master's thesis at our chair

We are looking for students with a strong technical background, especially in the fields of computer science and/or data analytics (data mining/machine learning). We do not require any mandatory courses. However, we strongly recommend taking one or more of the courses offered by our group, or courses related to the field of data analytics (e.g., 252-0220-00 Introduction to Machine Learning, 252-0535-00 Advanced Machine Learning, etc.).

If you are interested in writing your thesis with us, we would be happy to receive your application, consisting of a CV, a transcript of records, and a motivation statement outlining your topic of interest and identifying the potential host. For a list of possible topics, please check our webpage and contact the responsible person directly.

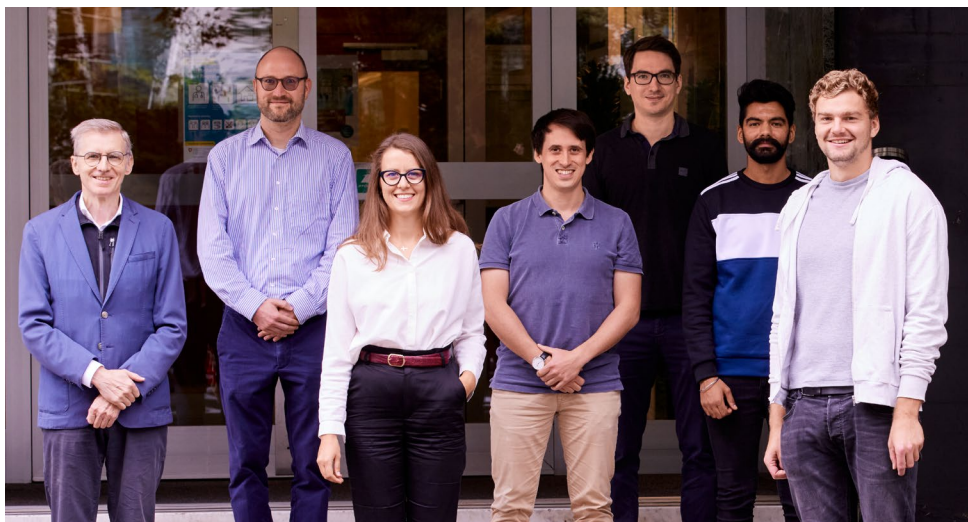
If you cannot find a match for your interests, or you have an idea of your own that aligns with our ongoing projects, please send your application to Filipe Barata, and we will try to find a suitable topic for you.

Contact

Filipe Da Conceição Barata fbarata@ethz.ch

www.im.ethz.ch/education/research-and-thesis-projects

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Chair of Macroeconomics: Innovation and Policy Professor Hans Gersbach

Vision – The chair at a glance

We suggest improvements in policies and design new institutions for the benefit of the economy and society. We develop and employ macroeconomic, strategic, and cooperative thinking to examine short- and long-term economic and political problems. Examples of our work are monetary and fiscal policy suggestions to stimulate innovation and growth, regulatory frameworks to stabilise the financial system, and new voting and election rules for the enhancement of democracies.

Research

We are interested in a wide range of research questions in different areas:

Area M: Macroeconomic thinking and economic policy.

Area I: Innovation, the engines of growth and long-term well-being.

Area P: Design of new organisations/institutions and their foundations.

Special Area: Banking and financial stability.

Teaching*

- HS** **363-1136-00** Dynamic Macroeconomics, Innovation and Growth (E)
 363-1177-00 Monetary Theory (E)
- FS** **363-0575-00** Economic Growth, Cycles and Policy (C)
 363-0558-00 Introduction to Game Theory: Strategic and Cooperative Thinking (E)
 364-0559-02 Design of Institutions and Political Economy

Writing a Master's thesis at our chair

If you are interested in writing a Master's thesis at our chair, please make sure you have completed all of the following courses:

- 363-0503-00** Principles of Microeconomics
- 363-0565-00** Principles of Macroeconomics
- 363-0558-00** Introduction to Game Theory: Strategic and Cooperative Thinking
- 363-1063-00** Academic Writing Course

as well as one of these courses:

- 363-0575-00** Economic Growth, Cycles and Policy
- 363-1136-00** Dynamic Macroeconomics, Innovation and Growth
- 363-1177-00** Monetary Theory (E)

Your application should consist of a CV, a short motivation letter (max. 300 words) in which you specify the area of research that interests you, your most recent transcript of records, and a list of the economics courses you have attended but which are not listed in your transcript of records. Please verify that you fulfil all of the requirements needed before you apply.

Before getting in touch with us, we strongly recommend that you browse through our website and familiarise yourself with the research topics we are working on.

Contact

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www.mip.ethz.ch

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Chair of Work and Organisational Psychology

Professor Gudela Grote

Vision – The chair at a glance

We wish to make a significant contribution to the advancement of theories and methods in work and organisational psychology as well as to the improvement of the quality of working life.

In close cooperation with scientific and industrial partners, we develop solutions to current problems within the domain of organisation, work, and technology. In our teaching we motivate and enable students to use knowledge from work and organisational psychology in their occupational fields.

Research

Our basic interest is in understanding how organisations and individuals deal with uncertainty. We use the perspective of uncertainty management, which allows us to systematically analyse decisions that involve reducing, maintaining or increasing uncertainties and their effects on the interaction between people, organisations, and technology.

In our research projects we study these processes on the level of:

- the organisation (e.g. standardisation of work processes)
- the group (e.g. coordination in high-risk teams)
- the individual (e.g. career management in flexible employment relationships).

Teaching*

Our teaching aims at communicating basic and advanced knowledge in work and organisational psychology within an integrative framework of people, technology, and organisations. All courses include practice-oriented teaching with project work and case studies.

- | | |
|-----------|--|
| HS | 363-0301-00 Work Design and Organizational Change (E) |
| | 363-0311-00 Psychological Aspects of Risk Management and Technology (E) |
| | 364-1013-05 Organizational Behaviour |
| | 365-1019-00 Human Resource Management: Skills in Practice |
| FS | 363-0302-00 Human Resource Management: Leading Teams (C) |
| | 364-1020-01 Methodological Fit in Management Research |
| | 365-1068-00 Case Studies in HRM |

Writing a Master's thesis at our chair

We welcome MTEC students (MSc and MAS) to write their Master's thesis in our research group. Thesis topics can be chosen from the list of available topics, but can also be individually defined based on students' interests together with the tutor and supervising research assistant. MSc students are required, and MAS students strongly encouraged to take the following three courses:

- 363-0302-00** HRM Leading Teams
- 363-0301-00** Work Design and Organizational Change
- 363-0305-00** Empirical Methods in Management

Our aim is to support students in investigating concepts from work and organisational psychology (leadership, team dynamics, work design, creativity, and career management, to name a few) in relation to broader questions regarding the management of organisations, such as improved work flows, resource and project management, risk management and organisational change. A list of possible thesis topics with detailed descriptions can be found on our website, which we urge interested students to consult before contacting us.

Contact

Jacqueline Hohermuth jhohermuth@ethz.ch

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Chair of Sustainability and Technology

Professor Volker Hoffmann

Vision – The chair at a glance

Our vision is to improve the understanding of technological innovation, institutional dynamics and organisational strategies as key drivers towards a de-carbonised, circular economy.

To this end, we adopt two complementary perspectives. The first focuses on the system level and analyses the role of institutions and public policy in the innovation and diffusion of sustainable technologies. The second focuses on the company level to explore corporate strategies and organisational change.

Research

Overarching topics: climate change, energy transition, circular economy.

Policy: innovation policy, energy policy, climate policy.

Technology: energy storage, energy efficiency, energy hubs, smart grids, mini grids, electric vehicles, carbon reduction technologies, hydrogen, recycling technologies, chemical recycling, circular building technologies.

Strategy: innovation strategy, climate strategy, sustainability strategy.

Teaching*

HS	363-0387-00	Corporate Sustainability (C)
	364-1154-00	Technological Innovations and Sustainability Transitions
FS	363-1029-00	Sustainability & Financial Markets (E)
	363-1038-00	Sustainability Start-Up Seminar (E)
	363-1060-00	Strategies for Sustainable Business (E)
	363-1076-00	Accelerating the Net-Zero Transition: Technology, Firms, and Policy (E)
	363-1115-00	Energy Innovation and Management (E)
	363-1132-00	Business Models for a Circular Economy (E)
	363-1184-00	Management Theories for Sustainability

Master's thesis requirements

If you are interested in writing a sustainability-related Master's thesis at SusTec, please send us your application documents including a brief motivation statement, your CV and your transcript of records. One important requirement for MTEC Master's students is the attendance of the SusTec core course: Corporate Sustainability.

Important: Our application process ensures that your application will be seen by all relevant team members. To avoid confusion, please do not send applications to multiple SusTec members.

Thank you for checking our chair's website before contacting us – we have created a webpage with sample Master's theses and other relevant details.

Contact

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MAS students: Lucas Miehé lmiehe@ethz.ch

sustec.ethz.ch/teaching/semester-theses

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Chair of Public Economics

Professor Marko Köthenbürger

Vision – The chair at a glance

Our vision is to enhance our understanding of the way public policy influences business behaviour and the efficiency of the economy. The way multinational firms respond to public policies, the role of public policies in fostering the digital economy, and the evolution of urban transportation are three examples of our areas of interest.

To disseminate knowledge, members of the group organise seminars, workshops, and conferences. We also advise public institutions. Publications in leading economic journals round out our dissemination strategy.

Research

The research focus of the group is on theoretical, empirical and experimental research in areas of public economics such as corporate taxation, two-sided digital platforms, transportation economics, fiscal competition, and behavioural public economics.

The research strategy involves both normative and politico-economic analyses. In particular, research topics include:

- How do digital platforms create value in society?
- Are digital platforms special in the way they respond to public policy, or can “one size fits all” policies apply to the digital economy?
- How does society make decisions about transportation networks and what are their economic effects?
- Do only multinational enterprises benefit from fiscal competition? Or do countries as well?
- How should corporate taxes be designed in a global, technology-driven economy?



Teaching*

Our teaching activities complement the research strategy of the public economics group. Our goal is to use up-to-date teaching formats to disseminate knowledge about all aspects of our research topics to students and the general public. Our lectures are open to undergraduate, graduate and doctoral students, both of D-MTEC and ETH-wide.

- HS** **363-1037-00** Fiscal Competition and Multinational Firms (E)
 363-1047-00 Urban Systems and Transportation (E)
 363-0511-00 Managerial Economics (for students of other departments)
- FS** **363-1008-00** Public Economics (E)
 364-1045-00 Advances in Public Economics

Writing a Master's thesis at our chair

Please do not hesitate to contact us if you are interested in learning about the possibility of writing your thesis at the Chair of Public Economics. Further, if you have an inquiry about pursuing your thesis abroad, or writing a thesis with external partners, we would be happy to hear from you.

Contact

Tommaso Giommoni giommoni@ethz.ch

www.pec.ethz.ch

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Chair of Strategic Management and Innovation

Professor Georg von Krogh

Vision – The chair at a glance

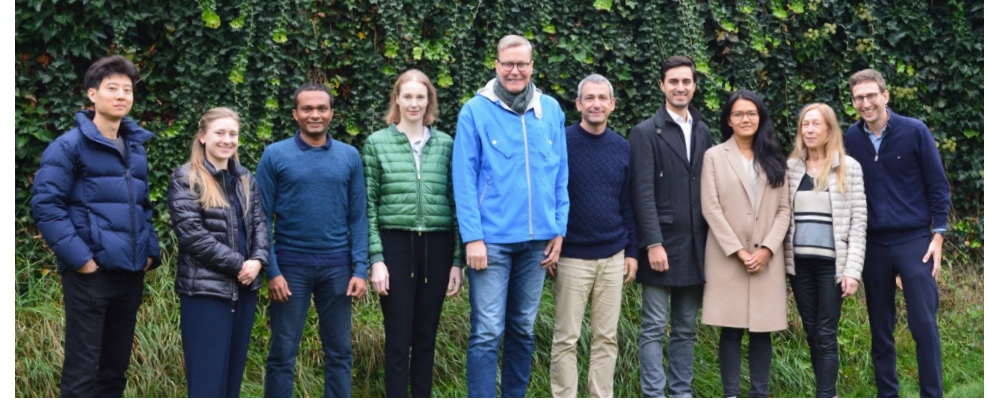
We share a vision of contributing significantly to the highest level of academic research in the fields of management and business. Our mission is to enable strategy and innovation in a digital world, with a commitment to outstanding management research and education. Our chair consists of people with diverse backgrounds ranging from social sciences to engineering and natural sciences. We are convinced that this unique composition results in a creative, inspiring, and vibrant work environment that benefits our students.

Research

Within the area of management and social sciences, the academic work conducted at SMI is located at the interface between strategic management and innovation. Innovation is a key driver for company performance, and generating strategies that foster and leverage innovation is a critical management task. Our research explores and explains the key sources of competitive advantage related to technology, and we seek insights that will be valuable to practitioners. We engage in theory building and conduct profound empirical research using both qualitative and quantitative methods. Our team works extensively with Swiss and international companies.

Our main research areas are:

- competitive strategy
- collaborative and open innovation
- knowledge management
- digital technology/artificial intelligence
- management and organisation theory



Teaching*

Our teaching focuses on developing our students' competencies in the strategic management required for professional life and scientific advancement. We offer courses at the interplay of management practice and well-grounded academic research.

- HS** **363-0392-00 Strategic Management (C)**
 363-0393-00 Corporate Strategy (E)
 363-0404-00 Industry & Competitive Analysis (E)
 363-0887-00 Management Research (E)
 365-1059-00 Practicing Strategy
 351-0555-00 Open- and User Innovation (also for D-MTEC students)
- FS** **363-0392-00 Strategic Management (C)**
 363-0792-00 Knowledge Management (E)
 363-0887-00 Management Research (E)
 365-1111-00 Entrepreneurial Learning: Theory, Practice, and Play

Writing a Master's thesis at our chair

We offer topics related to strategy research. Students are also welcome to define and propose their own topics. If you have ideas for a topic, feel free to contact any of our team members. The Master's thesis can be conceptual/theoretical, focused on a particular industry, or oriented toward solving a practical problem in a company.

Mandatory courses for students interested in writing a Master's thesis at SMI are:

- 363-0392-00 Strategic Management**
363-0887-00 Management Research

Contact

Cyrille Grumbach cgrumbach@ethz.ch

www.smi.ethz.ch/education/master-thesis-supervision

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Chair of Political Economy and eDemocracy

Professor Barton Lee



Vision – The chair at a glance

Our goal is to understand and, in turn, improve democratic decision-making. We analyse the behaviour of political actors and the role of political institutions in shaping policy. In addition, we explore the potential benefits—as well as the threats—posed to democracies by new technologies and digitisation. Methodologically, we utilise theoretical and empirical tools from economics, political science, and computer science.

Research

We cover a wide range of topics within political economy and eDemocracy such as:

- legislative bargaining and policymaking,
- elections and political accountability,
- democratic backsliding and populism,
- political polarization,
- design and analysis of voting systems (social choice theory).

Teaching*

HS **363-0558-00** Introduction to Game Theory: Strategic and Cooperative Thinking (E)
FS Decisions, Markets, and Games (C)

Writing a Master's thesis at our chair

If you are interested in writing a Master's thesis at our chair, please get in touch with us via email. Your application should consist of a CV, a short motivation letter (max. 300 words) in which you specify the area of research and methods that interest you, and your most recent transcript of records. For those interested in theoretical methods, you should have completed courses in microeconomics and game theory. For those interested in empirical methods, you should have completed courses in microeconomics and causal inference.

Before contacting us, we strongly recommend that you browse our website and familiarise yourself with the research topics we are working on.

Contact

Barton Lee bartonlee@ethz.ch

www.pedem.ethz.ch

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Chair of Production and Operations Management

Professor Torbjørn Netland

Vision – The chair at a glance

We conduct empirical and innovative production and operations management (POM) research with high relevance. We aim to deliver research that matters and teaching that inspires with the goal of developing better operations in industry and society.

Research

POM is at the heart of any business. It is concerned with the productivity of technology, people, and processes. POM covers the business processes that transform input into output and deliver products and services to customers. POM is a generic research field. It is not only important in the manufacturing sector; also primary industries, service firms, and governmental organisations are dependent on their operational capabilities.

The Chair of POM currently places special focus on the following four areas:

Operational Excellence: lean management, machine learning, digitisation, etc.

Smart Manufacturing: application of industry 4.0 technologies, etc.

Global Production: factory network configuration and coordination, etc.

Sustainable Manufacturing: remanufacturing, green manufacturing, etc.



Teaching*

HS **363-0445-00** Production and Operations Management (C)

365-1166-00 Lean Production

FS **363-0448-00** Global Operations Strategy (E)

363-0768-00 Industrial Perspectives on Operations Management (E)

363-1117-00 Factory Planning and Design (E)

Master's thesis requirements

We welcome applications for Master's theses from both MSc and MAS students on POM-related topics. Students writing a thesis at the Chair of POM must have attended our core course:

363-0445-00 Production and Operations Management

Additionally, applicants should preferably have taken at least one other POM course. We also highly recommend that students acquire methodological training through a course such as:

363-0305-00 Empirical Methods in Management

Note that all our students are asked to write their thesis in cooperation with industrial partners. Please check our webpage for eligibility and procedure.

Contact

Alexander Albers alexander.albers@mtec.ethz.ch

www.pom.ethz.ch/education/theses

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Chair of Education Systems

Professor Ursula Renold



Vision – The chair at a glance

The chair's research unit investigates the challenges confronting education systems in the face of globalisation, an ageing society and the rapid development of technology. We also examine the characteristics of effective education systems around the world, and how well these systems meet the demands of the labour market. Our research also focuses on the intersection of education systems with issues related to gender, immigration and development. Building on our experience in translational research, our findings enhance the role of education systems in development, not just in Switzerland, but in low-middle-income countries around the world.

Research

Today, Switzerland is one of the most innovative and competitive countries in the world. This is at least partially due to its diverse, flexible and permeable education and training system, which can adapt rapidly to the needs of the economy and the wider society. Switzerland's education system is therefore regarded as the gold standard, a system from which many other countries could learn.

The Chair of Education Systems compares and analyses education systems around the world to formulate evidence-based recommendations. This presents a challenge because education systems are deeply rooted in the specific cultures of individual countries. Accordingly, we have developed benchmark instruments like the Education-Employment Linkage Index (EELI), which examines how actors in the education and employment systems share power in vocational education and training programmes. We also conduct empirical research providing causal evidence of the EELI using real-world policies and settings. Specifically, we use exogenous shocks such as policy changes to estimate the impact of EELI on educational and labour market outcomes across various countries. These benchmark indicators allow for a comparison of the institutional and legal frameworks of global education systems and of their governance and contribute to the analysis of the impacts of particular characteristics of education systems on the youth labour market landscape.

Teaching*

HS 363-1107-00 Youth Labor Market Outcomes, Institutions and Governance of Education and Training Systems (E)
 351-1158-00 Principles of Economics

Writing a Master's thesis at our chair

We welcome D-MTEC students (MSc and MAS) who would like to write their Master's thesis in our research group. The topic of the thesis can be decided on individually, taking into account the interests of the student and inputs from the tutor and the supervising research assistant.

MSc students are required, and MAS students are strongly encouraged, to take the following course:

363-1107-00 Youth Labor Market Outcomes, Institutions and Governance of Education and Training Systems

We are also happy to supervise BSc and MSc theses written by students from other ETH departments and from other universities, if the topics can be linked to ongoing research by our group. Details regarding the duration of the work and other administrative matters should be clarified by students with their respective institution.

Students interested in writing a thesis with us are requested to send an application (short biography, transcript, description of motivation and topic) directly to the administration of our professorship.

Contact

Audrey Au Yong Lyn, Postdoc audrey.auyonglyn@mtec.ethz.ch
 Silvia Walter, Administrative Assistant silvia.walter@mtec.ethz.ch

www.ces.ethz.ch

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Chair of Organizational Behavior

Professor Petra Schmid



Vision – The chair at a glance

The Chair of Organizational Behavior investigates topics related to power and leadership. Much of our research examines how different mindsets and psychological states (e.g. experience of power, emotions, abstract vs. concrete thinking styles) affect individuals' cognition and behaviour. Our research has practical implications for organisations, where high-power people make influential decisions that have important consequences for others.

Research

To inform our research questions, we integrate theory and methodology from management and psychology. Our methodological approaches include online studies, survey-based field research and laboratory experiments.

Our current research addresses the following questions:

- How do prior work experiences affect perceived leadership skills and leadership potential?
- Does sense of power affect the way people set and pursue goals, and why?
- How do people with a high (vs. low) sense of power decide whether it is worth investing effort for a reward/goal?
- Does concrete (vs. abstract) thinking benefit performance when pursuing a specific (vs. broad) goal?
- Do people who champion highly novel ideas signal higher suitability for senior management roles?
- Do power feelings and power motives affect whether people appreciate and support highly novel ideas?

Teaching*

FS **363-1080-00** [Power and Leadership \(C\)](#)
 363-1066-00 [Occupational Health Management \(E\)](#)

Writing a Master's thesis at our chair

Thesis projects must be based on quantitative research methods. If you are interested in writing a thesis at the Chair of Organizational Behavior, you should have attended the chair's course "Power and Leadership".

You may either approach us with your own research idea or request to be part of one of the chair's currently open Master's thesis projects.

Contact

Marie Crouzevialle mcrouzevialle@ethz.ch

www.ob.ethz.ch/education/master-thesis

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Chair of Systems Design

Professor Frank Schweitzer

Vision – The chair at a glance

Our research focuses on the structure and dynamics of complex social and economic systems. Our methodological approach can best be described as data-driven modelling.

That means (i) we analyse big data to detect statistical regularities in social and economic systems, (ii) we build large-scale agent-based models to simulate the interaction dynamics on the “micro” level and thereby rendering the system’s dynamics accessible on the “macro” level, and (iii) we use rigorous mathematical models to understand these systems.

Research

We tackle a range of different research questions, e.g.:

- How do software engineers collaborate and coordinate in (open-source) software development and how can their collaboration be made more efficient?
- How do politicians support and influence each other to advance their own causes?
- How do scientists collaboratively create and disseminate knowledge?

Our three core interests comprise:

- fundamental concepts of complex systems, including developing new mathematical and statistical tools for the analysis of temporal and multi-layered networks
- social organisations and social networks, including their evolution and adaptation to shocks with a focus on online social networks and political, historic, and collaboration networks
- economic networks, ranging from the evolution of trade networks to knowledge transfer in R&D networks



Teaching*

- HS** **363-0541-00** Economic Dynamics and Complexity (C)
 363-1167-00 Data Science for Social Challenges (E)
- FS** **363-0543-00** Agent-based Modeling of Economic Systems (E)
 363-1091-00 Social Data Science (E)

Writing a Master’s thesis at our chair

MSc and MAS students interested in writing a Master’s thesis or doing a semester project should have attended the core and elective courses offered by the chair.

To apply, they should send in a motivation statement, their CV, and their transcript of records.

Contact

Frank Schweitzer fschweitzer@ethz.ch

www.sg.ethz.ch

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Chair of Applied Macroeconomics

Professor Jan-Egbert Sturm

Vision – The chair at a glance

We conduct empirical and policy-relevant research in the broad fields of macroeconomics and political economy. We want to improve our understanding of how the overall economy performs and evolves. The group's expertise lies especially in empirical analyses using a wide spectrum of different methodologies, ranging from advanced panel econometrics to time-series approaches and random control procedures to typically deal with current macroeconomic policy problems that are related to Switzerland.

Research

The chair's main research focus revolves around the following macroeconomic areas:

- political economy
- monetary economics
- labour economics
- public economics
- fiscal policy
- macroeconomic forecasting

We currently focus on topics combining knowledge from international macroeconomics and international political economy. For example, we carry out projects relating corruption and migration flows, or linking individual firm and household data to topics related to the business cycle and economic forecasting. By combining data at the national level with geospatial information and microeconomic data, we also hope to learn more about e.g., regional activity and inequality.

Teaching*

HS	363-0565-00	Principles of Macroeconomics (C)
	363-1021-00	Monetary Policy (E)
FS	363-0570-00	Principles of Econometrics (C)
	363-0584-00	International Monetary Economics (E) Applied Political Economy (E)

Some of these courses are taught together with KOF members.

Writing a Master's thesis at our chair

If you are interested in writing a Master's thesis in the field of (empirical) macroeconomics, we would be happy to receive your application. MSc students are required to have passed the following courses:

- 363-0503-00 Principles of Microeconomics
- 363-0515-00 Decisions and Markets
- 363-0565-00 Principles of Macroeconomics
- 363-0575-00 Economic Growth, Cycles and Policy
- 363-0570-00 Principles of Econometrics

The course 363-0585-00 Intermediate Econometrics is also highly recommended. Although not required, taking the elective courses Applied Political Economy, 363-1021-00 Monetary Policy and/or 363-0584-00 International Monetary Economics is recommended. They will give you a good introduction to (some of) the topics we are working on. If you are an MAS student, you should have earned at least 6 CP points by taking some of the above courses.

Contact

Sabrina Humbel humbel@kof.ethz.ch

www.kof.ethz.ch

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Chair of Logistics Management

Professor Stephan Wagner

Vision – The chair at a glance

Our chair is a preeminent and well-respected institution in the community of researchers and practitioners in supply chain management (SCM). To further strengthen its position, the group is eager to shape the future of theory and practice of SCM through ground-breaking research. Our research findings contribute substantially to the next generation of supply chain knowledge and are disseminated through publications in top-ranked academic journals, the chair's logistics curriculum, and professional courses. Furthermore, the group ensures that newly generated knowledge is applied in practice by actively maintaining a large network of experts from both industry and academia.

Research

Our research is guided by the definition of SCM as “the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities” (Council for SCM Professionals). It focuses on strategic aspects of purchasing and supply management, logistics and transportation management, business marketing management, and SCM. While our research is empirically focused and grounded in SCM, we draw on numerous data sources and analytical methods and engage with disciplines such as marketing, entrepreneurship and engineering.

Our ongoing research projects primarily focus on five core areas:

- sustainability and ethics in purchasing and SCM
- humanitarian operations and SCM (HumOSCM)
- innovative start-up suppliers
- digitalisation in supply chains
- supply chain strategy

Teaching*

- HS** **363-0453-00 Strategic Supply Chain Management (C)**
- FS** **363-0452-00 Purchasing and Supply Management (E)**
 363-1048-00 Sustainable Supply Chain Management (E)
 363-1129-00 Humanitarian Operations and Supply Chain Management (E)

Writing a Master's thesis at our chair

If you are interested in the fields mentioned before, we support you in finding a suitable Master's thesis topic. The topics can be fundamental or tackle new and upcoming challenges in digitalisation, sustainability or distribution, among others. Although you do not have to be an expert in any of these fields, it is highly recommended to attend at least one of our courses. We aim to provide an excellent supervision – several of our former Master's students have received awards for their outstanding theses.

To begin please look up the current Master's thesis proposals on our website. If these match your interests, please send us your application, including a brief motivation statement, your CV, and your transcript of records.

In case you have your own ideas or wish to conduct your Master's thesis in collaboration with a company, please ensure that the topic is linked to our areas of expertise: consult our team members' research interests and publication records before contacting us. Please include in your application a proposal (max. two pages) which specifies the research problem that you seek to address as accurately as possible.

For further details on the Master's thesis process at the Chair of Logistics Management, please consult the guidelines on our homepage. If you need further information, please do not hesitate to contact Christian Wagner. We are looking forward to meeting you and discussing the topics in detail.

Contact

Christian Wagner cwagner@ethz.ch

www.scm.ethz.ch/teaching/master-theses

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Chair of Technology Marketing

Professor Florian von Wangenheim

Vision – The chair at a glance

Digitisation has revolutionised how consumer and business services are developed and performed. Face-to-face interaction between service employees and customers has been replaced, enhanced and augmented by the availability of data combined with analytical tools and the possibility of reaching customers anytime and anywhere. The Chair of Technology Marketing works with a variety of academic, industry and societal partners to explore human behaviour on the frontiers of technology-embedded services, in diverse contexts ranging from healthcare to social media. Core questions addressed in our research are to what extent and in which functions and capacities human contact and touch remain vital for the provision of services in order to secure long-term customer, client and/or patient relationships.

Research

The Chair of Technology Marketing comprises three different research areas, all of which have substantial overlaps and fit under the umbrella topic of “technology-mediated services”. With partners such as Digitec Galaxus, we have been conducting data-intensive research in analytical CRM. In the second area, we have been collaborating with Allianz to investigate how service providers can manage the transition from personal to technology-mediated service delivery. In the third area, we are conducting interdisciplinary projects in behavioural health and human-computer interactions in two company-supported initiatives at the Mobiliar Lab for Analytics and the Center for Digital Health Interventions. Research topics include:

- the impact of technology on the customer-firm relationship
- data privacy in digital services
- chatbot design for healthcare services and crisis management
- social media marketing and video content
- machine learning and real-time service personalisation
- market formation and the sharing economy
- service-based value creation for manufacturing companies



Teaching*

- HS** **363-0403-00** Introduction to Marketing (C)
 363-0305-00 Empirical Methods in Management (E)
 363-1051-00 Cases in Technology Marketing (E)
 364-1013-06 Marketing Theory
- FS** **363-1043-00** Marketing Analytics (E)
 363-1128-00 Pricing – Theory and Practice (E)
 363-1146-00 Machine Learning Applications and Society: Interpretability, Explanations and Trust (E)
 364-1052-00 PhD Seminar in Quantitative Marketing Research
 365-1120-00 AI for Executives

Writing a Master's thesis at our chair

Master's theses typically comprise both empirical and analytical work, and can also include more practical elements in collaboration with our industry partners. Students are encouraged to formulate their own thesis, in either a B2C or B2B context, and discuss with the chair how it might fit in with our research aims.

Master's thesis applications should include:

- proposal (about 2 pages)
- curriculum vitae
- transcript of records

Students wishing to write a Master's thesis at our chair should have completed some of the courses we offer (or similar ones at other institutions), or otherwise be able to demonstrate relevant academic/professional experience.

Contact

Dr Patrick Bachmann pbachma@ethz.ch

www.techmarketing.ethz.ch/education/thesis-semester-projects

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KOF Swiss Economic Institute

Vision – KOF at a glance

KOF is a forward-looking research institute that monitors, analyses, and forecasts economic developments relevant to Switzerland. It has its finger on the pulse of the Swiss economy, addresses issues of economic and socio-political importance, develops and presents politically independent solutions on this basis, and promotes the exchange of ideas between economists and the general public.

Research

KOF is organised into five research divisions:

- The Business Tendency Surveys division provides information on the business situation of companies in Switzerland.
- The Macroeconomic Forecasting and Data Science research division conducts empirical analyses of the international and Swiss macroeconomic cycles, working at the interface between data science and statistical modelling.
- The research division Innovation Economics studies economic structures empirically and provides insights into innovation processes and structural change.
- The research division Labour Market Economics identifies labour market trends and assesses the impact of policies and institutions on jobs and wages.
- The KOF Lab research division implements new approaches and topics, including the development of tools for constructing long-term scenarios, randomised controlled trials to support social policymaking, analyses of income and wealth distribution, and the establishment of an economic data centre for Switzerland.

If you would like to get an impression of the topics we are currently focusing on, we refer you to the KOF website where you can also find the KOF Bulletin:

www.kof.ethz.ch

Teaching*

HS	363-1036-00	Empirical Innovation Economics (E)
	363-1159-00	Labor Economics (E)
	363-1161-00	Time Series Econometrics and Macroeconomic Forecasting (E)
	364-1168-00	Economics of Inequality
	351-1109-00	Einführung in die Mikroökonomie
FS	364-1169-00	Evaluating Social Impact with Field Experiments
	364-1026-00	Identification and Causal Inference
	351-1035-00	Macroeconomics

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Writing a Master's thesis at our chair

If you are interested in writing a Master's thesis on a topic closely related to the work of KOF Swiss Economic Institute, we look forward to receiving your application. Senior researchers at KOF are happy to co-advise your thesis, but your main supervisor must be a professor at D-MTEC, including Hans Gersbach and Jan-Egbert Sturm, who form the Directorate of KOF. MSc MTEC students must have completed the following courses:

- 363-0503-00 Principles of Microeconomics
- 363-0515-00 Decisions and Markets
- 363-0565-00 Principles of Macroeconomics
- 363-0575-00 Economic Growth, Cycles and Policy
- 363-0570-00 Principles of Econometrics

The course 363-0585-00 Intermediate Econometrics is also highly recommended.

Depending on the topic of your thesis, some specific courses taught by members of the KOF, the Chair of Applied Macroeconomics or the Chair of Macroeconomics: Innovation and Policy are likely recommended. They will give you a good introduction to (some of) the topics we work on. MAS MTEC students should have earned at least 6 Credit Points from the above-mentioned courses.

Contact

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www.kof.ethz.ch

MSc MTEC

Master of Science in Management, Technology,
and Economics

www.mtec.ethz.ch/msc

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Master of Advanced Studies in Management, Tech-
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