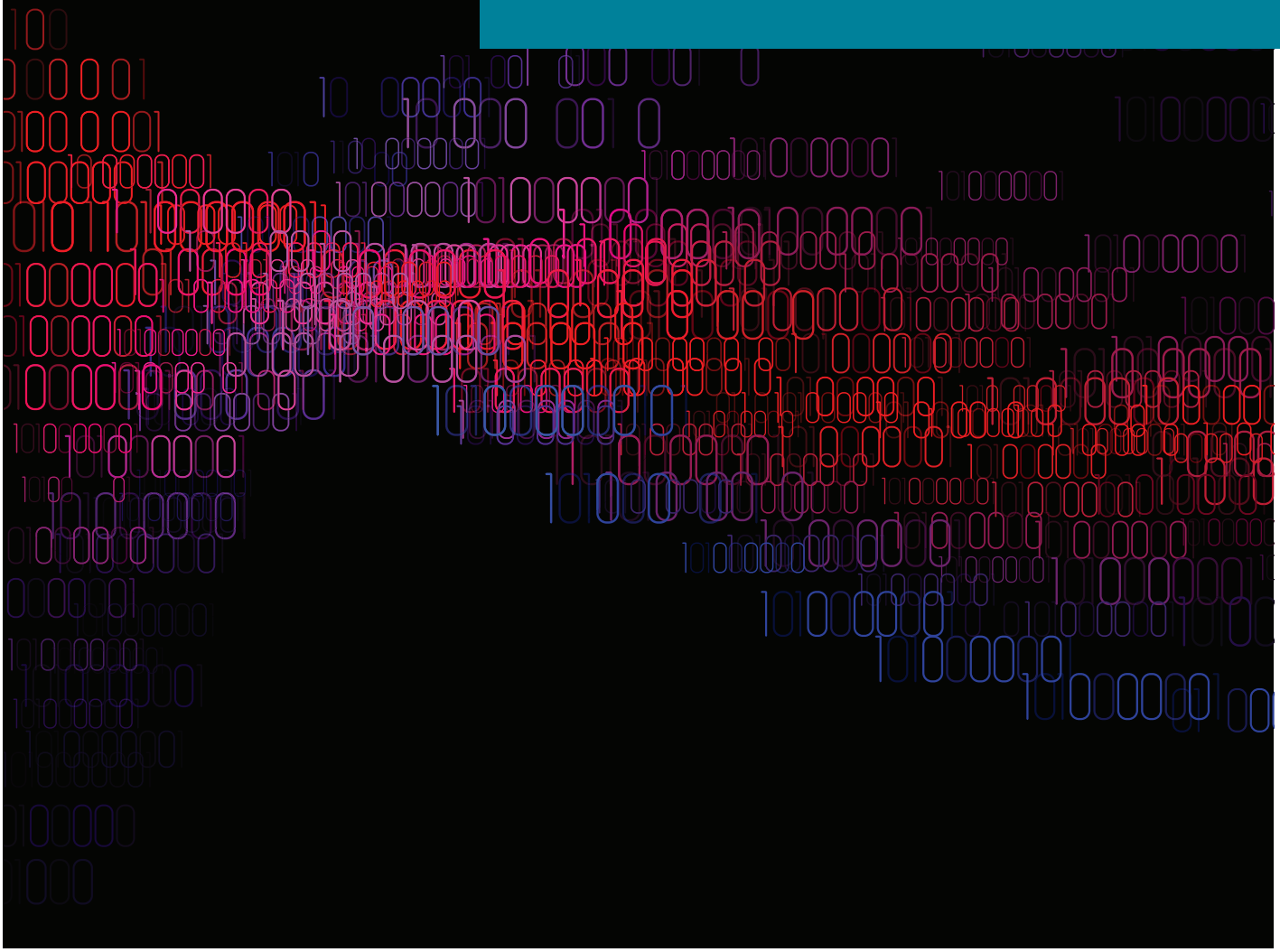
ETH zürich

Risk Center Block Course - Fall 2020

Cyber Risk

How to Navigate through the Digital Transformation

Annoucement - Final Program to Follow



ETH RISK CENTER

Cyber Risk: How to Navigate Through the Digital Transformation

As today's technology landscape is evolving at an increasing pace, it forces businesses, individuals and society to adapt to stay competitive. At the same time, the risk to businesses from cyber-attacks is growing just as fast, if not faster. Staying on top of today's cyber risks means understanding the key drivers of cyber risk and remaining aware of the latest trends, research, solutions and best practices.

About the Course
This course offers an integrative perspective on cyber risks, allowing understanding the essential developments, the principles, the challenges as well as the limitations and the state of practice in cyber risk from the technological, economic, legal, and insurance perspective. It focuses on tangible takeaways that cyber risk stakeholders in all organizations can use to strengthen their resilience.

The course provides an interdisciplinary overview, guidance, and understanding of the mechanisms in cyber security to guide decision making and risk management in business and society.

Setting: Virtual and Class Room
Given uncertainty about the situation on restrictions around Covid - 19 the course will be set up as a hybrid version integrating online sessions and 2-3 joint session for discussion and networking at ETH Zürich.

Who should attend?
The course is designed to appeal to a wide audience of decision makers and to provide actionable information for all professionals that play a role in managing cyber risk in their organization—not just IT professionals. Participants will work and exchange, in small groups, with some of the best researchers, experts, and practitioners working at the cutting edge of their discipline, and among peers. It allows communicating risks and solutions in terms that will resonate with corporate and institutional stakeholders.

Structure
The course is structured as 10-12 Evening Sessions (18:00 to 20:00) on Thursdays from October 2020 to January 2021.

Part 1: Managing Cyber Risk, Threats and Actors
Part 2: Theoretical Foundations of Cyber Security
(Panel Discussion and Apero at ETH)
Part 3: Cyber Resilience and System Architectures
Part 4: How to Model and Mitigate Cyber Risk
(Panel Discussion and Apero at ETH)
Part 5: Critical Infrastructure Protection
Part 6: Cyber Risk Governance
(Final Panel Discussion and Apero at ETH)

Language
The course language is English

Number of Participants
The number of participants is limited to 20.

Course Fee and Registration
CHF 2 000.-
Registration deadline is October 14, 2020

Certificate
Participants get a certificate for confirmation of participation.

Venue
ETH Main Building
Rämistrasse 101

Course Coordination

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Executive Director, ETH Risk Center
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Course Contents

From Fortress to Resilience

Resilience is based on the premise that protective, preventive, and deterrent safeguards will not always be effective (i.e. successful in keeping out a threat) and therefore will require response, recovery, and restorative action.

Technical Fundamentals of Information Security
This part will cover examples of today's challenges and problems related to information security from a more technical point of view. We look at a set of principles/ guidelines to build secure systems and look at examples of cryptographic primitives that provide the building blocks for many security critical applications.

Key Drivers, Supply Chain Security and Internet of Things
This latest digital innovation is not the first to prompt critical questions regarding security and safety. These changes are disruptive, like the introduction of electricity, railroads, or airplanes. What are the cyber threats and defenses for society and the industry in the digital age? What are the lessons we can draw from other industries or history?

System integration
The integration of large IT systems to their functions and scope has become critical to any organisation. However, the notion that this integration offers an easier and safer control over the whole range of information of their operations is very often false. Security measures require an increasing effort to keep up with the complex IT systems implemented across all the organization's scope. Maintenance procedures are now done autonomously and have to continuously be updated to address problems and efficiency measures referring to a very large variety of assets and operations. There is a noticeable loss of control and visibility end-to-end, so a need for a data driven approach to many needed approximations has arisen. Whether these systems lead to internal or external integration (enterprise systems or supply chain systems), can impose new security challenges because of newly created vulnerability points. Because of the complexity and loss of visibility, the estimation of the system's exposure to threats is not an easy task.

Critical Infrastructures: Energy System
In a digitized world, the resilience of the energy system must be reunderstood: On the one hand, digitization offers opportunities for greater resilience, on the other hand, vulnerability can increase. This is all the more difficult because the energy system itself is already expecting disruptive developments. In particular, minimising the risk of a major blackouts is of the utmost importance. How can this be achieved? What are the root sources for the new risks? What are some technical, organizational and regulatory measures with which these risks can be countered?

Critical Infrastructures: Financial Institutions
Financial institutions, as they maintain the most mature cyber security programs, have moved beyond the "predict and protect" paradigm to a concept of cyber resilience in order to face the broad range of interdependent disruptive hazards. In addition, the digital assets are also under constant attack by cyber criminals all around the world. This combination of unprecedented level of attacks has a very significant impact on the most robust organisations. This part will unpack these challenges and response methodologies, covering also cognitive and social dimensions as an integral part of cyber resilience.

Mitigating Cyber Risk
As IT security practitioners are becoming more and more pessimistic than in past years about their ability to protect their organizations from cyber security threats, the cyber insurance market has continued to grow and evolve. However, thus far actuaries have approached cyber risk with caution. In these two sessions, cyber risk experts will share their insights on the state of the cyber insurance market and the evolution of underwriting cyber risk, including information about the limitations of cyber insurance

Cyber Risk Governance and Organisation
An organisation's board is responsible for the framework of standards, processes and activities that, together, secure the organisation, also against cyber risk. This course will close with a panel discussion on how to cope with the cyber threat landscape from a governance perspective.

Speakers and Dates (Draft)

Lecturers:

ETH
Prof. Paul Embrechts
Risk Center and RiskLab (D-MATH)
Stefan Frei
Lecturer Cyber Security D-MTEC, Cyber Security Principal, Accenture Cyber Defense
Patrick Schaller
Senior Scientist, Cyber Security Group, D-INFK
Prof. Martin Wörter
KOF Swiss Economic Institute, D-MTEC

External (tbc)
Reto Amsler,
ALSEC Cyber Security Consulting AG
Anne Bouverot,
Anne B Advisors
Michel Dacorogna
Partner by Prime Re Solutions, Zug, Switzerland
Michael Dargan
Group CIO, UBS
Neal Pollard,
Group CISO, UBS
Roger Halbheer,
Chief Security Advisor, Microsoft EMEA
Prof. Marie Kratz
ESSCE Paris
Christoph Mayer
OFFIS,Institute for Information Technology, Germany
Marc Ruef
Security Expert, scip AG,

more to be announced

Dates and Times (tbc)

Session 1: Oct 22, 2020 6pm to 8pm (at ETH)

Session 2: Oct 29, 2020 6pm to 8pm

Session 3: Nov 5, 2020 6pm to 8pm

Session 4: Nov 12, 2020 6pm to 8pm

Session 5: Nov 19, 2020 6pm to 8pm

Session 6: Nov 26, 2020 6pm to 8pm (at ETH)

Session 7: Dec 3, 2020 6pm to 8pm

Session 8: Dec 10, 2020 6pm to 8pm

Session 9: Jan 7, 2021 6pm to 8pm

Session 10: Jan 14, 2021 6pm to 8pm

Session 11: Jan 21, 2021 6pm to 8pm (at ETH)

Further Details and Registration: Link

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