EPFL

COM-402 | **Information security and privacy**

Ford Bryan Alexander

Cursus	Sem.	Type
Computer science	MA2	Opt.
SC master EPFL	MA2, MA4	Opt.

Language of teaching	English
Credits	6
Session	Summer
Semester	Spring
Exam	Written
Workload	180h
Weeks	14
Hours	**4 weekly**
Courses	2 weekly
Project	2 weekly
Number of positions	

Summary

This course will provide a broad overview of information security and privacy topics, with the primary goal of giving students the knowledge and tools they will need "in the field" in order to deal with the security/privacy challenges they are likely to encounter in today's "Big Data" world.

Content

• Data protection concepts: access control, encryption, compartmentalization
• Intrusion/hacking techniques, intrusion detection, advanced persistent threats
• Practices for management of personally identifying information
• Operational security practices and failures
• Data anonymization and de-anonymization techniques
• Information flow control
• Differential privacy
• Cryptographic tools for data security and privacy
• Policy, ethics, and legal considerations

Keywords

security, privacy, protection, intrusion, anonymization, cryptography

Learning Prerequisites

Required courses

Basic programming course or comparable demonstration of basic programming skills

Learning Outcomes

By the end of the course, the student must be able to:

• Understand the most important classes of information security/privacy risks in today's â##Big Dataâ## environment

• Exercise a basic, critical set of â##best practicesâ## for handling sensitive information

• Exercise competent operational security practices in their home and professional lives

• Understand at overview level the key technical tools available for security/privacy protection

Expected student activities

Attending lectures, solving assigned problems and "hands-on" exercises, reading and demonstrating understanding of provided materials.