

# SECULO Erasmus Mundus program

Webinar for new students 2024-05-02

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# Teaching staff

- Department of Computer Science: 40+ professors and 400+ total staff
  - Informal research areas related to security and cloud computing:  
Secure systems, Cryptography, Software systems and technologies, Big data
- Key professors: Tuomas Aura, Chris Brzuska, Mario Di Francesco, Russell Lai, Janne Lindqvist, Linh Truong, Bo Zhao, Mikko Kiviharju
- Lecturers: Lachlan Gunn, Matti Siekkinen
- Research fellows: Mohit Sethi, Samuel Marchal
- Doctoral students
- Some courses given by other groups and external teachers

# SECCLLO learning outcomes

- What should graduates know?
  - Broad knowledge of cloud and mobile computing technology, internet, ubiquitous computing, distributed applications and services
  - Developing new online applications, networking solutions and service platforms; practical product development skills
  - Designing secure systems from threat analysis to design and implementation
  - Following and utilizing scientific research
- Engineering degree, R&D focus
- What kind of work can the graduates do?
  - The most demanding industry jobs in R&D, software development, DevOps, expert roles, consulting, management, sales, as entrepreneur
  - Doctoral studies

# Required courses

- [CS-C3130](#) **Information Security** (5 ECTS)
- [CS-E4190](#) **Cloud Software and Systems** (5 ECTS)
- [CS-E4340](#) **Cryptography** (5 ECTS)
- [CS-E4770](#) **Designing and Building Scalable Web Applications** (5 ECTS)
- [CS-E4000](#) **Seminar in Computer Science** (5 ECTS)
- [LC-1310](#) **Academic Communication for MSc Students** (3 ECTS)
- CS-E4360 **Summer school** (2-5 ECTS)
- **Internship** (2-5 ECTS)

# Optional courses

[CS-C3170](#) Web Software Development 5 ECTS

[CS-E4265](#) Multimedia Systems 5 ECTS

[CS-E4640](#) Big Data Platforms 5 ECTS

[CS-E4580](#) Programming Parallel Computers 5 ECTS

[CS-E3190](#) Principles of Algorithmic Techniques 5 ECTS

[ELEC-E7321](#) Advanced Networking 5 ECTS

[CS-E4760](#) Platform Security 5 ECTS

[CS-E4300](#) Network Security 5 ECTS

[CS-E4350](#) Security Engineering 5 ECTS

[CS-E4370](#) Applied Cryptography 5 ECTS

[CS-E4380](#) Special Course: Advanced Cryptography 5 ECTS

[CS-E4330](#) Special Course in Information Security 5 ECTS

[CS-C3240](#) Machine Learning 5 ECTS

[CS-E4650](#) Methods of Data Mining 5 ECTS

[CS-E4003](#) Special Assignment in Computer Science 1-10 ECTS

[CS-E5480](#) Digital Ethics 3-5 ECTS

[TU-C2091](#) Starting Up 1 ECTS

# Personalizing your study plan

- **Too easy mandatory courses? Overlap with BSc studies?**
  - Replace with a more advanced course
  - Become a teaching assistant
- **Choose the right level of programming courses based on your experience**
  - Students have quite varying level of software development experience
- **Adjust your personal workload depending on how it is going**
  - Take additional courses if the studies feel easy (after the first semester)
- Other master-level courses can be approved to the study plan
- **Be brave and challenge yourself.** Learning difficult topics is more important getting perfect grades

# Master's thesis

- Spring semester of the 2nd year, usually in the exit country
- For the thesis project, most students find paid work in the **industry** or in a **research project** at the university or another institute
- Primarily supervised by the exit university, co-supervised by Aalto