

New student info 2019:

CCIS Security and Cloud Computing major
SECCLO Erasmus Mundus 1st year students
ITMO double degree students

Tuomas Aura
Aalto University

Security students at Aalto

**Computer, Communication and
Information Sciences (CCIS)**

master program

Security and Cloud Computing

major (**Security**)

including **ITMO** double degree – 2nd year

Computer Science major

Communications Engineering major

SECCLO Erasmus Mundus program

- 1st-year students

EIT Master school

CS Bachelor students

Teaching staff

- Affiliated (informal) research areas:
Secure systems, Software systems and technologies
- Key professors
 - Tuomas Aura, Chris Brzuska, Mario Di Francesco, Janne Lindqvist, Hong-Linh Truong, Antti Ylä-Jääski
- 40+ other CS professors
- Adjunct professors, lecturers and postdocs
 - Markku Antikainen, Jan-Erik Ekberg, Lachlan Gunn, Samuel Marchal, Jukka Nurminen, Mohit Sethi, Matti Siekkinen, Yu Xiao
- Doctoral students and other Master's students
- Some courses given by other groups and external teachers

Learning outcomes

- What should graduates know?
 - Broad knowledge of cloud and mobile computing technology, Internet and ubiquitous computing, applications, services
 - Ability to develop new communication network solutions and service platforms, including practical product development skills
 - Ability to build secure systems from threat analysis to design and implementation
 - Ability to follow and utilize scientific research
- What kind of work can graduates do?
 - The most demanding industry jobs in industrial R&D, expert roles, management, sales, entrepreneur
 - PhD studies

Required courses

Code	Name	ECTS	Period	
<u>CS-C3130</u>	Information Security	5	I	
<u>CS-E4100</u>	Mobile Cloud Computing	5	I-II	
<u>CS-E4640</u>	Big Data Platforms	5	I-II	
<u>CS-E4320</u>	Cryptography and Data Security	5	I-II	*
<u>CS-C3170</u>	Web Software Development	5	II-III	
<u>CS-E4000</u>	Seminar in Computer Science	5	III-V	
<u>LC-1310</u>	Academic Communication for MSc Students	3	III-IV	*

*) required for Erasmus Mundus students, recommended for all

Optional courses

Any Master-level CS and math courses approved in your personal study plan (stricter for Erasmus Mundus students)

Recommended courses:

<u>CS-E3210</u>	Machine Learning: Basic Principles	5	I-II
<u>CS-E4600</u>	Algorithmic Methods of Data Mining	5	I-II
<u>CS-E4140</u>	Applications and Services in Internet	5	I-II
<u>CS-E4300</u>	Network Security	5	II
<u>CS-E4320</u>	Cryptography and Data Security	5	I-II
<u>CS-E4160</u>	Laboratory Works in Networking and Security	5-10	III-IV
<u>CS-E4310</u>	Mobile Systems Security	5	III-IV
<u>ELEC-E7320</u>	Internet Protocols	5	III-IV
<u>MS-E1687</u>	Advanced Topics in Cryptography	5	III-IV
<u>CS-E4002</u>	Special Course in Computer Science	1-10	agreed with teacher
<u>CS-E4003</u>	Special Assignment in Computer Science	1-10	agreed with teacher
<u>CS-E4330</u>	Special Course in Information Security	5	varies

Personalizing your study plan

- **Too easy mandatory courses? Similar to your BSc studies?** Replace with more advanced courses
 - *Web software development* for most of you!
- *Information Security* seems too basic? We are hiring **teaching assistants** (here today)
- **Any MSc-level course** can be approved
 - Tell me about your personal learning goals
 - What is a **seminar, special course** or **special assignment**?
- **Minor subject** in technology, business, arts?
 - Sorry, only for those who stay two years at Aalto

Curriculum questions

- Always check MyCourses and the latest curriculum online:

<https://into.aalto.fi/display/enccis/Security+and+Cloud+Computing+%28Security%29+2018-2020>
http://secclo.aalto.fi/en/programme/first_year_curriculum/

- What if the course is cancelled?
- Study credits for **work experience**

Master's thesis

- For the MSc thesis project, most students find work **in the industry** or in a **research project** at the university or another institute
- Recommended length of the thesis project is **six months**
- Usually **spring semester of the 2nd year**
 - Start looking for a project in October
 - ITMO students should prepare early