

Security and Network Engineering
UvA Master's Week Presentation

SNE Homepage: `www.os3.nl`
UvA Study Guide: `www.tinyurl.com/sne-uva`

Security & Network Engineering

SNE History

- Master of Science, started in 2003 and running for 20+ years
- Originally called "System and Network Administration"
  In Dutch: "Systeem- en NetwerkBeheer"

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$$Network\ Engineering \cup Security\ Engineering$$

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- We will give you some practical information about these studies, to help you decide if this is the right Master's program for you
- You will get to ask questions to the SNE staff and students

Network Engineering

- What is Network Engineering?

Network Engineering

- What is Network Engineering? The design, implementation, management and troubleshooting of any networked system.



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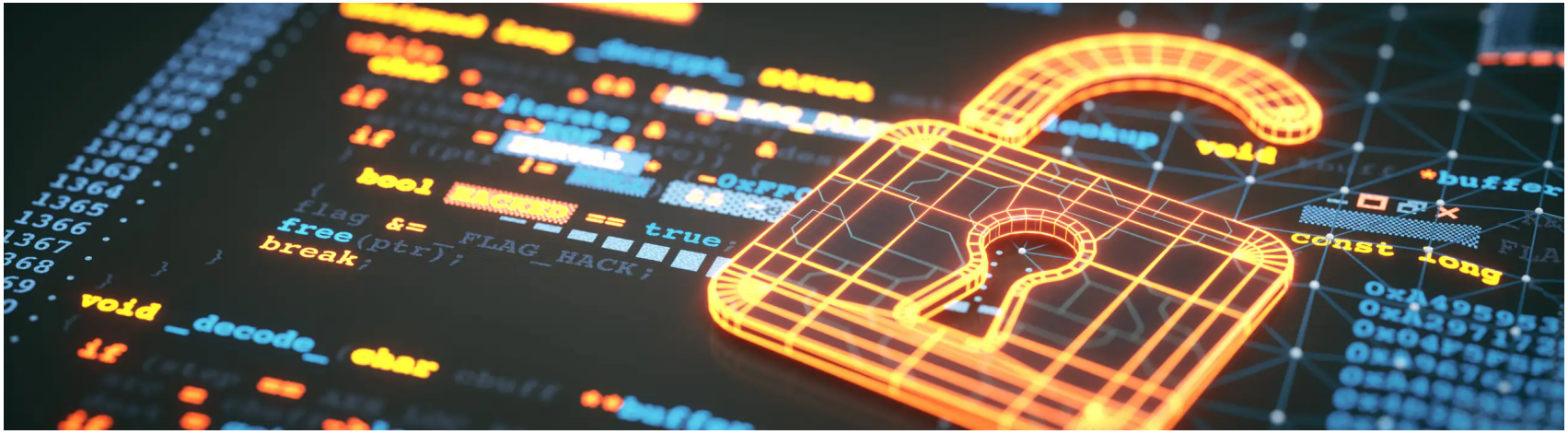
- Computer Networks form the entire backbone of our digital society
- The SNE MSc aims to teach you how to tackle the complexity of the modern, world-spanning communication infrastructure

Security Engineering

- What is Security Engineering?

Security Engineering

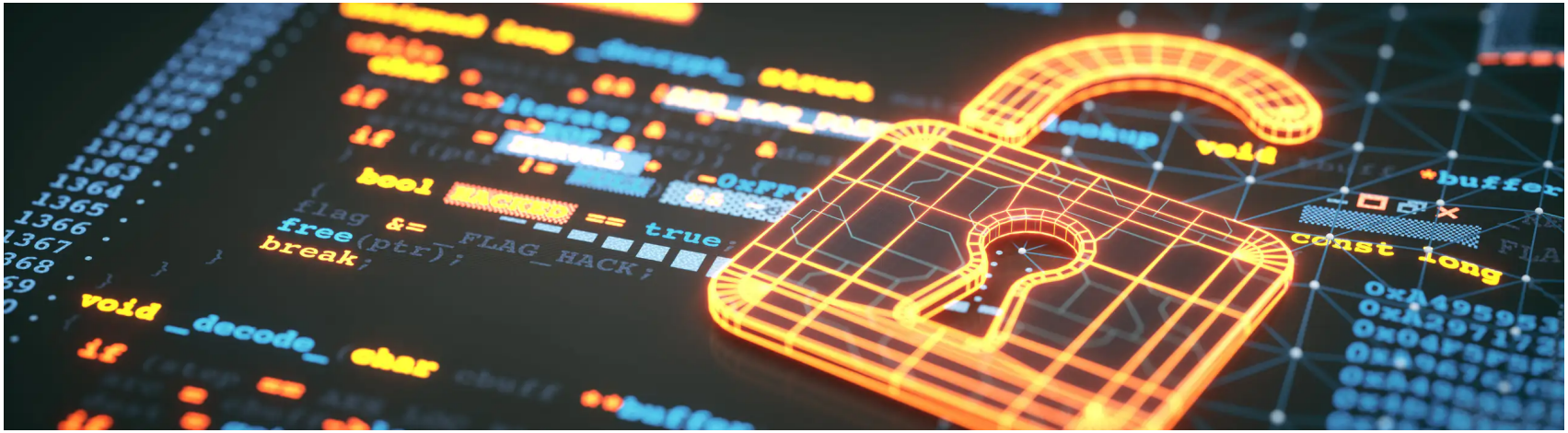
- What is Security Engineering? One question, multiple answers!



- Secure network communications? Mathematical cryptography? Software vulnerabilities? Hardware tampering? Data privacy?

Security Engineering

- What is Security Engineering? One question, multiple answers!



- Secure network communications? Mathematical cryptography? Software vulnerabilities? Hardware tampering? Data privacy?
- Computer Security is a very fragmented subject, yet SNE aims to teach you how to navigate this turbulent field

Joining the SNE Master's



"Of course we'll make a decision ...
once we have considered the 5243 factors."

Prospective Students

Whom should consider joining the SNE?

- Bachelors of Science in Computer/Computing Science, Informatics or related field (WO)
- Bachelors of Technical Informatics or related field (Polytechnic HBO)

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- The study language (courses, assignments, exams, overall communication) is English

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- Open for national and international students
- The study language (courses, assignments, exams, overall communication) is English

- Intake procedure (written assessment + interview) is required for all students
- You need to be well-motivated for this study program!

SNE Focus

What is the main focus of the SNE?

- Middle ground between abstract science and professional application
- SNE combines theory and practice with a strong focus on the applied and the professional world

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- Academic side: abstraction power, scientific knowledge, research skills
- Professional side: innovative solutions, presentation skills, collaborative abilities

Study Location

Where will I study?

- You will study in person, in the Science Park 904, located in East Amsterdam
- SNE has several physical, dedicated classrooms in the Science Park
- The location is easy to reach, even outside Amsterdam, via the 'Amsterdam Science Park' train station



Study Location

Where will I study?

- You will spend most time in the lecture (main) room and the lab rooms

Study Location

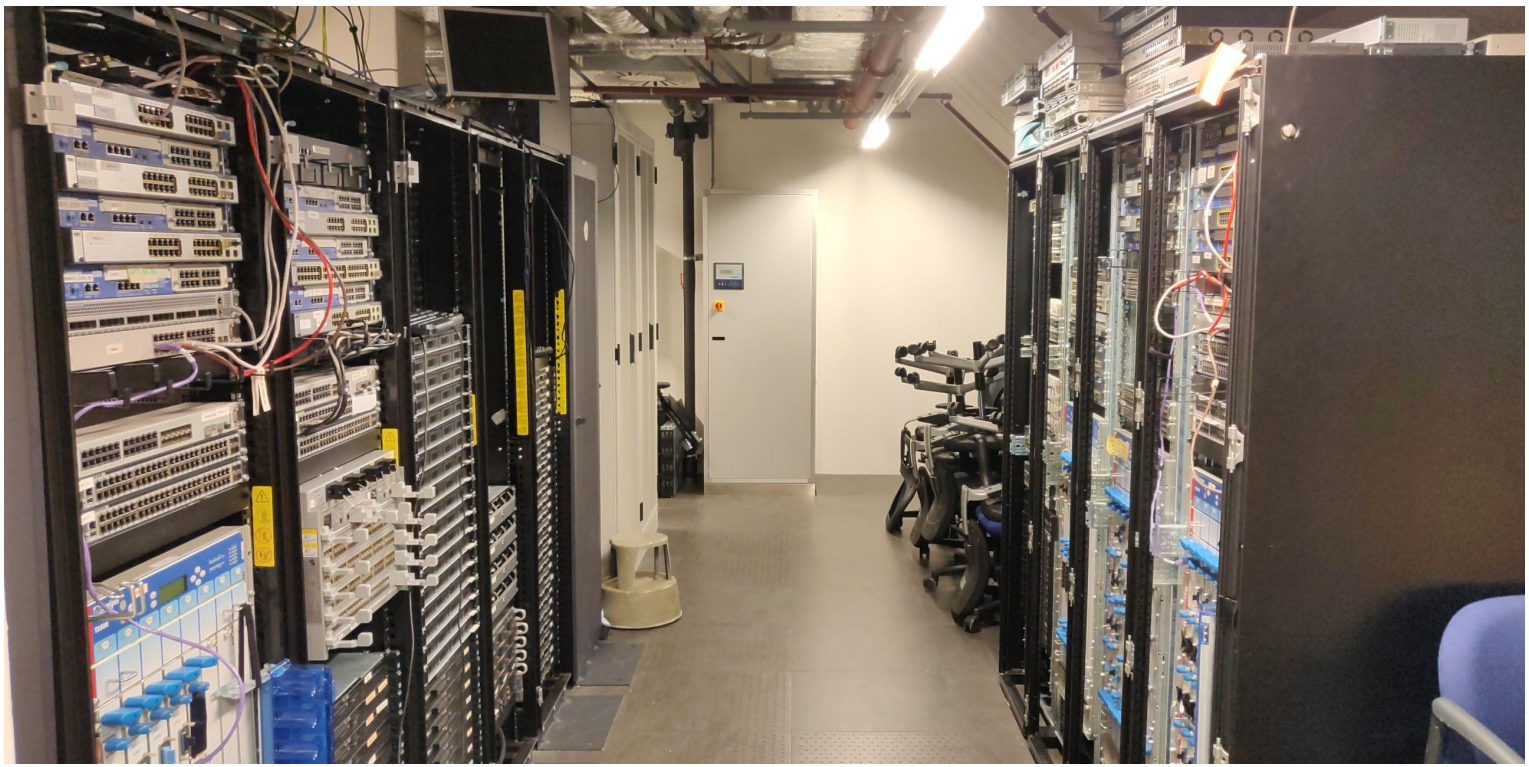
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- You will access the server room which houses servers and network devices and is directly connected to SURFnet [`www.surf.nl/en`]

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- You will spend most time in the lecture (main) room and the lab rooms
- You will access the server room which houses servers and network devices and is directly connected to SURFnet [`www.surf.nl/en`]
- All students get their own desk, desktop PC and server to use for lectures, lab assignments and research projects



Server room

Quality Assurance

Is SNE a good study program?

- SNE is a small-scale study program (approx. 50 students per year). This offers us the ability to pay more attention to education.

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Quality Assurance

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- We provide a good personal workspace (desk, computer, server) to all students
- SNE has been accredited by the NVAO (Accreditation Organisation of the Netherlands and Flanders) [`www.nvao.net/en`]

Research & Development

Is interesting research carried out in SNE?

- The SNE Master's program is backed by the SNE Research Cluster with multiple active researchers
  - SNE-MNS: MultiScale Networked Systems [`www.mns-research.nl`]
  - SNE-PCS: Parallel Computing Systems [`www.pcs-research.nl`]
  - SNE-CCI: Complex Cyber-Infrastructures [`www.cci-research.nl`]

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- Several ongoing Research Grants and collaborations
  - Intelligent for networks and 6G communications [`www.desire6g.eu`], [`www.futurenetworkservices.nl`]
  - NWO Gravitation for CyberSecurity [`www.tinyurl.com/zk-research-grant`]
  - Responsible Internet [`www.catrin.nl`]

Study Duration

How long is SNE and can I study part-time?

- If you decide to study full-time then the SNE is an intense 1-year study program

Study Duration

How long is SNE and can I study part-time?

- If you decide to study full-time then the SNE is an intense 1-year study program
- If you decide to study part-time then SNE can be completed in 2 years

Career Prospects

Will I be able to find a job?

- We offer very good career perspectives
- Companies are actively scouting for SNE graduates
- The Ministry of Finance and the Hague Security Delta have identified a gap in the current job market for IT and security professionals and expect increased demand in the future [`www.tinyurl.com/hsd-report`]

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Which organizations could hire me?

- Networking organizations like AMS-IX and SURF
- Security companies like Fox-IT, Secura and Riscure/Keysight
- Research organizations like UvA and NLnetLabs, RIPE NCC
- Government institutes like NCSC
- Consulting firms like KPMG, Deloitte, SUE
- Many others

SNE Curriculum

What will I study in SNE?

- Total of 7 courses, each with 6 ECTS
- The courses include examinations and group projects
- A 3-month-long research thesis for 18 ECTS

$$7 * 6 + 18 = 60 \text{ ECTS}$$

- You must decide if you study full-time (1 year) or part-time (2-years)

Weekly Schedule

How does a typical week look in SNE for a full-timer?

- **SNE has mandatory presence**
- Approx. 24 fixed work hours
  i.e. 4 days times 6 hours per day
- 24 fixed work hours
  i.e. 8 hours of lectures per week plus 16 hours of labs per week
- Lectures and Labs from 10:00 until 16:00 on Monday, Tuesday, Thursday, Friday with mandatory presence

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- Finally, SNE also includes educational (and fun!) excursions to various places like Hack.lu in Luxembourg, NOKIA/Bell labs in Belgium and others

Admissions Procedure

How can I apply to the SNE?

- **Important links:**
  `www.os3.nl/info/admission`
  `www.tinyurl.com/sne-admission`
- **Important deadlines:**
  Non-EU/EEA students: January 31st
  NL/EU/EEA students: June 30th
- Register in Studielink at `www.studielink.nl`
- Receive your UvA-net ID and further instructions by email (check your spam folder)
- Go to `www.datanose.nl`, log in with your UvA-net ID and upload all necessary documents
- For admissions contact Niels Sijm – info@os3.nl

Admissions Procedure

What is the admission procedure?

- Consists of 5 exams and an interview
- The admission depends on exam scores and interview
- Exams are organized either in our Amsterdam lab or online
- Interview is scheduled after passing all exams
- Three exam dates in total (but up to 1 retake)

Admissions Procedure

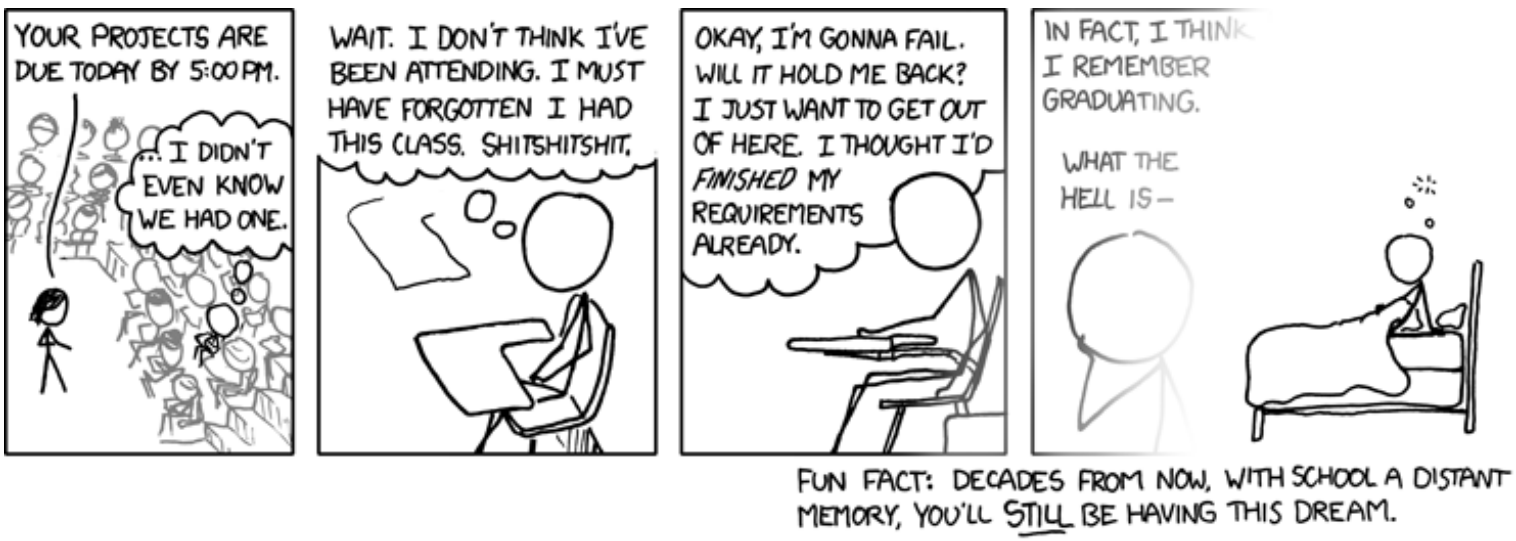
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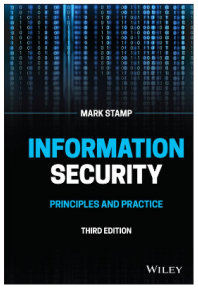
- TCP/IP (multiple choice, 45 mins)
- Unix (multiple choice, 45 mins)
- Mathematics (multiple choice/fill the blanks, 1 hour)
- Python (programming exercises, 1 hour)
- Text Analysis (summary & questions, 1.5 hours)

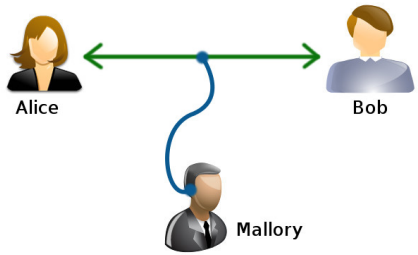
SNE Courses


YOUR PROJECTS ARE DUE TODAY BY 5:00 PM.
I DIDN'T EVEN KNOW WE HAD ONE.
WAIT. I DON'T THINK I'VE BEEN ATTENDING. I MUST HAVE FORGOTTEN I HAD THIS CLASS. SHITSHITSHIT.
OKAY, I'M GONNA FAIL. WILL IT HOLD ME BACK? I JUST WANT TO GET OUT OF HERE. I THOUGHT I'D FINISHED MY REQUIREMENTS ALREADY.
IN FACT, I THINK I REMEMBER GRADUATING.
WHAT THE HELL IS—
FUN FACT: DECADES FROM NOW, WITH SCHOOL A DISTANT MEMORY, YOU'LL STILL BE HAVING THIS DREAM.

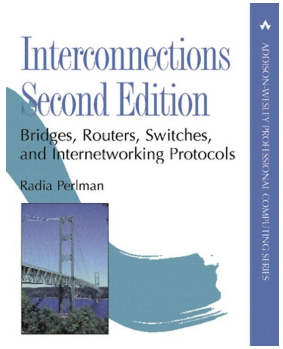
SNE Courses

- **SSN:** Security of Systems and Networks
- Jaap van Ginkel – jaap.vanginkel@os3.nl
- Zhuoran Liu – z.liu@uva.nl



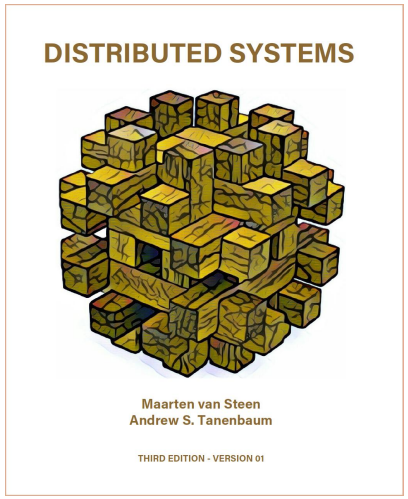


- **INR:** InterNetworking and Routing
- Marios Avgeris – m.avgeris@uva.nl



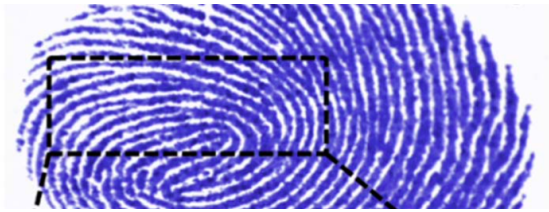
SNE Courses

- **LS:** Large Systems
- Shashikant Ilager – s.s.ilager@uva.nl

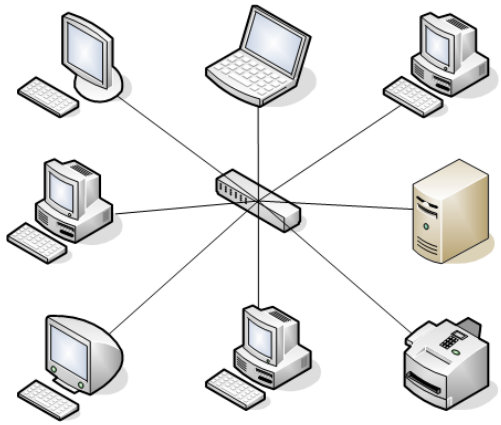


SNE Courses

- **CCF:** CyberCrime and Forensics
- Jaap van Ginkel – jaap.vanginkel@os3.nl



- **AN:** Advanced Networking
- Chrysa Papagianni – c.papagianni@uva.nl

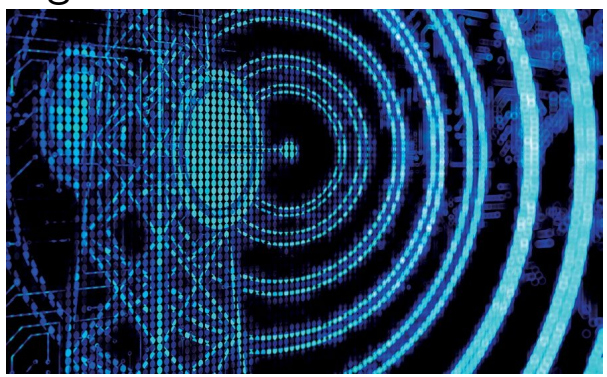


SNE Courses

- **OT:** Offensive Technologies
- Kostas Papagiannopoulos – k.papagiannopoulos@uva.nl
- Zhuoran Liu – z.liu@uva.nl

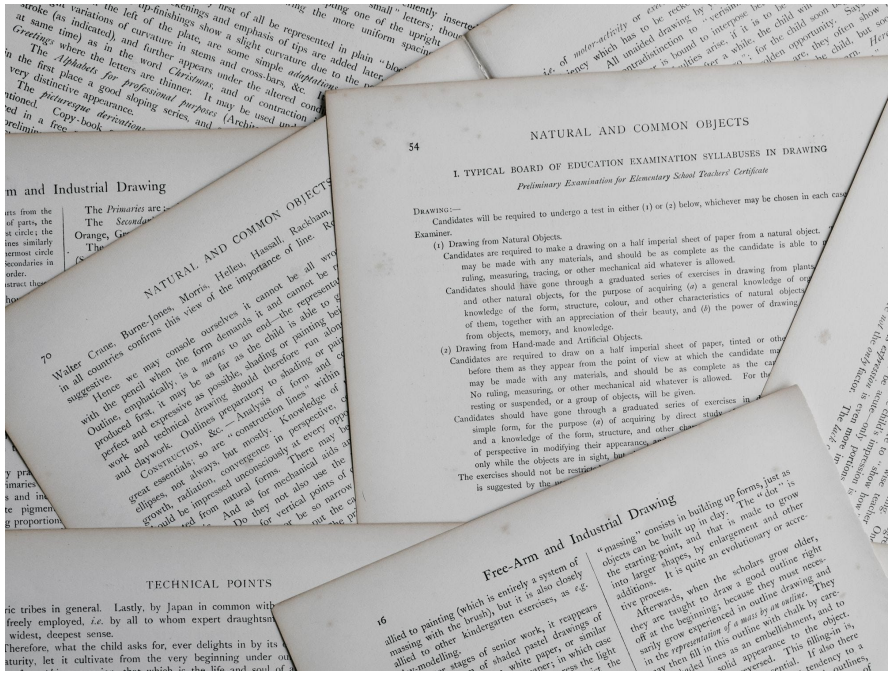


- **AS:** Advanced Security
- Jaap van Ginkel – jaap.vanginkel@os3.nl



SNE Courses

- 3-month Research Thesis Project
- Internal or External Supervisor – noclue@whoishere.xyz



SNE Staff

Feel free to contact us with questions: info@os3.nl
Feel free to drop by UvA!

- Program Director: Ana Oprescu
- Program Developer: Kostas Papagiannopoulos
- Systems Engineer & Intake Examiner: Niels Sijm
- Student Representative: Marta Musso – marta.musso@os3.nl

- Marios Avgeris
- Jaap van Ginkel
- Paola Grosso
- Shashikant Ilager
- Zhuoran Liu
- Chrysa Papagianni
- ... and several invited lecturers

- Finally, let's meet each other! Tell us about yourself, interests and studies. Why are you interested in joining SNE?