



Aalto University
School of Science

Major in Software and Service Engineering: Orientation Week Event

The SSE Faculty
August 27th 2024

Schedule

Time	Subject
12:15	Welcome, Prof. Casper Lassenius, Marko Nieminen
12:20	Introduction of the SSE faculty and new students
12:40	Overview of the SSE major, (Prof. Casper Lassenius), Marko Nieminen
13:00	Software Engineering Track, (Prof. Fabian Fagerholm), Jari Vanhanen
13:30	Coffee Break
14:00	Service Design and Engineering Track, Prof. Marko Nieminen, Mika Nieminen
14:30	Portfolio in SSE course, Jari Vanhanen
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Participants

- Where did you do your B.Sc.?
- Why did you choose SSE?

- Aaryan Nayar
- Ahmed Al-Tuwaijari
- Albert Kiple
- Anita Tabulovich
- Chi Nguyen
- Christopher Romano
- Elli Mattila
- Esa Valkama
- Hilma Kokkonieniemi
- Ilya Nekrasov
- Jonna Määttä
- Juhana Tamminen
- Kabir Bissessar

- Laurens van der Helm
 - Meeri Manninen
 - Onni Suomalainen
 - Oskari Kaipainen
 - Rita Miklán
 - Ruslan Potekhin
 - Sepehr Kianiangolafshani
 - Sofia Sievinen
 - Sonja Tervola
 - Viivi Alitalo
 - Jasmin Jänkä
 - Mikael Laine
 - Ernesti Komulainen
 - Alpo Remes
- ...and any other students present**

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Why Software and Service Engineering

- Megatrends
 - Digitalization of products and services is pervasive throughout industries and society
 - New business models emerge that might revolutionize and/or disrupt existing businesses
 - Lots of money to be made 😊
 - The Internet of things (IoT), will have a significant impact on everything from business to life in general
 - Healthcare
 - New services
 - Artificial Intelligence and Machine learning – it is mostly software!



Peculiarities of the SSE major

- Problems are typically real-world design problems that show characteristics of so-called wicked problems
 - Often ill-defined
 - There are many, possibly equally valuable candidate solutions
 - There are often no “perfect” or single “correct” solution
 - Different stakeholders might have conflicting opinions about the problem or solution
 - You cannot know the solution until you have developed it
 - Sometimes understanding the problem is more difficult than building the solution
- You will learn by doing as well as by reading
 - Significant amount of practical project work
 - Often with real-world customers



Why Software and Service Engineering?

- The world runs on software
 - Economies
 - Societies
 - Health and well-being
- It is crucial that we know how to effectively and efficiently build systems and services based on software

Software and Service Engineering: Tracks

Software
engineering

Service design
and engineering

Courses are based on research done in close collaboration with companies.

CS-E4920 Portfolio in Software and Service Engineering



Casper
Lassenius



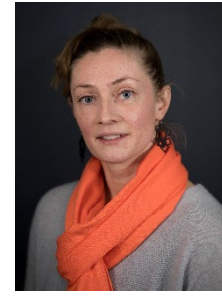
Fabian
Fagerholm



Marjo
Kauppinen



Marko
Nieminen



Johanna
Viitanen

Objectives

- You learn how to
 - Design
 - Develop
 - Manage

... digital products and services that

 - Create value
 - Satisfy user needs and wants

... within modern organizations

Network

- WhatsApp, Telegram
- Volunteer?
 - Do it now! 😊

- Get access to our corridor

[How to get an access token and access rights | Aalto University](#)

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Programming vs Software Engineering

Programming

Mainly individual activity

Main activity: developing code

Specialises in coding

Focus on the software construction part of the software life-cycle

Can include aspects of software engineering

Software engineering

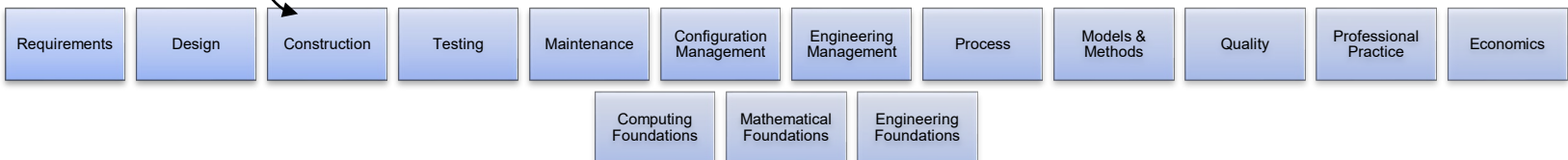
Mainly team activity

Main activity: developing system

Specialises in designing and implementing a whole system

Focus on more than one part of the software life-cycle

Includes aspects of programming



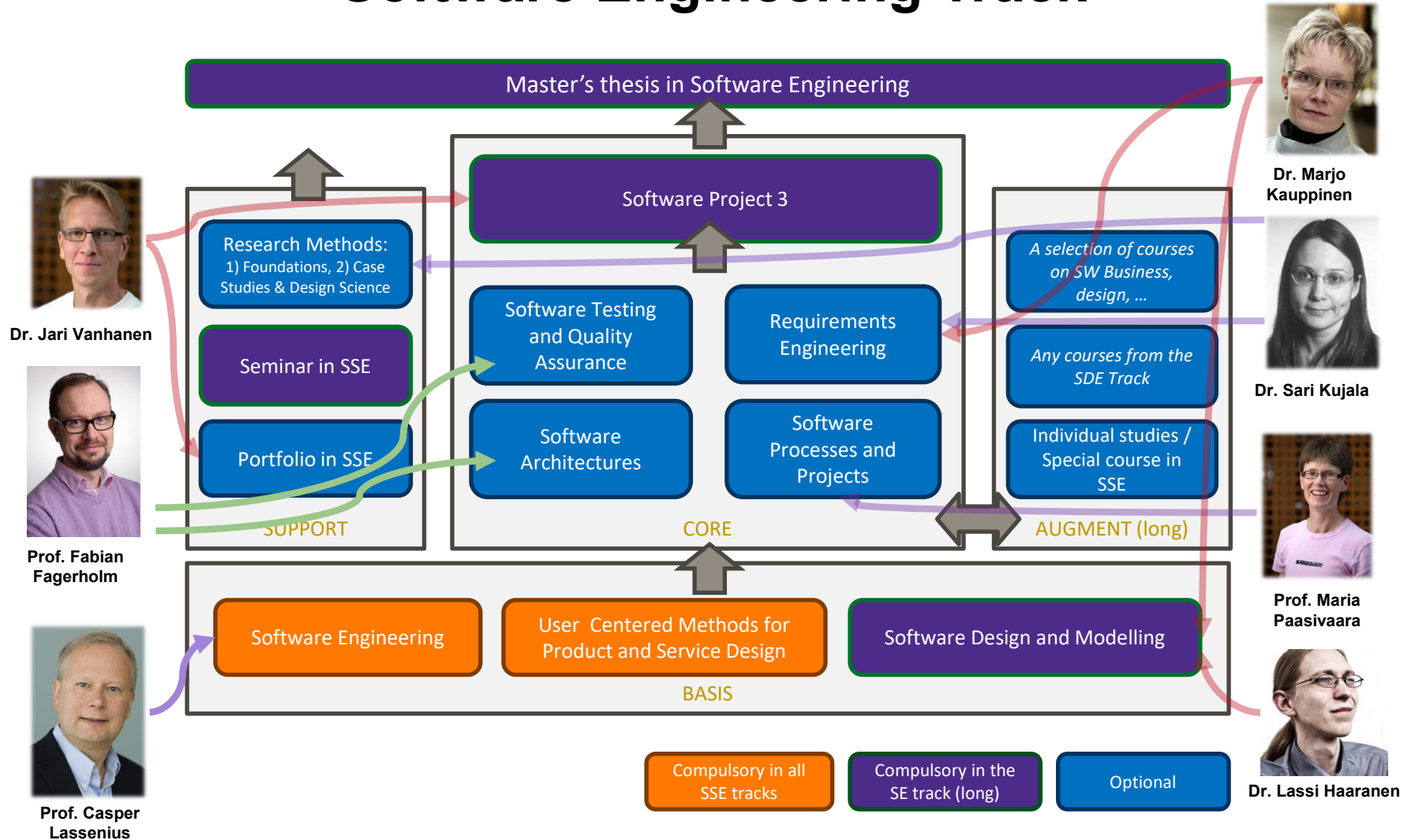
Software Engineering Track

- Focuses on understanding software development in professional contexts
 - Working in and managing teams and organizations
 - Software engineering activities and related methods
 - Requirements engineering
 - Specification and Design (architectures, low-level)
 - Implementation
 - Testing and quality assurance
 - Deployment
 - Traditional and modern approaches
 - Waterfall, Agile, Scrum, XP, Lean, Continuous SE
 - Working with real customers

Why Software Engineering

- There is a large need for software engineering experts in industry
- Most problems in software projects are due to problems related to SE rather than, e.g. technologies
- Many positions, both management, and expert (e.g. architect) are well paid
- Gives a good basis for software entrepreneurship

Software Engineering Track



<https://www.aalto.fi/en/programmes/masters-programme-in-computer-communication-and-information-sciences/curriculum-2024-2026#51-software-and-service-engineering--sse>

Outcome

- Typical SE roles
 - Software developer
 - Software development team leader
 - Tester
 - Architect
 - Quality/test manager
 - Process developer
 - Project manager
 - Product manager
 - Higher level manager
 - Entrepreneur
- Master's theses
 - Typically done in industry
 - Empirical, action research
 - Process improvement
 - Technology introduction
 - (Different kinds of experiments)
 - Data gathering methods
 - Interviews
 - Questionnaires
 - Product / process data
 - ...
 - To prepare for the thesis
 - Research Methods in Software and Service Engineering
 - Seminars to practice reading and writing scientific text
 - Talk about ideas with potential supervisors early
 - Don't worry, others have made it, too ;-)



Questions?

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Coffee Break!



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Student Questions

- How much hands-on project work is included in the SSE major?
- How are the various methods of software servicing applied? And how can they be made more efficient?
- Can you think of any courses in particular (major, minor, or elective) that are crucial for a professional that wants to actively code software while also being able to easily navigate all phases of the software development lifecycle (customer requirements, business processes, project management, deployment, testing) from the perspective of a technical expert?
- "How to choose between the 2022-2024 and 2024-2026 curriculum and what are the differences? For example if you take 2022-2024 the fullstack course is included in the major courses whilst in the 2024-2026 curriculum it is not.
- Is it possible to choose MUO-courses into the elective studies for example "Interaction Design - User Interfaces" -course or "Interaction Design - User Experience" -course
- If you take the short major can you just take courses from that slot of from the long major side as well? “
- What are the most researched areas within the field currently?