

Master's Programme in Mathematics and Operations Research

Programme info 2025

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**Aalto University
School of Science**

Topics

- **MathOR student services**
- **Degree structure**
- **Personal Study Plan (HOPS)**
- **Other reminders**

MathOR Student Services

Susanna Ylhävuori, Planning Officer

- Personal study plan (HOPS)
- Credit transfer
- If you don't know who to contact

Paavo Nisula, Coordinator

- Graduation process
- Thesis process



How to contact Student Services?



Emailing studentservices@aalto.fi or directly to a person
firstname.lastname@aalto.fi



Book an (online or on campus)
appointment in MyStudies:

<https://mystudies.aalto.fi/s/>



Student Services are in CS-
Building, Konemiehentie 2

Please note that we work in hybrid-mode, so
always book an appointment!



Our contact information in the
Student guide:

[https://www.aalto.fi/en/programmes/masters-
programme-in-mathematics-and-operations-
research/contact](https://www.aalto.fi/en/programmes/masters-programme-in-mathematics-and-operations-research/contact)



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Study-related information systems at Aalto

- **Student guide:** <https://www.aalto.fi/en/student-guide>
You can find all the information available about your studies and the university guidelines here.
- **Sisu (Student information system):** <https://sisu.aalto.fi/>
Personal study plan (HOPS), enrolling for courses, completed courses, Transcript of Records and Certificate of Student Status.
- **MyCourses:** <https://mycourses.aalto.fi/>
Tool for everyday course work and communication. It also contains course descriptions.
- **MyStudies:** <https://mystudies.aalto.fi/s/>
Book appointment with Aalto staff (e.g., student services, study psychologists)

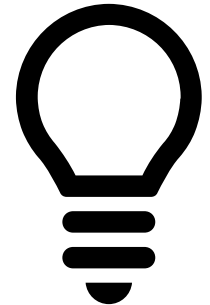
Degree structure and HOPS (Study plan)

Master of Science (Technology) degree (MSc)

- Degree: 120 ECTS credits exactly or as close as possible.
- Courses that exceed 120 credits will not appear on the diploma, but they are visible on your transcript.
- Two years of full-time studies.

Majors

- **Applied Mathematics**
 - Responsible professor: Lasse Leskelä
- **Mathematics**
 - Responsible professor: Kalle Kytölä
- **Systems and Operations Research**
 - Responsible professor: Philine Schiewe
 - Note: only compact major!



Student guide of your programme > Curriculum

<https://www.aalto.fi/en/programmes/masters-programme-in-mathematics-and-operations-research/curriculum-2024-2026>

A! Sign of Change

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You can visit the Student Guide also via the shortlink student.aalto.fi

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Intended learning outcomes

Total	Major*	Master's thesis	Minor for compact major	Elective studies**
120	40–65	30	20–25	25–30
ECTS	ECTS	ECTS	ECTS	ECTS

* Compact major 40–45 ECTS. Long major 60–65 ECTS. Systems and Operations Research is only offered as a compact major.

** Contains compulsory language studies.

You can find course descriptions in [Sisu](#). In your study plan, choose the course and click the course code or [search courses by code or name](#). Learning environments are found in [MyCourses](#) through search or after registration in "My own courses".

Here you can see the period of the course and the recommended year of the master's studies (1st or 2nd year)

Example of the curriculum:

Structure

Applied Mathematics can be taken either as a compact major (40–45 ECTS) or a long major (60–65 ECTS).

Code	Course name	ECTS	Period/year
Compulsory studies (20 ECTS)			
These core courses are compulsory unless already included in previous studies. Students who have studied similar content at another university should contact the responsible professor of the major to discuss their personal study plan.			
MS-E1600	Probability Theory	5	I/1
MS-E1651	Numerical Matrix Computations	5	I/1
MS-E2112	Multivariate Statistical Analysis	5	III–IV/1
MS-E2122	Nonlinear Optimization	5	I–II/2
Optional studies (20–45 ECTS)			
Select sufficiently many courses from the following categories to complete a total of 40–45 credits for a compact major or 60–65 credits for a long major.			
Computational mathematics			

Compact major

**Major
40-45 ECTS**

**Elective
studies
25-30
ECTS**

**Minor
20-25 ECTS**

**Thesis
30 ECTS**

Major studies 40-45 ECTS

Minor 20-25 ECTS

- You can choose a minor from Aalto University, other Finnish universities or universities abroad

Elective studies 25-30 ECTS

- Minor studies
- Individual courses of your interest
- Possible mandatory language studies (+3 ECTS) if you completed your bachelor's degree outside of Finland

Master's thesis 30 ECTS

- Topic related to the major studies

Long major

*Not available for the major Systems and Operations Research

**Major
60-65 ECTS**

**Elective
studies
25-30 ECTS**

**Thesis
30 ECTS**

Major studies 60-65 ECTS

Elective studies 25-30 ECTS

- Minor studies
- Individual courses of your interest
- Possible mandatory language studies (+3 ECTS) if you completed your bachelor's degree outside of Finland

Master's thesis 30 ECTS

- Topic related to the major studies

Choosing your major

- When you first draft your HOPS in Sisu, you will choose your major.
- Your major will be confirmed to your study right by Student Services.
- It is possible to change your major within the Mathematics and Operations Research programme by contacting Planning officer Susanna Ylhävuori.



Choose a minor (for compact major)

- Scope of minor 20-25 ECTS
- Aalto offers a wide range of minors. You can search minors by theme, level and target group in Student Guide: <https://www.aalto.fi/en/minors#/>
- You can also study a minor at another university in Finland or abroad
- Please note that some minors require an application while others are open for all Aalto students, see [Instructions for applying for ARTS Minors](#)
- By choosing your minor early you have more options for balancing your workload (and to avoid delaying graduation).
- If you have a compact major, it is possible to include an elective minor in addition to the mandatory minor
- If you have a long major, you can include a minor in your elective studies

Studying abroad

- **Student exchange is warmly recommended**
 - Recommended semester 2nd year autumn
 - SCI exchange contact person Mari Dagnall
 - Next application period in January 2026
 - Courses can be included in the SCI3041 International Studies Minor or elective studies, or in some cases in major
 - **Note!** If you plan to go for an exchange, leave room for these studies in your degree
- **Practical training abroad - possibility for a scholarship**
 - <https://www.aalto.fi/en/other-studies/tech-international-internship>



Master's thesis

- Independently completed thesis work, 30 credits
- Usually completed in 2nd year spring
- You can start planning your thesis at any point of your studies
- Master's thesis topic is agreed with a professor/university lecturer from the subject field of your major
- More information about the thesis in the Student guide of your programme > Thesis
- SCI thesis process represented in MyCourses:
<https://mycourses.aalto.fi/course/view.php?id=41665#section-0>



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Elective studies 25-30 ECTS

For elective studies, you can...

- select additional courses from the major
- select individual courses from other programmes at Aalto University
- participate in an international student exchange programme
 - Note! If you plan to go for an exchange, leave room for these studies in your electives/minor.
- select a second minor (if it fits into your degree)
- compulsory language studies are included in elective studies
- foreign students are encouraged to take Finnish courses

Elective studies 25-30 ECTS

- It is possible to include 1-10 ECTS (SCI.trai) gained from work experience in the master's degree, see:
 - <https://mycourses.aalto.fi/course/view.php?id=49121>
 - **Note! Only work experience gained after 1.8.2025 can be accepted.**



Elective Studies 25-30 ECTS

- All courses are not open to all Aalto students!
 - Mainly applies to Aalto ARTS courses
- As a student, you are responsible for checking whether there are any prerequisites for taking a course.
- In practice, a maximum limit on the number of participants may limit course access.
- Information on limits to course size and on the order of priority is available on the course description pages.

Elective Studies 25-30 ECTS

“Elective studies must be university level studies that fulfill the degree requirements and, in general, studies that are offered as degree studies at the university in question. Universities also offer courses that are targeted for a larger audience. The suitability of these studies is evaluated taking into consideration the learning outcomes of the degree that the courses are planned to be included in.”

→ If you plan to complete Massive Open Online Courses (MOOCs) or FITech-courses, please contact the planning officer beforehand.

Mandatory language studies

Bachelor's degree from Finland: no language studies needed

Bachelor's degree from outside of Finland: language studies required

**Language of your previous studies:
Other than Finnish / Swedish**

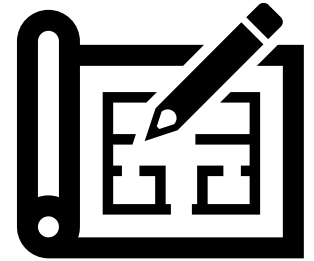
- ➔ 3 ECTS of language studies (including both oral (o) and written (w) proficiency)
OR alternatively complete an elementary course in Finnish or in Swedish (3 ECTS).

**Language of your previous studies:
Finnish / Swedish**

- ➔ 3 ECTS of language studies (including both oral (o) and written (w) proficiency)
- ➔ 2 ECTS Swedish/Finnish as second national language (toinen kotimainen kieli)

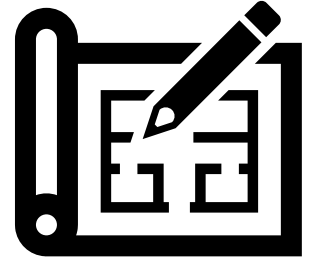
+ your thesis abstract needs to have a language check

HOPS



- **H**enkilökohtainen **OP**into**S**uunnitelma
= Personal Study Plan
- Your degree = courses in your HOPS
- **The first HOPS does not need to be the final one**
- Some parts of HOPS require approval, and those parts are followed by “Approval required”
 - If you are not yet completely sure about your course choices, you can apply for approval in Sisu later also
 - Don’t apply for approval in Sisu, if you haven’t done all the selections for that part
- Remember to keep your HOPS up-to-date!

HOPS



Your study plan does not have to be completely complete yet. The most important thing is that you have selected the courses you want to complete in period I! 😊



HOPS

- **First familiarize yourself with the curriculum in Student Guide:**
 - <https://www.aalto.fi/en/programmes/masters-programme-in-mathematics-and-operations-research/curriculum-2024-2026>
- **Check also “Planning your studies” –page:**
 - <https://www.aalto.fi/en/programmes/masters-programme-in-mathematics-and-operations-research/planning-your-studies>
- **Sisu-HOPS –instructions:**
 - <https://www.aalto.fi/en/applications-instructions-and-guidelines/sisu-instructions-front-page>



If you need help...

- with HOPS or Sisu etc. in general, contact the programme's planning officer.
- with the content of your major, contact the professor in charge of your major.
- If you are not sure who to contact, contact the programme's planning officer or studentservices@aalto.fi.
- **Note!** The message feature in Sisu is not in use. It is best to contact us by email.

Other reminders



- Follow your Aalto e-mail!
- Read the student newsletter SCUUPPI
- Contact other Aalto services if needed, for example Starting Point of Wellbeing
 - <https://www.aalto.fi/en/support-for-studying/contact-information-for-learning-services>

Wellbeing and accessibility



The Starting Point of Wellbeing offers students advice and guidance on services related to wellbeing:
<https://www.aalto.fi/en/study-at-aalto/starting-point-of-wellbeing>



Accessibility in studying: <https://www.aalto.fi/en/aalto-university/accessible-aalto>

Individual study arrangements

- Do you have challenges in learning due to a learning difficulty or health reasons? As an Aalto student you have a right to individual study arrangements.
- Individual study arrangements may be granted due, e.g.:
 - dyslexia
 - ADHD
 - physical illness
 - mental health condition
 - sensory impairment
- Individual study arrangements may take different form, e.g.:
 - extra time in examinations
 - adjusted schedules
 - use of computers or other tools or
- If learning difficulties or accessibility concerns have caused study challenges for you in the past, book a meeting in MyStudies for Päivi Koivunen, the contact person in SCI related to accessibility matters and individual study arrangements.
- Discussing your needs for support will help you get off to a smooth start with your studies.

SCI Student & Alumni Networking Event

27.11.2025



- For first-year International Master's Students at School of Science
- Meet and mingle with alumni graduated from SCI, create networks, learn new things and find interesting career paths in Finland
- Time: Thursday 27th November, at 16:30 - 18:30
- Place: CS Building (Konemiehentie 2)
- Registration opens in September



See more 

Any questions?



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