# How to apply

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These instructions are based on the admission criteria to the Doctoral Programme in Science for year 2022.

## Eligibility of applicants

The general eligibility criteria for higher education are defined in the Universities Act (558/2009, section 37) and in the Aalto University Student Admissions Criteria for 2022.

Eligible applicants for studies leading to a licentiate or doctoral degree from the Doctoral Programme in Science will have completed:

- a relevant master’s degree awarded by a university;
- a relevant master’s degree awarded by a university of applied sciences; or
- a relevant study programme abroad which in the awarding country gives eligibility for the corresponding level of higher education.

### Policy on the recognition of degrees awarded outside Finland

Applicants holding a degree earned abroad are eligible for doctoral studies provided their degree gives them eligibility for corresponding higher education in the awarding country. As a rule, degrees earned abroad are recognised at Aalto University provided that they have required studies of at least four years, including a thesis similar to the master’s thesis, and that such studies in the view of the school equip the student with the skills and knowledge needed to pursue doctoral studies at the school. The precondition for the recognition of European degrees is that the degree is a university degree combination earned in accordance with the Bologna Process principles (3+2 years).

Applicants with a master’s degree in a relevant field earned at a Finnish university of applied sciences are reviewed on a case-by-case basis for their aptitude to pursue doctoral studies. If the school deems the applicant with a relevant master’s degree from a university of applied sciences as having the potential to complete the doctoral degree, the applicant will be assigned sufficient supplementary studies to allow him or her to begin the doctoral/licentiate studies. The scope of the supplementary studies may not, however, exceed 60 ECTS credits. If the scope of the supplementary studies exceeds this maximum, the applicant is advised to complete a master’s degree at the university level before applying for a right to pursue the doctoral degree.

When assessing the students’ potential for successful doctoral studies and determining their need for supplementary studies, the school will consider the scope of master’s degrees at the student’s university of applied sciences (in Finland, such degrees are of 60–90 cr, less than the 120-credit scope of master’s degrees at Finnish universities such as Aalto).

Applicants with a prior degree earned abroad and corresponding to a relevant Finnish master’s degree from a university of applied sciences are treated equally to those with master’s degree from a Finnish university of applied sciences.

## Evaluation criteria

The academic evaluation of the applicant is performed by the supervising professor in charge of the research field sought by the applicant. The Doctoral Programme Committee also evaluates the applicants. In addition, all applicants to the field of industrial engineering and management are evaluated by the Department of Industrial Engineering and Management.

The evaluation of applicants takes into account the following criteria:

### Contents of the previous degree(s):

1. sufficient basic information concerning the research field applied for; this information is collected from e.g. the major studies or advanced studies that were included in the applicant’s master’s degree
2. sufficient basic information to support the applicant’s ability to carry out the research work and writing for the doctoral thesis.

The School of Science may set prerequisite studies for the applicant to complete by e.g., taking master’s level courses.

**Academic performance:**

1. The applicant received a minimum grade of at least 4 (on a scale of 1–5) for the master's thesis.
2. an average grade of 3.5 (on a scale of 1–5) for the master's degree courses (excluding the thesis), OR
3. if the applicant earned his/her master's degree in accordance with the degree regulations of 1995 or earlier (when Finnish bachelor's and master's degree were not pursued separately), he or she received an average grade of at least 3.0 (scale 1–5) for the major at the master's level.

Exceptions to the grade limits mentioned above may be made only for special reasons set forth in a well-founded written statement by the supervising professor. In such cases, the Doctoral Programme will request a statement from the supervising professor.

**Other evaluation criteria:**

1. the quality of the applicant's university degree and its status internationally
2. the applicant’s potential as a researcher; previous experience in research research-related work experience, conference presentations, journal articles, etc.
3. relevance of the research topic: to ensure genuine research interest by the supervising professor and adequate resources to advise the student in the research of the department’s focus area
4. the research proposal: the theoretical and practical innovative value of the topic; the feasibility of the research proposal (its quality, planned methods, etc.)
5. time management and resources: the research proposal and the time the student has available for the doctoral studies over the next four (4) years
6. the supervising resources of the university in the research field
7. other grounds for admission presented by the applicant

**Applicant evaluations for the research field of industrial engineering and management:**

The Department of Industrial Engineering and Management and the supervising professor are responsible for evaluating applicants to the research field of industrial engineering and management. The Doctoral Programme will request an evaluation statement from the department. Preference will be given to applicants who have shown outstanding academic performance and are otherwise strongly qualified for doctoral studies in the department.

**Application periods**

- The Doctoral Programme in Science invites applications for doctoral studies continuously (applications will not be processed in July) on application deadlines decided by the Doctoral Programme Committee.
- Each application is processed in the next possible meeting of the Doctoral Programme Committee when all the required materials have been received. Only applications with all the required materials will be processed. Incomplete applications will be rejected, unless the missing materials are sent by the deadline given.

**Industrial Engineering and Management**

- Applications are invited from full-time applicants to the research field of Industrial Engineering and Management once a month (except for July). The deadlines for the applications are identical with those of other research fields in the programme.
- Applicants to part-time doctoral studies in the field of Industrial Engineering and Management may apply twice a year. The applications are processed in the Doctoral Programme Committee meetings of May and November.
  - March (1–21 March 2022)
  - September (1–19 September 2022)
  - More information on studying on a full-time or part-time basis

**Please note:**

From 1 August 2016 onwards the accepted applicants may accept only one study place leading to a higher education degree in Finland during one academic term (Universities Act 558/2009). Higher education degrees include bachelor’s, master’s, licentiate and doctoral degrees awarded by universities as well as degrees awarded by universities of applied sciences.

The academic terms run from 1 August to 31 December and 1 January to 31 July. The acceptance of a study place is binding and cannot be canceled. Even if the accepted applicant postpones the commencement of studies or gives up her/his right to study, s/he cannot accept another study place leading to a higher education degree starting the same academic term.

**Before submitting the application**

Before submitting the application, each applicant must contact a supervising professor who is responsible in their intended research field to doctoral studies and the supervision of the studies. Applicants are urged to ensure that their expertise and research interests are commensurate with the research group (and those of the supervising professor of their studies) that they apply to.

The most talented doctoral students may receive funding from their department, or they may fund their studies through projects or grants. The financing of studies should be discussed with the supervising professor.

For employment by research project: see and apply for the open positions at Aalto University.
Research fields and professors

The Doctoral Programme in Science comprises six research fields, which are based on the strong research traditions of the departments. The programme is a joint effort of the Department of Neuroscience and Biomedical Engineering, Department of Mathematics and Systems Analysis, Department of Applied Physics, Department of Computer Science, and Department of Industrial Engineering and Management.

The doctoral student chooses a research field when applying to the programme. The professor supervising the doctoral studies is agreed upon at the same time.

Research fields 2020-2022

<table>
<thead>
<tr>
<th>Code</th>
<th>Name of the research field</th>
<th>Supervising professors (in alphabetical order)</th>
<th>Research groups/areas of the field</th>
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| SCI023Z | Neurotiede ja lääketieteellinen teknikka  
Neuroscience and Biomedical Engineering  
Neurovetenskap och biomedicinsk teknik | Ala-Laurila, Petri  
Deny, Stéphane  
Ilmoniemi, Risto  
Jääskeläinen, Iiro  
Koskelainen, Ari  
Kozyk, Anton  
Nieminen, Heikki J.  
Palva, Matias  
Parkkonen, Lauri  
Renvall, Hanna  
Salmelin, Riitta  
| SCI006Z | Matematiikka ja tilastotiede  
Mathematics and Statistics  
Matematik och statistik  
(as of 1.8.2020) | Brzuska, Chris  
Engström, Alexander  
Hannukainen, Antti  
Hollant, Camilla  
Hyvönen, Nuutti  
Ilmonen, Pauliina  
Kinnunen, Juha  
Korte, Rikka  
Kytölä, Kalle  
Leskelä, Lasse  
Noferini, Vanni  
Peltola, Evelina  
Stenberg, Rolf | Research groups: [https://math.aalto.fi/en/research/](https://math.aalto.fi/en/research/) |
| F017Z | Systeemi- ja operaatiotutkimus  
Systems and Operations Research  
System- och operationsanalys  
(System- och operationsanalys) | Oliveira, Fabricio  
Salo, Ahti  
| SCI019Z | Teknillinen fysiikka  
Engineering Physics  
Teknisk fysik | Alava, Mikko  
Ala-Nissilä, Tapio  
van Dijken, Sebastiaan  
Finndt, Christian  
Foster, Adam  
Groth, Mathias  
Hakonen, Pertti  
Ikka, Olli  
Kalvola, Matti  
Kauppinen, Esko  
Lado, Jose  
Liljenroth, Peter  
Lind, Peter  
Mecior de Lépinay, Laure  
Pekola, Jukka  
Ras, Robin  
Rönkä, Patrick  
Ruskolainen, Janne  
Sand, Andrea  
Sillanpää, Mikko  
Timonen, Jaakko  
| SCI02 0Z       | Computer Science | Aura, Tuomas       | Research areas: https://www.aalto.fi/en/department-of-computer-science/research-areas |
|SCI02 2Z       | Industrial Engineering and Management  | Artto, Karlos | https://www.aalto.fi/department-of-industrial-engineering-and-management/research-groups |
| DataTeknik    |                     | Babbar, Rehit     |                                           |
|               |                     | Brzuska, Chris    |                                           |
|               |                     | Chalermsook, Parinya |                                       |
|               |                     | Deny, Stéphane    |                                           |
|               |                     | Di Francesco, Mario|                                       |
|               |                     | Garg, Vikas       |                                           |
|               |                     | Guckelsberger, Christian |                                      |
|               |                     | Holme, Petter     |                                           |
|               |                     | Hyvönen, Eero     |                                           |
|               |                     | Hämäläinen, Perttu|                                           |
|               |                     | Jiang, Shaofeng   |                                           |
|               |                     | Jung, Alexander   |                                           |
|               |                     | Kannala, Juho     |                                           |
|               |                     | Kasdi, Petari     |                                           |
|               |                     | Kasidi, Samuel    |                                           |
|               |                     | Kisselj-Bak, Sándor|                                     |
|               |                     | Kiívelä, Mikko    |                                           |
|               |                     | Kápyliá, Maarit   |                                           |
|               |                     | Lampinen, Jouko   |                                           |
|               |                     | Lassenius, Casper |                                           |
|               |                     | Lehtinen, Jaakko  |                                           |
|               |                     | Lindqvist, Janne  |                                           |
|               |                     | Lähdesmäki, Harri |                                           |
|               |                     | Malmi, Lauri      |                                           |
|               |                     | Mannila, Heikki   |                                           |
|               |                     | Marttinen, Pekka  |                                           |
|               |                     | Melier, Elisa     |                                           |
|               |                     | Niemelä, Ilkka    |                                           |
|               |                     | Nieminen, Marko   |                                           |
|               |                     | Orponen, Pekka    |                                           |
|               |                     | Paier, Alexandru  |                                           |
|               |                     | Rintanen, Jussi   |                                           |
|               |                     | Rousu, Juho       |                                           |
|               |                     | Saramäki, Jari    |                                           |
|               |                     | Savola, Lauri     |                                           |
|               |                     | Soinin, Arno      |                                           |
|               |                     | Suomela, Jukka    |                                           |
|               |                     | Takala, Tapio     |                                           |
|               |                     | Truong, Hong-Linh|                                           |
|               |                     | Uttø, Jara        |                                           |
|               |                     | Vehtari, Aki      |                                           |
|               |                     | Vuorimaa, Petri   |                                           |
|               |                     | Ylä-Jääski, Antti |                                           |

Application form and its appendices

Before submitting the application, each applicant must contact the professor in charge of his/her doctoral research field and supervising the doctoral thesis (supervising professor).

Application form

Electronic application form (Studyinfo.fi)

In the application form, please choose Doctoral Programme in Science as a study programme ("Add study programme").

Please read the instructions carefully before filling in the online application form. After reading the instructions and having all the documents ready, register to the online application system, fill in the application, attach all the required documents and send it.

Required appendices (scanned in pdf form) for all applicants:

1. Curriculum vitae (CV) including a list of publications and a proof of other scientific activity
2. Preliminary study plan, 40 ECTS of theoretical studies

3. Supervision plan

4. Research plan with an implementation schedule and funding plan. A research plan includes:

1. preliminary research plan
2. schedule for the research
3. possibilities for funding the research work (full-time applicants must have acquired funding for at least 6 months when applying; plans to apply for funding is not sufficient for a full-time status)
4. aim and impact of the research
5. methods and implementation of the scientific plan
6. researcher mobility during and after doctoral studies
7. publication plan

The study plan, research plan and supervision plan must all be approved and signed by both the applicant and the supervising professor. Upon his or her signature of the documents, the professor in charge of the research field agrees to act as the supervising professor of the applicant.

5. Copy of the holder page of your passport

Applicants with a master’s degree or education earned at another institution than Aalto University (or the preceding universities of Aalto University) shall also add the following documents in the electronic application form:

6. Master’s degree certificate and official transcript:
   • Certified copies of the Master’s degree certificate and official transcript (also paper copies by postal mail required*)
     • Master’s degree certificate
     • Official transcripts of records of all the courses included in the master’s degree
     • the Diploma Supplement in European countries
     • Official translations of these, if the originals are not in Finnish, Swedish, or English.

7. Abstract of Master’s thesis in English

8. Proof of proficiency in Finnish, Swedish or English. A successful applicant must have an excellent command of Finnish, Swedish, or English.
   • Please see Required language proficiency

9. A document confirming eligibility for doctoral studies, if needed (please see Eligibility for doctoral studies) with an official translation, if the original document is not in Finnish, Swedish or English.

Copies of degree certificates and a transcript of records must be certified by the awarding university or by a notary public. The copies must be taken from the original, official documents. A multiple-page certified copy must be certified on the front side of every page. Each page must have the certifying official’s original signature, printed name, ink stamp and date. Copies of officially certified copies are not accepted, the certifying official’s ink stamps and signatures must be original. A note declaring official copy status (such as a “True copy” stamp) is insufficient.

The translation is official if it has been done by the higher education institution that awarded the degree or by a certified translator (authorised translator). The translations must have the certified translator’s original ink stamp and signature.

The official translations must be either original or certified paper copies of the original documents. Unofficial copies of the translations are insufficient. The official translations must be accompanied by certified paper copies of the original documents in the original language. Translations by themselves are insufficient.

*Degrees awarded by a higher education institution outside Finland:

Send certified hard copies* of the required degree documents including official translations (listed above) to our office by postal mail (Kitta Peura, Doctoral Programme in Science, P O BOX 15500, 00076 AALTO) or come to show us the original documents in person to our office, Maatintie 8, room 1161.

Country specific instructions:

Applicants who have completed their master’s degree in: Australia, Bangladesh, Cameroon, Canada, China, Eritrea, Ethiopia, Ghana, India, Indonesia, Iran, Ireland, Kenya, Malaysia, Nepal, New Zealand, Nigeria, Pakistan, South Africa, Sudan, the United Kingdom or the United States:

Please note that the required degree documents including official translations need to be submitted according to the country-specific document requirements. Read the requirements on Country-specific requirements, and send the documents to the doctoral programme as required in the "Country specific requirements". If the documents need to be sent by postal mail, the address is: Kitta Peura, Doctoral Programme in Science, P O BOX 15500, 00076 AALTO. If the documents can be submitted electronically (they can be verified in an electronic system), send them by e-mail to doctoral-sci-elec@aalto.fi. Please DO NOT send the documents to the Admission Services as instructed in the country specific requirements webpage.
Required language proficiency

Successful applicants will have excellent skills in Finnish, Swedish, or English.

Proficiency in a national language of Finland (Finnish or Swedish) is demonstrated according to Appendix 1 ‘General recommendations for admissions criteria for Finnish universities: Demonstrating proficiency in a national language of Finland’, of the Aalto University Student Admissions Criteria 2022. English proficiency is demonstrated by language test.

The recognized English language tests and their minimum scores required for admission to doctoral studies are (Aalto University Admissions Criteria 2022):

1. IELTS (Academic): 6.5, and 5.5 for Writing;
2. TOEFL:
   a. IBT (Internet-based Test): 92, and 22 for the Writing section or
   b. iBT® Special Home Edition: 92 and for the writing section 22
   c. PDT (Paper-Delivered Test): Reading 22, Listening 22, and Writing 24
3. C1 Advanced, prev. Cambridge Certificate in Advanced English: A,B or C
4. C2 Proficiency, prev. Cambridge Certificate of Proficiency in English: A,B,C or Level C1
5. Pearson Test of English Academic (PTE A): 62, and 54 for writing
6. When it comes to the IELTS and TOEFL tests, the following online tests are also accepted: TOEFL iBT® Special Home Edition ja IELTS Indicator (Academic).

An English language test is not required in doctoral admissions of applicants who (Aalto University Admissions Criteria 2022):

1. earned a degree taught in Finnish, Swedish or English in a higher education institution in Finland.
2. earned a degree in an English-medium programme at a higher education institution in an EU/EEA country. The language of the degree must be stated unambiguously in the degree certificate or its appendix, or in the transcript of records or other official document issued by the awarding higher education institution.
3. earned an English-medium higher education degree in Australia, Canada, New Zealand, South Africa, Switzerland, the United Kingdom or the United States while residing in that country.
4. received his or her primary and secondary education in English in an EU/EEA country, Australia, Canada, New Zealand, South Africa, Switzerland, the United Kingdom or the United States.
5. has completed the Aalto Executive Education MBA, EMBA or DBA degree

A minimum of one half of the degree must be completed in a country and higher education institution that meets the requirements for exempting the student from taking an English test.

In addition, at the School of Science, an English language test is not required in doctoral admissions of applicants who have:

- been deemed by their supervising professor as having sufficient proficiency in English to pursue doctoral studies. The supervising professor must submit a written statement on the language skills of the applicant and the statement should be added in the application. If the applicant does not submit the statement together with other application documents the Doctoral Programme will request the statement from the supervising professor.

Submission of English test result

Only official reports of the language test are acceptable as proof of proficiency.

- For IELTS test, upload a copy of the official test report (as a PDF) to the application system. The test results are verified through the test administrator’s electronic verification service.
- TOEFL test results must be sent to Aalto University by the test administrator directly. Request your official score report to be sent from the test administrator to Aalto University reporting code 7364. Unofficial score reports sent by applicants will not be accepted. Test scores submitted with the Aalto University reporting code are checked for authenticity in the test administrator’s verification database. The scores are available within 1 to 2 weeks of sending the score report request.
- PTE test scores are sent via the test administrator’s electronic service. Applicants who took the PTE test must log in to their PTE account and send their results in the system to Aalto University. The test administrator notifies by email when the results have been sent to the university.
- For the C1 Advanced or C2 Proficiency language test, upload a PDF copy of the results report to the application system. The test-taker’s ID number (e.g. ABC1234567) and reference number (e.g. 1733U0034522) must be entered in the system. Test takers must be logged in to the language test system to submit their results to Aalto University. The results are verified electronically.

Granting the right to pursue doctoral studies
The Doctoral Programme Committee of the School of Science puts forth a proposal to the dean of the school on granting the rights to pursue a degree based on the recommendation of the supervising professor and possibly on that of the department. The dean then admits or rejects the applicants. All applicants are communicated the decision in writing.

Those admitted are granted a right to pursue a Doctor of Science (Technology) degree. All students of the Doctoral Programme have a right to pursue also a Licentiate of Science (Technology) degree, for which the normative duration is two years. All doctoral students are defined as either full-time or part-time students.

The right to pursue a degree will be valid only after the dean has granted the right and the applicant has accepted the offer of admission. The applicant has two weeks to accept the offer and cannot postpone the start of the right to pursue a degree.

Full-time and part-time studies

All doctoral students are defined as either full-time or part-time students. Doctoral students may not change their study mode by themselves, but it can be changed by application if necessary.

**Full-time doctoral students** plan their studies with the view to allowing the doctorate to be earned within four years of the right to pursue a doctoral degree being granted. Those applying for a full-time right to pursue a doctoral degree must have funding secured for at least 6 months (e.g. from the employer, or through project funding or a grant). Students employed outside Aalto University must append in their application a certificate issued by the employer proving their possibility to pursue full-time studies (i.e. a minimum of 80% of working hours may be used towards doctoral studies).

Those who do not meet the above criteria for full-time doctoral students are regarded as **part-time doctoral students**. This category includes, for instance, doctoral students who have a main occupation elsewhere than at the School of Science. Part-time doctoral students plan their studies so as to allow the doctoral degree to be completed in a maximum of eight years.

It is advisable to have a discussion with the part-time students on whether their research is closely connected to their work, and how their employer can support intensive doctoral studies alongside work.

Language of degree of a doctoral student

In their application to doctoral studies, the applicants define the language in which they will pursue their degree (language of degree). The possible languages of degree are Finnish, Swedish or English. Candidates who wish to write their doctoral thesis in Finnish or Swedish will have that language as the language of degree. Those who write their doctoral thesis in English, may choose English as their language of degree. The language of degree is approved by the Doctoral Programme Committee. On reasonable grounds, for instance, if the language of the doctoral thesis changes, the student may change his or her language of degree.

**Finnish or Swedish as a language of degree**

A doctoral student whose language of degree is Finnish or Swedish will get the degree certificate in Finnish or Swedish along with a translation in English. If the doctoral student writes his/her thesis in Finnish or Swedish, the language of the degree will always be Finnish or Swedish despite the earlier choice of language.

**English as a language of degree**

If the doctoral thesis or licentiate thesis is written in English, doctoral student can choose English as a language of degree.

If the doctoral student’s language of degree is English, he/she will get the degree certificate in English and in Finnish or Swedish. The language of degree will be mentioned in the diploma supplement, and in the degree certificate that two degree certificates have been given.