Bachelor's Programme in Mathematics

Kandidatprogram i matematik
180 credits

6KMAT

Valid from: 2027 Spring semester

Determined by

Board of Studies for Electrical Engineering, Physics and Mathematics

Date determined

2026-08-26

Revised by

Revision date

Registration number

LiU-2026-03538

Offered first time

Autumn semester 2007

Offered for the last time

Replaced by

Entry requirements

Degree in Swedish

Filosofie kandidatexamen med huvudområde Matematik

Degree in English

Degree of Bachelor of Science with a major in Mathematics

Curriculum

Semester 1 (Autumn 2027)

Course code	Course name	Credits	Level	Timetable module	ECV
Period 0					
TATB01	Foundation Course in Mathematics	6*	G1N	-	C
Period 1					
TATA24	Linear Algebra	8*	G1N	1	C
TATB01	Foundation Course in Mathematics	6*	G1N	4	C
TATB05	Mathematical Modeling	4*	G1N	2	C
TATB11	Discrete Mathematics	6*	G1N	2	C
TATA40	Perspectives on Mathematics	1*	G1N	-	V
Period 2					
TATA24	Linear Algebra	8*	G1N	4	C
TATA41	Calculus in One Variable 1	6	G1F	2	C
TATB05	Mathematical Modeling	4*	G1N	1	C
TATB11	Discrete Mathematics	6*	G1N	3	C
TATA40	Perspectives on Mathematics	1*	G1N	-	V

Semester 2 (Spring 2028)

Preliminary courses

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TANA81	Mathematics Project	4	G1N	4	C
TATA42	Calculus in One Variable 2	6	G1F	1	C
TDDE44	Introduction to Computer Programming	8*	G1N	2	C
TATA40	Perspectives on Mathematics	1*	G1N	-	V
TGTU96	Sustainable study situation	2*	G1N	-	V
Period 2					
TAMS14	Probability, First Course	4	G1F	4	C
TATA43	Calculus in Several Variables	8	G1F	2	C
TDDE44	Introduction to Computer Programming	8*	G1N	1	C
TATA40	Perspectives on Mathematics	1*	G1N	-	V
TGTU96	Sustainable study situation	2*	G1N	-	V

Semester 3 (Autumn 2028)

Preliminary courses

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TAMS24	Statistics, First Course	4	G2F	4	C
TANA22	Scientific Computing	8	G1F	3	C
TDDE71	Programming and Data Structures	8*	G2F	2	C
Period 2					
TATA45	Complex Analysis	6	G2F	1	C
TDDE71	Programming and Data Structures	8*	G2F	2	C

Semester 4 (Spring 2029)

Preliminary courses

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TAMS65	Mathematical Statistics, Second Course	6*	G2F	4	C
TAOP07	Introduction to Optimization	6	G1F	2	C
TATA53	Linear Algebra, Honours Course	6*	G2F	3	E
TATA54	Number Theory	6*	G2F	2	E
TATA64	Graph Theory	6*	A1N	2	E
THEN18	English	6*	G1N	4	E
TINT01	Introduction to Intercultural Competence	2	G1N	-	E
Period 2					
TAMS65	Mathematical Statistics, Second Course	6*	G2F	2	C
TAOP24	Optimization, Advanced Course	6	G2F	1	C
TGTU98	Mathematics, Science and Society	6	G1F	4	C
TATA53	Linear Algebra, Honours Course	6*	G2F	3	E
TATA54	Number Theory	6*	G2F	2	E
TATA64	Graph Theory	6*	A1N	2	E
THEN18	English	6*	G1N	4	E
TPPE24	Economic Analysis: Decision- and Financial Methodology	6	G2F	3	E
TPTE06	Industrial Placement	6	G2F	-	E

Specialisation: Applied Mathematics — Preliminary courses

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TATA53	Linear Algebra, Honours Course	6*	G2F	3	E
TATA54	Number Theory	6*	G2F	2	E
Period 2					
TATA53	Linear Algebra, Honours Course	6*	G2F	3	E
TATA54	Number Theory	6*	G2F	2	E

Specialisation: Mathematical Statistics for Machine Learning — Preliminary courses

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TATA53	Linear Algebra, Honours Course	6*	G2F	3	E
Period 2					
TATA53	Linear Algebra, Honours Course	6*	G2F	3	E

Specialisation: Mathematics — Preliminary courses

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TATA53	Linear Algebra, Honours Course	6*	G2F	3	E
TATA54	Number Theory	6*	G2F	2	E
Period 2					
TATA53	Linear Algebra, Honours Course	6*	G2F	3	E
TATA54	Number Theory	6*	G2F	2	E

Specialisation: Modelling and Optimization in Economics — Preliminary courses

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TATA53	Linear Algebra, Honours Course	6*	G2F	3	E
Period 2					
TATA53	Linear Algebra, Honours Course	6*	G2F	3	E
TPPE24	Economic Analysis: Decision- and Financial Methodology	6	G2F	3	E

Semester 5 (Autumn 2029)

Preliminary courses

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TATA49	Geometry with Applications	6*	G2F	4	C
TATA77	Fourier Analysis	6	G2F	1	C
TDDE73	Programming, Data Structures and Algorithms	6*	G2F	2	C
TAMS46	Probability Theory, Second Course	6	A1N	3	E
TATA55	Abstract Algebra	6*	G2F	3	E
TATA74	Differential Geometry	6*	G2F	3	E
TATA78	Complex Analysis, Second Course	6*	A1N	3	E
TDDC17	Artificial Intelligence	6	G2F	3	E
TPPE17	Corporate Finance	6	G2F	4	E
Period 2					
TAOP18	Supply Chain Optimization	6	A1F	1	
TATA49	Geometry with Applications	6*	G2F	4	C
TDDE73	Programming, Data Structures and Algorithms	6*	G2F	2	C
TAMS17	Statistical Theory, Advanced Course	6	A1N	1	E
TATA55	Abstract Algebra	6*	G2F	3	E
TATA74	Differential Geometry	6*	G2F	3	E
TATA78	Complex Analysis, Second Course	6*	A1N	3	E
TDDD72	Logic	6	G1F	2	E
TDDE01	Machine Learning	6	A1N	1	E
TSDT18	Signals and Systems	6	G2F	3	E
TSIT02	Computer Security	6	G2F	2	E
TSKS33	Complex Networks and Big Data	6	A1N	2	E

Specialisation: Applied Mathematics — Preliminary courses

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TATA55	Abstract Algebra	6*	G2F	3	E
Period 2					
TATA55	Abstract Algebra	6*	G2F	3	E
TSDT18	Signals and Systems	6	G2F	3	E
TSKS33	Complex Networks and Big Data	6	A1N	2	E

Specialisation: Mathematical Statistics for Machine Learning — Preliminary courses

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TATA55	Abstract Algebra	6*	G2F	3	E
TDDC17	Artificial Intelligence	6	G2F	3	E
Period 2					
TATA55	Abstract Algebra	6*	G2F	3	E
TDDE01	Machine Learning	6	A1N	1	E
TSKS33	Complex Networks and Big Data	6	A1N	2	E

Specialisation: Mathematics — Preliminary courses

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TATA55	Abstract Algebra	6*	G2F	3	E
Period 2					
TATA55	Abstract Algebra	6*	G2F	3	E

Specialisation: Modelling and Optimization in Economics — Preliminary courses

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TPPE17	Corporate Finance	6	G2F	4	E
Period 2					
TAOP18	Supply Chain Optimization	6	A1F	1	E

Semester 6 (Spring 2030)

Preliminary courses

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TGTU58	Communication	2	G2F	3	C
TATA27	Partial Differential Equations	6*	A1N	3	E
TATA66	Fourier and Wavelet Analysis	6*	A1N	3	E
TBMI26	Neural Networks and Learning Systems	6	A1N	2	E
TINT02	Intercultural Competence and Intercultural Communication, Continued Course	6*	G2F	-	E
TSKS10	Signals, Information and Communication	4	G2F	3	E
TSRT12	Automatic Control	6	G2F	1	E
Period 2					
TQXX10	Degree project - Bachelor's Thesis	16	G2E	-	C
TATA27	Partial Differential Equations	6*	A1N	3	E
TATA66	Fourier and Wavelet Analysis	6*	A1N	3	E
TDDD12	Database Technology	6	G2F	4	E
TEIO94	Entrepreneurship and Idea Development	6	G2F	2	E
TINT02	Intercultural Competence and Intercultural Communication, Continued Course	6*	G2F	-	E

Specialisation: Applied Mathematics — Preliminary courses

Course code	Course name	Credits	Level	Timetable module	ECV
Period 1					
TSRT12	Automatic Control	6	G2F	1	E

ECV = Elective / Compulsory /Voluntary
*The course is divided into several semesters and/or periods

Common rules

General Rules and Regulations

Plagiarism

For examinations that involve the writing of reports, in cases in which it can be assumed that the student has had access to other sources (such as during project work, writing essays, etc.), the material submitted must be prepared in accordance with principles for acceptable practice when referring to sources when the text, images, ideas, data, etc. of other people are used. This is done by using references or quotations for which the source is specified. It is also to be made clear whether the author has reused his or her own text, images, ideas, data, etc. from previous examinations, such as degree projects, project reports, etc. (this is sometimes known as “self-plagiarism”).

A failure to specify such sources may be regarded as attempted deception during examination.

Attempts to cheat

In the event of a suspected attempt by a student to cheat during an examination, or when study performance is to be assessed as specified in Chapter 10 of the Higher Education Ordinance, the examiner is to report this to the disciplinary board of the university. Possible consequences for the student are suspension from study and a formal warning. More information is available at Cheating, deception and plagiarism.

Use of generative AI

Linköping University has produced a guide for teachers and students' use of generative AI in education (Dnr LiU-2023-02660), https://liuonline.sharepoint.com/sites/student-rattigheter-och-skyldigheter/SitePages/generativ-ai-i-utbildning.aspx. Students are expected to gain knowledge of what applies to each course (including the degree project). In general, clarity to where and how generative AI has been used is important.

Audio and Video Recording

As a general rule, audio and video recording in teaching situations is not permitted. A refusal to allow a student to make an audio or video recording does not need to be justified. There may be reasons to allow audio and video recording, and exceptions to the general rule may therefore be made; see Riktlinjer för studenters möjlighet till ljud- och bildupptagning i undervisningssituationer, Dnr LiU-2024-02048 https://styrdokument.liu.se/Regelsamling/VisaBeslut/622637.

Quality assurance

The relevant faculty programme board has overall responsibility for the quality of study programmes.

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at https://styrdokument.liu.se/Regelsamling/Innehall.

Guidelines and Regulations for Programme Studies

Structure and organisation of study programmes

The contents and design of the programmes are to be continuously revised such that new knowledge is integrated into courses and specialisations. Within one programme, several study specialisations or profiles may be available. The identities of the study specialisations or profiles and the regulations governing how these may be selected are given in the syllabus and curriculum for the particular field of study and programmes.

The structure and organisation of the programmes are to follow specified criteria that are summarised in the syllabus for each programme.

- The syllabus defines the aims of the study programme.
- The curriculum, which constitutes one part of the syllabus for the field of study, gives details of the terms in which the various courses have been timetabled, and their scheduling through the academic year.
- The course syllabus specifies, among other things, the aim and contents of the course, and the prior knowledge that a student must have, in addition to the admission requirements for the programme, in order to be able to benefit from the course.

Qualification requirements

The qualification requirements specified in the Higher Education Ordinance 2007 apply to students admitted after 1 July 2007. For students admitted earlier than 2007 and has completed components of a programme after 1 July 2007 has the right to be assessed with respect to the qualification requirements specified by the Higher Education Ordinance 2007. Regardless of the year of admission, local regulations laid down by the faculty board and university board also apply, see "Föreskrifter och allmänna råd om examensbenämningar och preciserade krav för

generella examina på grundnivå och avancerad nivå", (https://styrdokument.liu.se/Regelsamling/VisaBeslut/622693).

Qualifications within a study programme

Qualification requirements that are specific to a study programme are given in the syllabus for that programme.

Admission requirements and matriculation and postponement of matriculation

A person who has been accepted for a study programme is to start their studies (matriculate) in the term that is specified in the decision about admission. The date and location of the matriculation procedure will be communicated to those admitted. For those admitted to term 1, the matriculation is mandatory.

Regulations concerning admission requirements, matriculation and postponement of matriculation have been laid down in the admission regulations for Linköping University (http://styrdokument.liu.se/Regelsamling/VisaBeslut/622645).

Admission to a later part of a programme

Admission to a later part of a study programme is used here to refer to admission to term 2 or later and with the purpose of completing the programme and taking a degree. Admission to a later part of a programme may take place only if sufficient resources and space on the programme are available. Furthermore, the applicant must satisfy the entry requirements for the relevant term of the programme, as specified in Dnr LiU-2022-00174 (https://styrdokument.liu.se/Regelsamling/VisaBeslut/1179685).

Interruption in studies

Notification of an interruption in studies is to be made by the student through a web form Forms. If such a notification is not made and if the student does not do a course registration during the first term during which the interruption is to take place, the interruption will be considered to be a withdrawal. An interruption in studies must cover a complete term, and notification of interruptions can be given for a maximum of two consecutive terms. Notification of resumption of studies is done by the student and is to take place at the course registration for the term that follows the interruption. The student then has a guaranteed place at the program, provided that the program and courses are still offered.

A student who is taking an interruption in studies may during this period retake examinations. The student is responsible that registration for courses is carried out at the correct times in preparation for the resumption of studies.

Withdrawal from a study programme

A student who wishes to withdraw from a study programme must notify the study guidance counsellor. A student who leaves the studies without giving notification of an interruption in study and who fails to register on a course for the immediately subsequent term is considered to have withdrawn. A student who has withdrawn may return to the study programme if a vacancy is available.

Courses within a study programme

The curriculum for the various years of a study programme specify which courses are mandatory (m), elective (e) and voluntary (v). The course specified as voluntary (labelled with "v") in the programme syllabus are assessed solely as voluntary courses, and credits from these may not contribute to the requirements for a degree.

Take courses from another study programme or third-cycle courses

Students taking a master's programme in engineering can apply to take courses given in Term 7 and later terms of the programme from all engineering master's programmes. Admission to courses at Term 7 or higher requires the possession of at least 150 credits within the programme to which the student has been admitted.

Admission to third-cycle courses requires studies at Master's level, i.e. year 4-5 or admitted to a Master's programme. Information can be obtained from the relevant director of advanced studies.

Admission is granted to the extent that resources allow, provided that places are available on the course. When selecting a course from another programme or third-cycle courses, the admission requirements specified in the course syllabus should be satisfied.

For credit transfer of the courses, see credit transfer below.

Credit transfer of courses outside the programme curriculum

To include courses that are not specified in the program curriculum in a degree, the student need to apply to and be granted this from the faculty programme board. The credits must be completed at the time of application.

Registration for programme courses

Registration for courses that are given as part of a study programme must be made during the specified period, which has been preliminarily set to 1-10 April for the autumn term, and 1-10 October for the spring term. Information about course registration is published on the Study councellors webpages or in programme rooms, sent to students by email, and disseminated at scheduled information meetings.

Changes in the program curriculum

In case of changes in the program curriculum, study planning in consultation with

the study guidance counsellor may be required in individual cases, see section Study planning.

Study planning

Students who require support in planning their continued studies can contact the study guidance counsellor of the programme. Study planning involves the student and the study guidance counsellor together drawing up an individual plan for studies during the subsequent term. The individual plan may allow the student to deviate from the general curriculum.

Completed first-cycle courses are a precondition for successful studies at more advanced levels. For this reason, study planning is based on giving priority to courses from earlier years of study that have not been completed. If further capacity is available, other courses can be planned to achieve full-time studies, provided that suitable prerequisites are available.

Study planning takes place on a regular basis if the student:

- does not satisfy the requirements for progression to later terms. In order for a student to be able to participate in courses from later years in such cases, a decision of exemption is required.
- does not satisfy the requirements for starting a degree project.

Other situations in which study planning may be required:

- A student has fallen behind during the early part of a study programme and has failed to complete several courses.
- A student has not satisfied the entry requirements for a degree project before term 6 of an engineering degree.
- Changes in the program curriculum.
- A student has applied for admission to a later part of a programme.
- Studies have been carried out abroad.
- For for students pursuing elite-level athletic careers Dnr LiU- 2023-05-29 (https://styrdokument.liu.se/Regelsamling/VisaBeslut/1260771),
- A study programme is to be resumed after an interruption.

In these cases the study guidance counsellor supports the student in planning the continued studies, also in situations in which the student can register for the relevant courses without the need for a special decision for the continued studies.

Part of education abroad

Students can exchange study at LiTH for study at an institute of higher education abroad, and/or work on a degree project abroad.

In the event that study (courses) at LiTH are exchanged for study abroad, the faculty programme director is responsible for a decision about a preliminary individual study plan, which is to be drawn up in advance. After the exchange, the student apply to credit completed courses from the exchange into their degree. The guideline for credit assessment in an exchange is that the

courses should be in line with the program's orientation.

Regulations for entry requirements, ranking and nomination for study abroad through LiTH's exchange agreements, see Regulation of exchange studies (https://styrdokument.liu.se/Regelsamling/VisaBeslut/622362). For the compulsory study abroad period within Ii (Industrial Engineering and Management – International) and Yi (Applied Physics and Electrical Engineering – International), see specific regulation (https://styrdokument.liu.se/Regelsamling/VisaBeslut/755476).

Instructions and Regulations regarding the degree projects for Bachelor of Science in Engineering, Bachelor of Science (Technology), Bachelor of Science, Bachelor of Arts, and Bachelor without prefix

General provisions for the degree project are given here. The appropriate faculty programme board can provide further, programme-specific regulations, which are given in the programme syllabus and/or the course syllabus for the degree project. Information about application, reflection documents, possible examiners etc. can be found at Information.

Interruption in and deregistration from a course

The LiU decision, Guidelines concerning confirmation of participation in education, Dnr LiU-2020-02256 (https://styrdokument.liu.se/Regelsamling/VisaBeslut/764582), states that interruptions in study are to be recorded in Ladok. Thus, all students who do not participate in a course for which they have registered are therefore obliged to report the interruption so that this can be noted in Ladok. Deregistration from or interrupting a course is carried out using a Web-based form.

Aim

The aim of the degree project is described in the relevant course syllabus https://liu.se/studieinfo/en.

Extent

Requirements for the extent of the degree project for each type of degree are given in the syllabus of the study programme.

Locations for a degree project

The work is carried out in the form of:

- an internal degree project located at one of the departments at LiU
- an external degree project located at a company, government agency, or other organisation in Sweden or abroad. The examiner assesses whether the

conditions exist to be able to carry out a degree project that meets the requirements stated in the respective course syllabus for degree projects.

For a degree project that is examined at another university, the Faculty program director must be contacted before commencement to assess the possibility of credit transfer.

Selection of degree project

A degree project is to be selected in consultation with an examiner, who is also responsible that the specialisation, extent and level of the project satisfy the requirements specified in in the course syllabus.

Approved main subject areas for degree projects are specified in the syllabus for the relevant programme.

The examiner for a degree project within a certain subject area are determined by the faculty programme board that is responsible for general degrees within the main subject area. An up-to-date list is given at Information on degree projects.

Considerations regarding confidentiality, copyright and patent

In cases in which issues relating to work-related copyright or patenting may arise, provisions governing these should be established in advance. Regarding confidentiality, the student can enter into a confidentiality agreement in order to obtain access to confidential information necessary for the completion of the degree project. The supervisor and examiner, however, determine whether they are prepared to sign a confidentiality agreement. Hence, the confidential information must not normally be of such nature that it is necessary to supervise or grade the work. If large parts of the degree project are of this nature, careful consideration should be given to whether the degree project should commence or not.

The complete degree project thesis is to be published during the grading procedure, unless exceptional circumstances prevent this. If any part of the thesis should not be published, this must be approved in advance by the examiner and the relevant head of department. Note that final decisions relating to confidentiality are taken by an administrative court.

Commencement of a degree project

Requirements that must be satisfied before a degree project can be started are given in the currently valid course syllabus, which can be obtained in the relevant programme syllabus at https://liu.se/studieinfo/en.

Notification of a degree project is to be carried out when the degree project starts, at Application. Registration of the degree project is to take place in connection to when the work commences.

Before the start of the degree project, the examiner is to ensure that the student

satisfies the conditions for commencement of the degree project within the relevant main subject area. Support in this can be obtained from the Study Administration Office, who checks the general requirements for starting the degree project.

The student is also to notify the relevant department of the start of the degree project.

Degree projects in collaboration with another student

In cases in which two students carry out a degree project together, the contribution of each student is to be specified. The extent of the work is to correspond to the extent of two individual degree projects. The examiner is to ensure that each student has contributed in a satisfactory manner to the work, and that each student satisfies the requirements for achieving a Pass grade for the degree project.

Degree projects carried out in collaboration between more than two students are not permitted.

Examiners

The examiner must be employed as a teacher at LiU according to the LiU Regulations for Appointments (https://styrdokument.liu.se/Regelsamling/VisaBeslut/622784). The following teachers can be appointed as examiner: Professor (including Adjunct and Visiting Professor), Associate Professor (including Adjunct), Senior Lecturer (including Adjunct and Visiting Senior Lecturer), Research Fellow, Assistant Lecturer (including Adjunct and Visiting Assistant Lecturer), or Postdoc. The examiner must also have the expertise required to examine degree projects (for example through research, supervision or teaching) within the relevant main subject area, and be appointed by the faculty programme board. The faculty programme board can also appoint emerita/emeritus as examiner for a single thesis work.

The examiner is to:

- ensure before the start of the degree project that the student satisfies the conditions for commencement of the degree project within the relevant main subject area.
    - The Study Administration Office is to check whether the commencement criteria are satisfied and inform the examiner of this
    - The Examiner is to check whether special admission requirements (where relevant) are satisfied, for example that the student can demonstrate a certain degree of in-depth knowledge within the field relevant for the degree project
- determine the specialisation and principal work of the degree project, based on an assessment of whether the degree project will result in the learning outcomes of the course syllabus being satisfied
- in conjunction with the planning report, check that the student has

registered for the degree project and that the student has a supervisor
- pass/fail the planning report
- be responsible that the supervisor or supervisors carry out their duties
- approve the work for presentation
- before the presentation, check that the proposed opponent satisfies the conditions for commencement of the degree project and has attended two report presentations
- pass/fail the presentation and the opposition to it
- approve a concluding reflection document
- ensure that a degree project that has been passed satisfies the learning outcomes of the course syllabus and other requirements, and award a grade to the degree project (either G = Pass, or U = Fail).

In cases in which a degree project is carried out jointly by two students with different main subject areas, one examiner in each main subject area must be appointed, where this is necessary.

Supervisors

A student working on a degree project is to have access to an internal supervisor at the department at which the degree project has been registered. The internal supervisor is to have a degree that corresponds at least to the level of the degree project to be supervised. The internal supervisor may, in exceptional circumstances, be the same individual as the examiner. A decision of whether to allow this in a particular case is to be made by the relevant faculty programme board before the degree project is started. The application for exemption is made by the examiner.

The supervisor is to ensure that the student obtains help with:

- expert support in general questions related to methods, specialist knowledge of the subject, and writing the report
- problem formulation, and setting the limits of the work
- scheduling and planning work, and selection of appropriate methods.

If the degree project is being carried out outside of LiTH, an external supervisor from the host is to be appointed.

Right to obtain supervision

It is expected that the student complete and pass a degree project within specified time limits. The department is required to provide supervision for a maximum of 12 months after the student has registered the degree project in Ladok. The examiner may grant additional supervision after this period in special cases. If the examiner determines that supervision is to be ended, the degree project is to be awarded a Fail grade. The examiner does not have to fail the degree project if it is considered possible that the student can finish the thesis without further supervision.

If a degree project is awarded a Fail grade for the reason described above or for

any other reason, the student is to be directed towards carrying out a further degree project. However, carrying out a new degree project means very limited opportunities for supervision.

Planning report / Planning assessment

During the first weeks of the degree project, the student is to draw up a written planning report that contains:

- a preliminary title of the degree project
- a preliminary statement of the research question, against the background of a literature search
- a preliminary description of the approach to be taken
- planned literature foundation
- a schedule for the execution of the degree project, including suggested dates for the mid-way assessment and presentation.

Formulation of the research question is to be bounded, realistic and viewed from a perspective of societal or commercial benefit. The term “societal” is to be understood here to also include universities and university colleges.

The planning report must be reviewed orally with the examiner and/or supervisor prior to approval. The examiner decides on the format of this review. The review of the planning report can result in two outcomes:
1. The student has presented a plan that is reasonable and feasible, possibly subject to minor adjustments. Work may commence. The planning report is approved.
2. The presentation reveals deficiencies in planning and/or understanding. The planning report is not approved, and work cannot proceed.

Examination

For details, see Guidelines for education and examination for first-cycle and second-cycle education at Linköping University, Dnr LiU-2026-02449 (http://styrdokument.liu.se/Regelsamling/VisaBeslut/917592).

The degree project must be presented both orally and in writing, in Swedish or English. Please note that for international master's programmes, the language of presentation is English.

Attendance at presentations

A student is to attend presentations of degree project theses as described in the course syllabus. Attendance at such presentations is a component of the degree work that is subject to points-based assessment. The presentations attended must be at the same level or a higher level than the degree project of the student.

It is advantageous that one of the presentations attended is a licenciate degree seminar or a doctoral disputation. The student is responsible for ensuring that a

certification of attendance at the presentation is obtained and passed to the departmental administrator for registration in Ladok.

The occasions on which a student attends presentations are to be completed before the student presents the degree project thesis. The course syllabus for the degree project describes the scheduling of the attendance at presentations.

The attendance at presentations is to take place on site at LiU. It is not possible to participate remotely.

Presentation

The oral presentation is to take place when the examiner considers that the work has been completed and is ready to be presented, and after the student has attended two thesis presentations. The examiner and the student must agree on the time for presentation. The presentation is to take place on site at LiU at a time when other students can attend. Normally this means that the presentation can take place between the re-examination period in August and midsummer, The oral presentation shall take place at a public session, unless there are exceptional reasons to the contrary.

The oral presentation is to describe the background to the problem that has been studied, describe the methods used, and present the results and conclusions. The presentation is to be at a level suitable for everyone present, not just for specialists. After the oral presentation, the student is to counter any criticism that the opponent may raise, and allow other participants to pose questions.

Degree project thesis

The written degree project report is to be professionally written and comprehensive, and it is to demonstrate a scientific approach. The report must be prepared in accordance with principles for acceptable practice when referring to sources when the text, images, ideas, data, etc., of other people are used. This is done by using references or quotations for which the source is specified. It is also to be made clear whether the author has reused his or her own text, images, ideas, data, etc. from previous examinations, such as undergraduate work, project reports, etc. (This is sometimes known as “self-plagiarism”.) A failure to specify such sources may be regarded as attempted deception during examination.

The contents are to be easy to understand, and the way in which material is presented is important. It must describe the background to the project and the formulation of the research question. The choice of approach is to be clearly explained, and the thesis should make clear the coupling between the results and the conclusions. Commonly accepted scientific methods are to be used for processing the results. The discussion is to be comprehensive, and demonstrate that the student masters analytical thought processes. The thesis is to demonstrate good mastery of the literature in the field, and include an abstract. Theses that are principally written in Swedish should contain a summary in English. A publication-ready manuscript and a reflection document covering the work undertaken are to be submitted to the examiner within 10 days after the oral presentation. The examiner may grant an exemption from this requirement. If

final versions of the required documents are not submitted as stipulated, the examiner may determine that the presentation is to be rescheduled.

The Faculty of Science and Engineering (Institute of Technology) at Linköping University recommends that degree project theses be published.

Opposition

An oral opposition is to be carried out in connection with the student's own presentation of his or her thesis, i.e. at the end of the own studies, and is to take place on site at LiU. The opposition is made on other degree projects at the same level and of the same extent as the own degree project. The opponent must also have attended two thesis presentations as a member of the audience. In a normal case, the number of opponents will be the same as the number of respondents. In exceptional cases, the examiner may decide that this is not to be the case. Acting as an opponent during the thesis presentation of another student is subject to points-based assessment as described in the course syllabus.

The opponent is to:

- discuss and comment on the selection of methods, results and (where relevant) data processing, conclusions, possible alternative solutions and conclusions, and the management of literature
- comment on the general arrangement of the degree project thesis and related, formal aspects of style, and comment on the oral presentation technique
- illuminate the strengths and weaknesses of the thesis.

The duration of the opposition should be approximately the same as that of the presentation, and it is to include a discussion in which the student presenting the thesis replies to and comments on the criticism raised by the opponent.

Unless otherwise agreed, at least one week before the presentation the opponent is to present in writing to the examiner the important issues that will be discussed, and the structure of the opposition that will be taken. The opponent and the examiner discuss the structure that the opponent has drawn up.

Reflection document

A document reflecting on the work that has been carried out is to be submitted to the examiner within 10 working days of the oral presentation. Instructions for preparing a reflection document can be reached through Reflection document.

Grades

The degree project is graded as either Fail (U) or Pass (G). To receive a passing grade, the student must complete all components with a passing result.

Reporting of examination results

The presentation and the opposition are to be approved by the examiner. When any required adjustments of the thesis have been made, the reflection document has been approved, and the student has functioned as an opponent for another

degree project, the degree project is reported as a passed course and the credits can be used to satisfy the requirements for a qualification.

Examination components

The following examination components and associated module codes are used at the Faculty of Science and Engineering as part of the degree project:

- Grades Fail (U) and Pass (G) are to be used for the examination component assignment (UPG).
- Grades Fail (U) and Pass (G) are to be used for the examination components Opposition (OPPO) and Attendance at thesis presentation (AUSK).

For possibilities to alternative forms of examinations, the following applies (in accordance with the LiU Guidelines for education and examination for first-cycle and second-cycle education at Linköping University, Dnr LiU-2023-00379 http://styrdokument.liu.se/Regelsamling/VisaBeslut/917592):

- If the coordinator has recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.
- An examiner may also decide that an adapted examination or alternative form of examination if the examiner assessed that special circumstances prevail, and the examiner assesses that it is possible while maintaing the objectives of the course.

Exemptions

If there are exceptional circumstances, an exemption can be granted from the above regulations.

Exemption to replace the oral opposition with a detailed written opposition can be granted after approval by the faculty programme board when all other elements for the degree have been fulfilled, the degree project has been submitted and there are exceptional circumstances. It is the examiner who applies to the faculty programme board for an exemption for written opposition.

Written opposition can be carried out in any of the following ways:

- The student makes a written opposition to a work done by another student, whose examiner then examines the opposition
- The student makes a written opposition to a degree project that has already been examined by the examiner.

In the case of a written opposition, there is no need for an initial account of the structure of the opposition.

Exemption from conducting the oral opposition on site at LiU (and instead conducting it remotely) with reference to exceptional circumstances is given by the examiner. Examples of exceptional circumstances are the lack of a visa to

come to Sweden.

Exemption from carrying out presentation on site at LiU (and instead conducting it remotely) can be granted by the respective faculty programme board if there are exceptional circumstances. Examples of exceptional circumstances are the lack of a visa to come to Sweden. It is the examiner who applies to the faculty programme board for an exemption from carrying out presentation on site.

Instructions and Regulations Regarding the Course

Course syllabus

A syllabus must be established for each course. The syllabus specifies the aim and contents of the course, and the prior knowledge that a student must have in order to be able to benefit from the course.

Timetabling

Program courses are timetabled after a decision has been made for this course concerning its assignment to a timetable module. Single subject courses can be timetabled at other times.

Interruption in and deregistration from a course

The LiU decision, Riktlinjer för villkor vid antagning samt för reservantagning och andra antagningsrelaterade frågor , Dnr LiU-2024-0782 (https://styrdokument.liu.se/Regelsamling/VisaBeslut/764582), states that interruptions in study are to be recorded in Ladok. Thus, all students who do not participate in a course for which they have registered are therefore obliged to report the interruption so that this can be noted in Ladok. Deregistration from or interrupting a course is carried out using a Web-based form.

Cancelled courses and changes to the course syllabus

Courses with few registered participants (fewer than 10) may be cancelled or organised in a manner that differs from that stated in the course syllabus. The Dean is to deliberate and decide whether a course is to be cancelled or changed from the course syllabus. For single subject courses, the cancellation must be done before students are admitted to the course (in accordance with LiUs regulation Dnr LiU-2025-
02899, https://styrdokument.liu.se/Regelsamling/VisaBeslut/622645).

Examination

For details, see Guidelines for education and examination for first-cycle and second-cycle education at Linköping University, Dnr LiU-2026-02449 (http://styrdokument.liu.se/Regelsamling/VisaBeslut/917592).

Examiner

An examiner must be employed as a teacher at LiU according to the LiU Regulations for Appointments, Dnr LiU-2026-01407 (https://styrdokument.liu.se/Regelsamling/VisaBeslut/622784). For courses in second-cycle, the following teachers can be appointed as examiner: Professor (including Adjunct and Visiting Professor), Associate Professor (including Adjunct), Senior Lecturer (including Adjunct and Visiting Senior Lecturer), Research Fellow, or Postdoc. For courses in first-cycle, Assistant Lecturer (including Adjunct and Visiting Assistant Lecturer) can also be appointed as examiner in addition to those listed for second-cycle courses. In exceptional cases, a Part-time Lecturer can also be appointed as an examiner at both first- and second cycle, see Delegation of authority for the Board of Faculty of Science and Engineering.

Principles for examination (TEN, MUN, DIT, DAT)

Written and oral examinations (TEN, MUN) and digital and computer-based examinations (DIT, DAT) are held at least three times a year: once immediately after the end of the course, once in August, and once (usually) in one of the re-examination periods. Examinations held at other times are to follow a decision of the faculty programme board.

Principles for examination scheduling for courses that follow the study periods:

- courses given in VT1 are examined for the first time in March, with re-examination in June and August
- courses given in VT2 are examined for the first time in May, with re-examination in August and January
- courses given in HT1 are examined for the first time in October, with re-examination in January and August
- courses given in HT2 are examined for the first time in January, with re-examination in March and in August.

The examination schedule is based on the structure of timetable modules, but there may be deviations from this, mainly in the case of courses that are studied and examined for several programmes and in lower grades (i.e. 1 and 2).

Examinations for courses that are cancelled or rescheduled such that they are not given in one or several years are held three times during the year that immediately follows the course, with examination scheduling that corresponds to the scheduling that was in force before the course was cancelled or rescheduled.

When a course, or a written or oral examination (TEN, DIT, DAT, MUN), is given for the last time, the regular examination and two re-examinations will be offered. Thereafter, examinations are phased out by offering three examinations during the following academic year at the same times as the examinations in any substitute course. The exception is courses given in the period HT1, where the three examination occasions are January, March and August. If there is no substitute course, three examinations will be offered during re-examination periods during the following academic year. Other examination times are decided

by the faculty programme board. In all cases above, the examination is also offered one more time during the academic year after the following, unless the faculty programme board decides otherwise. In total, 6 re-examinations are offered, of which 2 are regular re-examinations. In the examination registration system, the examinations given for the penultimate time and the last time are denoted.

If a course is given during several periods of the year (for programmes, or on different occasions for different programmes) the faculty programme board or boards determine together the scheduling and frequency of re-examination occasions.

For single subject courses, written and oral examinations can be held at other times.

Principles for other examinations forms

For other examination forms (e.g. PRA, UPG, LAB, KTR, etc.), the examination should normally take place before the course ends, i.e. before the examination period.

At least two additional examination opportunities should be offered within one year of the regular examination opportunity; see the general LiU guidelines for education and examination at first-cycle and second-cycle levels, Dnr LiU-2026-02449 (http://styrdokument.liu.se/Regelsamling/VisaBeslut/917592).

These examination components should, in principle, also be handled in the same way as an examination component when they are offered for the final time. However, the timing of the examination may vary depending on the nature of the component, compared with the scheduled examination periods.

Discontinued course

For Decision on Rutiner för administration vid avveckling av utbildningsprogram, fristående kurser och kurser inom program, see Dnr LiU-2021-04782 (https://styrdokument.liu.se/Regelsamling/VisaBeslut/1156410). After a decision on closure and after the end of the discontinuation period, the students are referred to a replacement course (or similar) according to information in the course syllabus or programme syllabus. If a student has passed some part/parts of a closed program course but not all, and there is an at least partially replacing course, an assessment of crediting can be made. For questions about the crediting of course components, contact the Study councellors.

Registration for examination

In order to take an written, digital or computer-based examination, registration in advance is mandatory, see riktlinjer för genomförande av salstentamina Dnr LiU-2024-00708 (https://styrdokument.liu.se/Regelsamling/VisaBeslut/622682). An unregistered student can thus not be offered a place. The registration is done by the student at the Student Portal or in the LiU-app during the registration period. The registration period opens 30 days before the date of the examination and closes 10 days before the date of the examination. Candidates are informed of the

location of the examination by email, four days in advance.

Code of conduct for students during examinations

Details are given in riktlinjer för genomförande av salstentamina, Dnr LiU-2024-00708 (http://styrdokument.liu.se/Regelsamling/VisaBeslut/622682).

Retakes for higher grade

Students at the Faculty of Science and Engineering at LiU have the right to retake written examinations and digital and computer-based examinations in an attempt to achieve a higher grade. This is valid for all examination components with code “TEN”, “DIT” and "DAT". The same right may not be exercised for other examination components, unless otherwise specified in the course syllabus.

A retake is not possible on courses that are included in an issued degree diploma.

Course grades and examination forms

The course grades that are preferably to be used are Fail (U), Pass (3), Pass not without distinction (4) and Pass with distinction (5).

- Grades U, 3, 4, 5 are to be awarded for courses that have written or digital examinations.
- Grades Fail (U) and Pass (G) may be awarded for courses with a large degree of practical components such as laboratory work, project work and group work.
- Grades Fail (U) and Pass (G) are to be used for degree projects and other independent work.

Examination components and module codes

The following examination components and associated module codes are used at the Faculty of Science and Engineering:

- Grades U, 3, 4, 5 are to be awarded for written examinations (TEN) and digital examinations (DIT).
- Examination components for which the grades Fail (U) and Pass (G) are to be awarded forlaboratory work (LAB), project work (PRA), preparatory written examination (KTR), digital preparatory written examination (DIK), oral examination (MUN), computer-based examination in a computer lab (DAT), digital preparatory written examination in a computer lab (DAK), home assignment (HEM), and assignment (UPG).
- Students receive grades either Fail (U) or Pass (G) for other examination components in which the examination criteria are satisfied principally through active attendance such as tutorial group (BAS) or examination item (MOM).
- Grades Fail (U) and Pass (G) are to be rewarded for the examination components Opposition (OPPO) and Attendance at thesis presentation (AUSK) (i.e. part of the degree project).

In general, the following applies:

- Mandatory course components must be scored and given a module code.
- Examination components that are not scored, cannot be mandatory. Hence, it is voluntary to participate in these examinations, and the voluntariness must be clearly stated. Additionally, if there are any associated conditions to the examination component, these must be clearly stated as well.
- For courses with more than one examination component with grades U,3,4,5, it shall be clearly stated how the final grade is weighted.

For mandatory components, the following applies (in accordance with the LiU Guidelines for education and examination for first-cycle and second-cycle education at Linköping University, Dnr LiU-2026-02449 http://styrdokument.liu.se/Regelsamling/VisaBeslut/917592):

- If special circumstances prevail, and if it is possible with consideration of the nature of the compulsory component, the examiner may decide to replace the compulsory component with another equivalent component.

For possibilities to alternative forms of examinations, the following applies (in accordance with the LiU Guidelines for education and examination for first-cycle and second-cycle education at Linköping University, Dnr LiU-2026-02449 http://styrdokument.liu.se/Regelsamling/VisaBeslut/917592):

- If the LiU coordinator for students with disabilities has granted a student the right to an adapted examination for a written examination in an examination hall, the student has the right to it.
- If the coordinator has recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.
- An examiner may also decide that an adapted examination or alternative form of examination if the examiner assessed that special circumstances prevail, and the examiner assesses that it is possible while maintaing the objectives of the course.

Reporting of examination results

The examination results for a student are reported at the relevant department.