Linnæus University

Dnr: LNU-2025/1184

Programme syllabus

Faculty of Technology

Informatik, masterprogram, 120 högskolepoäng
Informatics, Master Programme, 120 credits

Level
Second cycle

Date of Ratification
Approved 2025-04-24.

The programme syllabus is valid from autumn semester 2026.

Prerequisites
General entry requirements for second-cycle studies and specific entry requirements: English 6 or the equivalent.

Description of Programme

The master's programme in Informatics focuses on two specialisations: AI-driven digital transformation and human-computer interaction (HCI). The programme aims to equip students with the skills to lead and manage the development and implementation of digital solutions in various domains, with a strong focus on digital transformation and user-centred approaches. Digital transformation involves integrating new digital technologies into organizations to improve efficiency, decision-making, and user experiences.

The programme combines knowledge from informatics, technology, business, and social sciences to deal with the complexities that these changes entail. Students are trained to work in both the private and public sectors, with a particular focus on areas such as human-computer interaction (HCI) and AI-driven digital transformation.
The envisioned job market includes roles in the design, development, and analysis of information systems, where understanding the context of both technology and human interaction is crucial. The flexible structure of the program prepares graduates for both professional roles and doctoral studies in the field of informatics.

Objectives

Knowledge and understanding

For a Degree of Master (Two Years) students must:

- demonstrate knowledge and understanding in their main field of study, including both a broad command of the field and deeper knowledge of certain parts of the field, together with a deep insight into current research and development work; and

- demonstrate deeper methodological knowledge in their main field of study.

Skills and abilities
For a Degree of Master (Two Years) students must:

- demonstrate an ability to integrate knowledge critically and systematically, and to analyse, assess and deal with complex phenomena, issues and situations, even when limited information is available;

- demonstrate an ability to critically, independently and creatively, identify and formulate issues and to plan and, using appropriate methods, carry out advanced tasks within specified time limits and there by contribute to the knowledge development, and evaluate this work;

- demonstrate an ability to clearly present and discuss their conclusions, and the knowledge and arguments behind them, in dialogue with different groups, in national as well as international contexts, orally and in writing; and

- demonstrate the skill required to participate in research and development work or to independently work in other advanced contexts.

Judgement and approach
For a Degree of Master (Two Year) students must:

- demonstrate an ability to make assessments in their main field of study, taking into account relevant scientific, social and ethical aspects, and demonstrate an awareness of ethical aspects of research and development work;

- demonstrate insight into the potential and limitations of science, its role in society and people’s responsibility for how it is used; and

- demonstrate an ability to identify their need of further knowledge and to take responsibility for developing their knowledge.

Content

Programme overview
This master's programme consists of 120 credits of full-time studies, with informatics as the main field of study. At least 60 credits must be in the main subject informatics, including the degree project of 30 credits.

The programme commences with basic courses in informatics, i.e., methodology, current issues in research and development, innovative approaches in informatics, and AI for competitive advantage. These courses lay the foundation for further specialization in the coming semesters.

In semester 2, students choose one of two specialisations:

1. Human-Computer Interaction (HCI) Focus: User-centred system design, interaction design, and user experience, including issues of accessibility, ethics, and inclusion.
2. AI-driven digital transformation Focus: AI-driven digital transformation at its core, with a focus on how AI can be used to drive strategic development and innovate business models in private and public organizations. The courses deal with implementation of AI, responsibility, ethics, and change management.

During the second year, the knowledge in each specialisation is deepened and students are given the opportunity for an internship semester or studies abroad. The programme concludes with a degree project.

The programme coordinator has the overall responsibility for the programme. There is also a programme council whose task is to follow up the programme's course content and implementation.

Access to each specialisation is subject to availability. A specialisation may, in the event of few applicants or other unforeseen reasons, be cancelled. If a specialisation is cancelled, the student will be notified.

The courses in the programme can also be exchanged for equivalent courses relevant to the programme's specialisation, in agreement with the programme director. When exchanging courses, the programme coordinator checks that the programme's objectives are still met.
The entry requirements for courses and the local degree regulations at Linnaeus University must always be met.

Programme courses

The exact location of courses in each year, semester and study period may vary from year to year.

* Indicates that the course is in the main subject informatics.

The courses are listed per specialisation.

Specialisation human-computer interaction (HCI)
Year 1

Contemporary issues in informatics research and development (7,5 credits)*, A1N
This course explores contemporary challenges in informatics and focuses on how theories, approaches and methods address these issues. Students gain insight into emerging trends and development in informatics research and development.

Research Methods in Computer and information Science (7,5 credits)*, A1N
This course introduces students to basic scientific paradigms, methods and techniques in informatics. It provides an understanding of how research paradigms relate to problem areas, research questions, and strategies for data collection and analysis.

Innovative approaches in Informatics (7,5 credits)*, A1N
This course examines key approaches in informatics, including design thinking, design

science, and systems-oriented methods. Students build their ability in using these approaches to solve practical and theoretical challenges in informatics.

AI for Competitive Advantage (7,5 credits)*, A1N
This course provides an understanding of artificial intelligence (AI) in business applications, with a focus on AI-driven digital transformation, process optimization, and innovation. Students gain insight into the role and potential of AI in organizational contexts

Human-computer interaction (15 credits)*, A1N
This course focuses on designing interactive systems with an emphasis on usability, user experience and accessibility. The course includes user surveys, prototyping and usability testing.

Elective courses (15 credits)

Specialisation project in informatics (15 credits)*, A1N
This course provides students with the opportunity to deepen their expertise in HCI through projects that address real-world challenges. The use of advanced methods for HCI research, design and evaluation are encouraged in this course.

Or

Degree project, Degree of Master (One year), (15 credits)*, A1E

Year 2

Inclusive design (7,5 credits)*, A1F
This course focuses on designing digital solutions that are accessible, fair, and usable for different user groups. It also emphasizes important principles for designing and evaluating interface accessibility. Students learn about the principles, methods, and tools that are used to create and evaluate inclusive systems, and to take into account cultural, social, and ethical aspects to ensure broader accessibility and user participation.

Novel interactions (7,5 credits)**, A1F
This course explores emerging and innovative interaction paradigms. Students explore new methods of interaction, including multimodal interfaces, immersive technologies, and adaptive systems, with an emphasis on improving user engagement, accessibility, and usability.

Elective courses in technology/engineering, 15 credits
A list of recommended elective courses is announced by the programme coordinator before the application period for the current semester.

Or

Internship (30 credits)*, A1F
This course offers students the opportunity to gain practical experience through collaboration with companies or public organizations. Students will be part of a team within a specific company and work on a project related to their field of study, giving them the opportunity to apply their academic knowledge to real-world challenges. The course aims to strengthen the students' professional knowledge and skills as well as to

provide insights into the operational and strategic aspects of organizations from an informatics perspective.
Internship is only offered to students that are admitted on campus program, and places are subject to availability, depending on the collaboration between LNU and the participating companies.

Degree project, (30 credits)*, A2E

Specialisation AI-driven digital transformation
Year 1
Contemporary issues in informatics research and development (7,5 credits)*, A1N
This course explores contemporary challenges in informatics and focuses on how theories, approaches and methods address these issues. Students gain insight into emerging trends and development in informatics research and development.

Research Methods in Computer and information Science (7,5 credits)*, A1N
This course introduces students to basic scientific paradigms, methods and techniques in informatics. It provides an understanding of how research paradigms relate to problem areas, research questions, and strategies for data collection and analysis.

Innovative approaches in Informatics (7,5 credits)*, A1N
This course examines key approaches in informatics, including design thinking, design science, and systems-oriented methods. Students build their ability in using these approaches to solve practical and theoretical challenges in informatics.

AI for Competitive Advantage (7,5 credits)*, A1N
This course provides an understanding of artificial intelligence (AI) in business applications, with a focus on AI-driven digital transformation, process optimization, and innovation. Students gain insight into the role and potential of AI in organizational contexts

Data-driven digital transformation (15 credits)*, A1N
This course includes case studies from different sectors and branches, focusing on methods, tools and techniques that strengthen decision-making in organizations, as well as ethical considerations when using AI in companies. The course covers areas such as predictive analytics, data-driven strategies, digital innovation, and digital transformations.

Elective courses (15 credits)
Specialisation project in informatics (15 credits)*, A1N
This course provides students with the opportunity to deepen their expertise in AI-driven digital transformation through projects that address real-world challenges, with a focus on how AI can be used to, for example, drive strategic development and innovate business models in private and public organizations.

Or

Degree project, Degree of Master (One year), (15 credits)*, A1E

Year 2
AI driven business model configuration (7,5 credits) *, A1F
This course explores how emerging digital technology, such as AI, can innovate business models across different industries. Students gain knowledge about AI's role in

value creation, strategic decision-making, and operational optimization, while addressing challenges in AI integration within organizational structures.

Implementing human-centered AI in organizations (7,5 credits) *, A1F
This course examines how AI can be responsibly integrated into organizational processes, with a focus on stakeholders, ethical frameworks, governance, and strategic alignment. Students learn practical methods to ensure transparency, accountability and trust in AI-powered initiatives. Upon completion of the course, participants are expected to be able to lead AI transformations that balance innovation with ethical responsibility, user trust, and the strategic needs of organizations; these are key factors for a successful AI-driven digital transformation.

Elective courses in technology/engineering, 15 credits
A list of recommended elective courses is announced by the programme coordinator before the application period for the current semester.

Or

Internship (30 credits)*, A1F
This course offers students the opportunity to gain practical experience through collaboration with companies or public organizations. Students will be part of a team within a specific company and work on a project related to their field of study, giving them the opportunity to apply their academic knowledge to real-world challenges. The course aims to strengthen the students' professional knowledge and skills as well as to provide insights into the operational and strategic aspects of organizations from an informatics perspective.
Internship is only offered to students that are admitted on campus program, and places are subject to availability, depending on the collaboration between LNU and the participating companies.

Degree project, (30 credits)*, A2E

Societal relevance
The master's programme in Informatics, with specialisations in Human-Computer Interaction (HCI) and AI-Driven Digital Transformation, has a strong societal relevance by connecting user-centred methods and data-driven decision-making processes. Students in HCI design accessible and inclusive systems that improve usability and digital equity, while students in AI-driven digital transformation promote responsible innovation by ensuring transparency, integrity, and accountability. In both specialisations, sustainability and ethical considerations guide the responsible application of new technologies. Graduates gain competencies to drive organizational innovation, address societal challenges, and reduce the digital divide, which contributes to sustainable development and responsible digital transformation. Through collaborations with industry and reality-based projects, students develop practical solutions that positively impact individuals, organizations, and society at large.

Internationalisation
Studies abroad can be carried out on the student's initiative and should primarily take place within the University's exchange programmes. Confirmation that individual courses abroad can be included in the master's programme should be obtained in advance. Studies abroad take place in consultation with the programme coordinator, and they are tentatively recommended during the third semester. When choosing courses abroad, the student must also discuss their specialisation (HCI or AI-driven digital

transformation) with the programme coordinator, so that the foreign courses in the best way support and can be credited within the chosen specialisation.

Sustainable social development
The master's programme in Informatics, with specialisations in Human-Computer Interaction (HCI) and AI-Driven Digital Transformation, promotes sustainable social development by emphasizing inclusion, ethical innovation, and responsible use of technology. Through user-centered design and transparent AI methods, students learn to create solutions that meet societal needs and reduce negative environmental impacts. This prepares students to support equitable access, societal well-being, and long-term social resilience in an increasingly digitalized world.

Quality Development

Quality and progression are maintained through a continuous dialogue with the head of subject and the programme coordinator.

Programme councils are carried out at least twice per academic year. This programme council consists of the programme coordinator, at least one student representative from each year, and involved teachers and other stakeholders in the programme.

Continuous evaluation and improvement of the programme and its courses take place, among other things, through course evaluations in connection with each course, through academic year evaluations of the programme once a year, and in consultation with students at programme councils. Both academic year evaluations and course evaluations are archived and available at the university.

Moreover, collaboration takes place with companies and other stakeholders, as well as benchmarking with other higher education institutions.

Degree

After having completed their studies in accordance with the requirements stated in the Qualification Ordinance of the Higher Education Ordinance and in Linnaeus University’s local qualification ordinance, the student may apply for the award of a qualification. Students who have completed the Informatics, Master Programme, may obtain the following degree:

Degree of Master of Science (120 credits) with Specialisation in Human-Computer Interaction
Main Field of Study: *Informatics*

Filosofie masterexamen med inriktning mot människa-datorinteraktion
Huvudområde: *Informatik*

Or

Degree of Master of Science (120 credits) with Specialisation in AI-Driven digital transformation
Main Field of Study: *Informatics*

Filosofie masterexamen med inriktning mot AI-driven digital transformation
Huvudområde: *Informatik*

The degree certificate is issued in two languages (Swedish and English) and is accompanied by a diploma supplement in English.

Other Information

Some courses include internship periods that may require travel to different organisations, and, usually, the student must bear the cost of these trips.
The studies require access to a laptop and an internet connection.

In the event of any discrepancies between the Swedish and the English version of this programme syllabus, the Swedish version shall prevail.