



UiT The Arctic University of Norway

Program description

Computer Science - master

[120 ECTS credit / Digital and session-based, Bodø]

The program description has been approved by the Studieutvalget of Faculty of Science and Technology on December 6th, 2025



Study programme name	Computer Science - master
Degree obtained	Master of Science in Computer Science
Target group	<p>A Computer Science Master is suitable for those interested in a scientific understanding of the development, functioning and utility of computer and software systems. The candidates want to develop new technology for the benefit of a sustainable society, in cooperation with industry, research, public services, government and citizens in data- and information-intensive application areas.</p> <p>After graduating, the master candidates are well prepared for a profession as computer science experts able to develop computer and software solutions for complex problems in private or public sectors. They are also prepared for teaching and consultancy tasks, and for further studies up to the doctorate in computer science.</p> <p>The master's education provides a solid basis for careers, supporting further pursuit of knowledge and continued learning and professional progress. Most of our graduates go to engineering positions in the private or public sector. Many will take on positions with different combinations of management and technical responsibility.</p>
Admission requirements, required prerequisite, recommended prerequisite knowledge	<p>Admission to the Master's program in Computer Science requires a Bachelor's degree (180 ECTS) or equivalent qualification, with a major in Computer Science of minimum 80 ECTS.</p> <p>Applicants must have a minimum grade average comparable to a Norwegian C (2,5) in the ECTS scale, see the UiT webpage for International admissions for more information on how the point average is calculated.</p> <p>Excellent programming and software engineering skills at a systems level, and knowledge of operating systems is strongly recommended. Students are expected to have skills equivalent to the required prerequisites of the courses in the study program.</p> <p>The program is only open for applicants from Norway and other Nordic countries.</p> <p>Applicants from Norway or Nordic countries:</p> <ul style="list-style-type: none"> • The application deadline for Norwegian and other Nordic applicants is April 15th for admission to the autumn semester • Online application, study code 4029. <p>The program is not available to applicants from outside the Nordic countries.</p>
Certificate of good conduct	Not relevant
Suitability assessment	Not relevant

<p>The study programme's Learning Outcome</p>	<p>Knowledge – The candidate has...</p> <ul style="list-style-type: none"> • a broad solid foundation in computer science • a deep understanding of state-of-the-art distributed software architectures • a considerable depth of understanding of a selected area of specialization • a solid knowledge of risks and threats in computer systems and their related security measures • a solid understanding of system and application development relevant to the chosen specialty • a theoretical insight into software quality, maintainability and reliability • knowledge and methodological insight to perform basic research design, evaluation, implementation, and dissemination of small computer science research projects in a selected problem area • knowledge about principles, models and ethics of Generative AI, and of the various limitations of this technology <p>Skills – The candidate can / has...</p> <ul style="list-style-type: none"> • work independently on a significant non-trivial scientific problem • formulate viable research questions and hypotheses, perform research surveys and do result analysis and evaluation • communicate with domain experts and users • participate in multidisciplinary research and innovation projects • analyze scientific problems and select and employ effective research methods • plan, organize, and execute the work required to solve the problem and adapt to changes and limitations • demonstrate the feasibility of the solution by implementing key parts • collect and analyze relevant metrics characterizing the problem and the solution • write a well-structured and clearly formulated report describing the thesis work and reflecting on its results • write a well-structured and clearly formulated report describing the thesis work and reflecting on its results • the ability to design and operationalize systems involving Generative AI <p>General competence – The candidate ...</p> <ul style="list-style-type: none"> • can contribute to the development of computer science as a dynamic discipline under the influences of advances in theory, changes in technology, and in application areas • can communicate effectively, orally and in writing, within the field, and with the public as well as experts in other fields
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	<ul style="list-style-type: none">• can pursue life-long learning and development• is aware of relevant social and ethical issues and apply this awareness to their professional conduct; and• has competence about how to evaluate, implement and validate systems based on Generative AI											
Academic content and description of the study programme	<p>Computer Science Master is a gathering-based part-time study programme offered by the Computer Science Department from UiT’s campus in Bodø.</p> <p>This part-time study programme is a four-year programme covering 30 ECTS each year. It is particularly suitable for students who want to achieve a master’s degree in combination with for instance a regular job.</p> <p>The study programme has a methodological and realist approach, with emphasis on how to plan and realize small scale research projects in selected application areas.</p> <p>Mandatory topics include software architectures of large, distributed, data-intensive systems, practices in modern software engineering, and methodology and tools for small-scale informatics research projects in realistic application domains. The domains depend on student interest and university collaborating partners.</p> <p>The programme also provides elective courses from areas such as artificial intelligence, applied machine learning, medical informatics, or energy informatics, according on the student’s choices.</p> <p>Upon completing this master programme, you will have a thorough research-based foundation for practicing computer science in industry, research and public services. You will be able to analyse problems and work efficiently towards solutions in an organized manner, independently or in teams. You will be able to collect and analyse relevant metrics characterizing your problem and adapt to the related limitations and necessary changes. You can successfully demonstrate the feasibility of a solution through implementing key parts and will be able to design for system quality and lifetime reliability. You will learn about social and ethical issues that apply to computer science, and how to consider these during your professional career.</p> <p>The study programme consists of mandatory courses in computer science yielding 40 ECTS credits and 20 ECTS credits of elective courses. The electives may be in computer science or other sciences. The programme concludes with a master thesis of 60 ECTS credits.</p>											
Table: programme structure	<p>Programme structure from Autumn semester 2027</p> <table><tr><th>Term</th><th>10 ECTS / term</th><th>5 ECTS / term</th></tr><tr><td>1</td><td>INF-3900 Advanced Software Engineering</td><td rowspan="2">INF-3207 Distributed Systems Fundamentals</td></tr><tr><td>2</td><td>INF-3600 Generative AI</td></tr><tr><td>3</td><td>Elective course*</td><td></td></tr></table>	Term	10 ECTS / term	5 ECTS / term	1	INF-3900 Advanced Software Engineering	INF-3207 Distributed Systems Fundamentals	2	INF-3600 Generative AI	3	Elective course*	
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	4	Elective course**	INF-3920 Research Methods in Computer Science
	5	INF-3990 master's thesis in Computer Science	
	6		
	7		
	8		
	*) FYS-2021 Machine Learning, INF-3770 Health informatics, INF-3010 Energy Informatics - Smart Energy and Power Systems Modelling ** INF-3210 Energy Informatics - Green Computing, INF-3780 Advanced health informatics in practice		
Learning activities, examination, and assessment	<p>A successful learning environment depends on the combined efforts of the students. It is important that each student takes an active role, is present in teaching activities and contributes to the learning environment, both in organized teaching and otherwise during the gatherings where the students cooperate and largely learn from each other.</p> <p>The study programme offers flexibility in the following way.</p> <p>Courses given by the Computer Science Department for this programme will consist of a combination of</p> <ul style="list-style-type: none">• Digital teaching made available for the students to follow flexibly from any location at a suitable time.• Mandatory physical gatherings in Bodø, normally two per semester.• Co-working in groups – with digital support. <p>Most courses are intensive and project oriented. In group work sessions, students are expected to be active in discussions of issues in the subject matter.</p> <p>Students are expected to work with programming in their own facilities or in laboratory facilities provided by the CS department. This is where compulsory assignments are solved to acquire practical skills in designing, building and maintaining computer systems, either individually or in teams with other students.</p> <p>Mandatory coursework is usually expected in each course. Mandatory assignments must be approved for access to the final exam in a course.</p> <p>Examination and assessment may vary between courses, from written examination to project work reports, presentation of scientific work or oral examination. It may also consist of a combination of these methods. Written examinations require physical attendance in Bodø and/or Tromsø.</p> <p>In addition to collaborating with other informatics students, the students may also work with researchers and professionals from other areas, e.g. areas where technology is to be applied.</p> <p>Academic staff teaching at the study programme are active researchers. The courses are based on relevant research and are related to the department's research activities. As a student, you will get to know the projects and also be able to engage in projects along the way.</p>		

	<p>Master theses are often part of a research project. In that case, the research group will provide a working community. The master's thesis may by agreement also be conducted in, or in cooperation with, a company or other organization outside the university.</p> <p>During the work on these assignments, individual guidance is provided from the department's academic staff.</p>
The study programme's relevance	<p>Computer science is today's most expansive, innovative and applied discipline of technology. Knowledge of computer science methods and tools is a prerequisite for most knowledge production and other value creation today.</p> <p>The study programme leads to a degree as a Master of Science in Computer Science and qualifies for admission to the PhD programme in Computer Science, assuming satisfactory grade level.</p> <p>After graduating with a master's degree in computer science, you can work globally in most sectors and industries as the digital transformation progresses. Some examples of application sectors are IT industry, health, natural resource management and monitoring, aquaculture, public services, finance, energy, and research.</p> <p>Typical positions are system developer, software engineer, scientist/researcher, or consultant, within job areas such as web, mobile devices, security, computer games, 3D- and film animation, search engines, operating systems, databases, and networks. Many computer science masters move to management positions or combine management positions with professional roles or establish their own companies.</p>
Work scope	<p>To complete the study programme for the master's degree requires motivation and targeted work effort. To achieve the learning outcomes for the study programme, students must expect to spend approximately 20 hours a week in the semesters, including lectures, group work, programming/laboratory work and self-study.</p>
For master's theses/independent work in master's degrees	<p>The master thesis represents an independent scientific work equivalent to 60 ECTS credits. The thesis must be done individually, as group collaboration usually is not permitted.</p> <p>A supervision contract for the thesis is set up before the start-up, which regulates rights, obligations and resource use and resource access for the parties involved. Assessment consists of submission of a master's thesis and a final oral exam.</p> <p>For the master's thesis the student need to apply broad skills in computer science, combined with deeper insights in your selected specialty to solve advanced problems within your chosen area.</p> <p>The scientific theme of the master's thesis should be related to ongoing research at the department or research collaborators, including student employers.</p> <p>Current topics include, but are not limited to, software architectures, distributed systems, exascale computing, computer security, programming methodologies, dependable systems, real-time systems, operating systems, performance</p>

	<p>measurements and evaluation, large scale visualization, feature-rich large-scale search, computer networks and communication, handling of massive data, web-services and -architectures, collaborative editing, bioinformatics, social media, analysis of social data, medical informatics and technological issues in health sciences.</p> <p>The student is encouraged to find application areas and work in cooperation with one of our partners (private or public enterprises). Cooperation typically includes research topic, goals and deliverables, access to company resources, membership of company teams, etc.</p> <p>Students combining the study with an ICT profession are encouraged to find application areas based on interests in the company where they work, as this will increase support and contribute to making the effort more engaging and meaningful.</p>
Language of instruction and examination	<p>The language of instruction is English, and all the syllabus material is in English. Examination questions will be given in English but may be answered either in English or a Scandinavian language.</p> <p>The master's thesis may be written either in English or a Scandinavian language.</p>
Internationalisation	<p>The academic staff at the department associated with the study programme has active cooperation with leading research communities internationally, and this also benefits the students in the form of guest lectures.</p>
Student exchange	<p>Exchange studies abroad or at other educational institutions in Norway can be recognized in the master's degree if recommended by your supervisor, and only if the external courses are approved prior to departure.</p> <p>Exchange studies abroad should be planned in collaboration with the department's student advisor and the student's supervisor.</p> <p>Students can carry out an exchange stay in the third and/or fourth semester of the study.</p> <p>Students wishing to carry out an exchange stay as part of the study programme must contact the department administration in good time before leaving, no later than the semester start of the semester before departure. The pre-approved courses are included as part of the study at UiT. If the student does not accomplish the pre-approved arrangement this may lead to extended study time.</p> <p>The amount of work should be representative of the period during which the student is on exchange stays.</p>
Supervised professional training	<p>Not relevant</p>
Administrative responsibility and academic responsibility	<p>Programme management with the academic responsibility of the flexible Computer Science - Master has been added to a Study Programme Board. The Department of Computer Science at the Faculty of Science and Technology is administratively responsible for the study programme.</p>
Quality assurance	<p>The study programme is evaluated annually. The courses included in the study programmes are evaluated at least every third time they are given. Course</p>

	<p>evaluation is normally conducted as a dialogue between the students and the teacher or as a survey, combined with the assessment of available data. Annually, each class on the study programme elects a representative who can be spokesperson towards the academic community in various study-related cases.</p> <p>The courses of the study programme may change as a result of the development of computer science as a discipline, the relevant technologies available and the department academic staff's evaluation in dialogue with the business industry.</p> <p>For quality assurance of learning outcomes, exam questions are evaluated against national quality standards in computer science as practiced at the universities of Oslo, Bergen, Trondheim and Tromsø. Well-qualified external examiners are used in accordance with UiT regulations.</p>
Other regulations	Faculty of Science and Technology has prepared Supplementary provisions for the two years master's degree programme (120 credits).

