FACULTY OF HUMANITIES

UNIVERSITY OF COPENHAGEN

Programme curriculum

MSc programme in IT & Cognition

2019

Amended 2021, 2022_2 and 2023
Corrected 2023 and 2024

Faculty of Humanities
University of Copenhagen

Entry into force: 1 September 2023

Contents

This programme curriculum is supplemented by the faculty's *Shared curriculum for study programmes at the Faculty of Humanities*. Students enrolled under this curriculum are therefore subject to the guidelines and rules described in both the shared curriculum and the programme curriculum.

Part 1. Legal basis

Section 1. Legal basis

This curriculum has been drawn up under the authority endowed by:

- Ministerial Order no. 106 of 12 February 2018 on Admission to and Enrolment in Master's (Candidatus) Programmes at Universities (*Kandidatadgangsbekendtgørelsen*)
- Ministerial Order no. 1328 of 15 November 2016 on Bachelor's and Master's (Candidatus) Programmes at Universities (*Uddannelsesbekendtgørelsen*)
- Ministerial Order no. 1062 of 30 June 2016 on University Examinations and Grading (*Eksamensbekendtgørelsen*)
- Ministerial Order no. 114 of 3 February 2015 on the Grading Scale and Other Forms of Assessment of Study Programmes under the Ministry of Higher Education and Science (*Karakterbekendtgørelsen*).

Part 2. Admission requirements, prescribed period of study, affiliations, and title

Section 2. Admission requirements

Admission to the Master's degree programme is in accordance with the Ministerial Order concerning admission and enrolment.
(2) The following bachelor programmes grant direct admission to the master's programme in IT & Cognition:

- BSc in Cognitive data science from the University of Copenhagen
- BSc in Software Development or Data Science from the IT University of Copenhagen
- Any Bachelor's degree within computer science from the University of Copenhagen, Aarhus University, The Technical University of Denmark, Aalborg University or University of Southern Denmark
- Any Bachelor's degree within humanities including at least 15 ECTS credits in subjects within one or more of the following disciplines: Language Technology, Computer Science, Cognitive Science, and Linguistics from the University of Copenhagen, Aarhus University, Aalborg University or University of Southern Denmark.

(3) The faculty may admit applicants other than those mentioned in paragraph 2 if is assessed that the applicant has a bachelor's degree with at least 15 ECTS in subjects within one or more of the following disciplines: Language Technology, Computer Science, Cognitive Science, and Linguistics.
(4) All applicants must have English language proficiency on par with the Danish upper secondary school 'English level B' with a weighted average of minimum 2. See http://studies.ku.dk/masters for more information.
(5) The faculty decides the admission capacity for the master's programme in IT & Cognition each year. The admission capacity is published each year at www.studier.ku.dk/kandidat and www.studies.ku.dk/masters.
(6) If the number of qualified applicants exceeds the admission capacity, applicants will be prioritised in line with criteria at www.studier.ku.dk/kandidat and www.studies.ku.dk/masters.

Section 3. Prescribed period of study

The master's programme in IT & Cognition is prescribed to 120 ECTS.

Section 4. Affiliation

The master's programme in IT & Cognition falls under the auspices of the Study Board for Nordic Studies & Linguistics and the body of external examiners for the linguistic and cognitive subjects.

Section 5. Title

On successful completion of the master's programme with major subject in IT & Cognition, graduates are entitled to use the title Master of Science (MSc) in Information Technology (IT and Cognition). The title in Danish is cand.it i it og kognition.

Part 3. Technical requirements pertaining to study

Section 6. Reading texts in foreign languages

It is required that the student is able to read scholarly texts in English.

Section 7. Definition of a standard page

A standard page is defined in section 7 of the shared curriculum for study programmes at the Faculty of Humanities.
(2) For the master's programme in IT and Cognition, the following also applies: For technical text (mathematical or logical formulas) a standard page is defined as 1600 characters.

Section 8. Syllabus

The syllabus provisions are presented on study information on KUnet, under Exams → Exam types and rules → Curriculum.

Part 4. Competency goals and academic profile

Section 9. Competency description

Graduates with basic subject at master's level in IT and Cognition are able to contribute to developing advanced cognitive technologies, managing large volumes of textual and visual data, and identifying new industrial applications of cognitive technologies. They are also qualified for acceptance in PhD programmes where they can contribute to advanced research in language and image processing.

Through the IT and Cognition programme candidates acquire competences in language and image processing, data science and cognitive science with focus on computational modelling. Students also obtain skills in advanced scientific programming.

Section 10. Competency profile

The master's programme in IT & Cognition gives the student:

Knowledge:
- recent developments in cognitive science
- recent developments in machine learning and data mining
- major challenges in user interface design and human computer interaction
- the usefulness of cognitive models for information and communication technology (ICT) industries.

Skills:
- modelling cognitive processes using advanced computational methods including machine learning
- recognising, selecting and applying data mining methods for exploring and analysing large volumes of data, including texts and images
- applying important methods in text and image processing
- programming for scientific experiments and functional prototypes of cognitive systems
- evaluating and comparing models of cognitive processes on large amounts of data.

Competencies:
- working in a cross-disciplinary manner with challenging problems at the frontiers of cognitive technology
- understanding the potential of known methods in machine learning and data mining
- dealing with the complexity of human language, vision and cognition
- designing innovative and intelligent ICT using knowledge of language and human cognition
- carrying out major projects that meet industrial and research standards in an independent and creative manner.

Part 5. Structure and subject elements

Section 11. Structure

The study programme consists of subject elements corresponding to 120 ECTS, including a master's thesis corresponding to 30 ECTS.
(2) The thesis must be written in semester 4 and completes the studies. The student has to have passed 60 ECTS in order to register for the thesis.

Section 12. Study programme profiles/specialisations

The master's programme in IT & Cognition contains no profiles or specialisations.

Section 13. Master's programme in IT & Cognition

The study programme contains a 30 ECTS mobility window which students after application can use for studying abroad etc.
(2) *Computational Cognitive Science 1* and *Scientific Programming* must be completed, or you must be registered for the exams before you can register for the exam in *Computational Cognitive Science 2*.
(3) *Computational Cognitive Science 2* must be completed, or you must be registered for the exam before you can register for the exam in *Computational Cognitive Science 3.*
(4) *Language Processing 1* and *Scientific Programming* must be completed, or you must be registered for the exams before you can register for the exam in *Language Processing 2.*

(5) *Scientific Programming* must be completed, or you must be registered for the exam before you can register for the exam in *Introduction to Data Science*.
(6) It is recommended that you have taken *Vision and Image Processing* before you register for *Computational Cognitive Science 2*.
(7) The student has to pass 22,5 ECTS in restricted electives. The student can choose between *Specialisation 2, Specialisation 3, Specialisation 4, Free Topic* and/or *Academic Internship*.
(8) The table below shows the structured course of study for the master's programme in IT & Cognition.

Semester	**Subject elements:**			
1.	Computational Cognitive Science 1 7.5 ECTS	Language Processing 1 7.5 ECTS	Scientific Programming 7.5 ECTS	Vision and Image Processing 7.5 ECTS
2.	Computational Cognitive Science 2 7.5 ECTS	Language Processing 2 7.5 ECTS	Introduction to Data Science 7.5 ECTS	Specialisation 1 7.5 ECTS
3. (Mobility window)	Computational Cognitive Science 3 7.5 ECTS	Restricted electives 22.5 ECTS		
4.	Master's Thesis 30 ECTS			

Section 14. Subject elements of the programme

Computational Cognitive Science 1 (compulsory and constituent)
7.5 ECTS
Activity code: HIOK03682E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • foundational concepts in cognitive science relating to human processing of language and images • foundational concepts in computational cognitive models for processing language and images. Skills in • reading and presenting foundational literature in computational cognitive science • explaining key concepts, problems and theories in contemporary computational research in cognitive science. Competencies in • reading foundational research literature in computational cognitive science in a critical manner • discussing problems and theories in computational cognitive science research • making connections among the theories and methods discussed.
Teaching and working methods	Lectures.

Exam provisions	***Form of exam:*** Oral exam, set subject, no preparation. ***Scope:*** 30 minutes, including grading and feedback. ***Assessment:*** External exam, the 7-point grading scale. ***Regulations for group exams:*** The exam can only be taken individually. ***Exam language(s):*** English. ***Permitted exam aids:*** All. ***Make-up exam/resit:*** Conducted in the same manner as the original exam.
Special provisions	The oral presentation may last up to 10 minutes, followed by 10 minutes of discussion and 5 minutes of grading. Extent of re-exam: 30 minutes, including grading and feedback. The oral presentation may last up to 10 minutes, followed by 15 minutes discussion and examination on the syllabus.

Scientific Programming (compulsory and constituent)
7.5 ECTS
Activity code: HIOK03691E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • programming with linear algebra • algorithmic problem solving • the structure of programs. Skills in • implementing routine procedures relevant to data managing • implementing simple learning algorithms or related algorithms of importance to cognitive technologies • creating plots or related visualisations of data. Competencies in • designing and writing well-structured and maintainable programs • testing and documenting the developed programs.
Teaching and working methods	Lectures and tutorials
Exam provisions	***Form of exam:*** Active student participation. The active participation consists of: • 3-5 written assignments, 6-10 standard pages in total. ***Assessment:*** Internal exam with one examiner, Pass/Fail. ***Regulations for group exams:*** The exam can only be taken individually. ***Exam language(s):*** English. ***Permitted exam aids:*** All. ***Make-up exam/resit:*** Take-home assignment, set subject. 6-10 standard pages. 5 days are given for completion of the assignment.

Vision and Image Processing (compulsory and constituent)
7.5 ECTS
Activity code: NDAK12002E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • Theoretical and practical knowledge of the current research within computer vision and image analysis • Knowledge of common application areas. Skills in • The ability to read and apply the knowledge obtained by reading scientific papers • The ability to convert a theoretical algorithmic description into a concrete program implementation • The ability to compare computer vision and image analysis algorithms and assess their ability to solve a specific task. Competencies in • Understanding and analysing the main challenges in vision and image processing today • Describing common applications of importance to society • Describing and applying feature extraction methods and modeling techniques in image and vision processing • Analysing the main challenges in vision and image processing today • Implementation of selected methods.
Teaching and working methods	See kurser.ku.dk and the shared section of the BSc and MSc curricula (2018) for study programmes at the Faculty of Science University of Copenhagen.
Exam provisions	See kurser.ku.dk and the shared section of the BSc and MSc curricula (2018) for study programmes at the Faculty of Science University of Copenhagen.

Language Processing 1 (compulsory and constituent)
7.5 ECTS
Activity code: HIOK03701E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • foundational concepts in natural language processing • selected linguistic phenomena of relevance to natural language processing at various levels, e.g. morphology, syntax, semantics, discourse • the main challenges in natural language processing today and the methods applied • common language technology applications of importance to society. Skills in • implementing and evaluating selected methods in language processing. • documenting implementations and evaluations. Competencies in • analysing and discussing linguistic problems • proposing solutions using algorithmic techniques.
Teaching and working methods	Lectures or series of seminars.
Exam provisions	***Form of exam:*** Active student participation. The active participation consists of: • 3-5 written assignments, 6-10 standard pages in total. ***Assessment:*** Internal exam with one examiner, Pass/Fail. ***Regulations for group exams:*** The exam can only be taken individually. ***Exam language(s):*** English. ***Permitted exam aids:*** All. ***Make-up exam/resit:*** Take-home assignment, set subject. 6-10 standard pages. 5 days are given for completion of the assignment.

Computational Cognitive Science 2 (compulsory and constituent)
7.5 ECTS
Activity code: HIOK03712E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • frontier research in solving complex problems in computational cognitive science • frontier research in specific areas of cognitive science and computational cognitive models • advanced models, applications and systems relevant for specific areas of cognitive science. Skills in • analysing, implementing and evaluating models in computational cognitive science • analysing, creating and evaluating data resources for computational cognitive processing • analysing, performing and evaluating scientific computational cognitive experiments • discussing experimental and modelling work in the form of written scientific reports. Competencies in • applying cognitive models to own datasets and scientific experiments in specific focus areas • positioning theories and methods in specific focus areas of cognitive science and cognitive modelling against a broader scientific background.
Teaching and working methods	Lectures or series of seminars.
Exam provisions	***Form of exam:*** Take-home assignment, optional subject. ***Scope:*** 4-5 standard pages. ***Assessment:*** External exam, the 7-point grading scale. ***Regulations for group exams:*** The exam can be taken individually or as a group exam by 2-3 students but with individual assessment. For group exam, each individual participant's contribution to the assignment must be readily identifiable, and the joint part must not exceed 50% of the total work. The scope for the take-home assignment for groups are: 6-8 standard pages (2 students) or 8-10 standard pages (3 students). The make-up exam/resit can only be taken individually. ***Exam language(s):*** English. ***Permitted exam aids:*** All. ***Make-up exam/resit:*** Take-home assignment, set subject. 6-10 standard pages. 5 days are given for completion of the assignment. The make-up exam/resit can only be taken individually

Language Processing 2 (compulsory and constituent)
7.5 ECTS
Activity code: HIOK03721E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • natural language processing theories and methods • identifying complex problems and solutions in the context of research or practical applications in language processing. Skills in • applying feature extraction methods and modelling techniques in natural language processing • dealing with specific challenges arising from processing user-generated content • documenting and evaluating systems or system components. Competencies in • understanding advanced natural language processing methods and transferring the acquired knowledge to solutions of practical problems • presenting the problems, methods and solutions in scientific writing.
Teaching and working methods	Lectures or series of seminars.
Exam provisions	***Form of exam:*** Take-home assignment, set subject. ***Scope:*** 6-10 standard pages. 5 days are given for completion of the assignment. ***Assessment:*** Internal exam with one examiner, the 7-point grading scale. ***Regulations for group exams:*** The exam can be taken individually or as a group exam by 2-3 students but with individual assessment. For group exam, each individual participant's contribution to the assignment must be readily identifiable, and the joint part must not exceed 50% of the total work. The scope for the take-home assignment for groups are: 9-15 standard pages (2 students) or 12-20 standard pages (3 students). The make-up exam/resit can only be taken individually. ***Exam language(s):*** English. ***Permitted exam aids:*** All. ***Make-up exam/resit:*** Conducted in the same manner as the original exam but can only be taken individually.

Specialisation 1 (compulsory and constituent)
7.5 ECTS
Activity code: HIOK03731E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • theories and methods of relevance to information and cognitive technologies • problems related to the given area. Skills in • discussing and documenting problems of relevance to information and cognitive technologies • proposing and evaluating solutions. Competencies in • describing and analysing advanced topics within image or language processing or related cognitive technologies • designing and documenting relevant solutions.
Teaching and working methods	Lectures or series of seminars.
Exam provisions	***Form of exam:*** Take-home assignment, optional subject ***Scope:*** 4-5 standard pages. ***Assessment:*** Internal exam with one examiner, the 7-point grading scale. ***Regulations for group exams:*** The exam can be taken individually or as a group exam by 2-3 students but with individual assessment. For group exam, each individual participant's contribution to the assignment must be readily identifiable, and the joint part must not exceed 50% of the total work. The scope for the take-home assignment for groups are: 6-8 standard pages (2 students) or 8-10 standard pages (3 students). The make-up exam/resit can only be taken individually. ***Exam language(s):*** English. ***Permitted exam aids:*** All. ***Make-up exam/resit:*** Conducted in the same manner as the original exam but can only be taken individually.

Introduction to Data Science (compulsory and constituent)
7.5 ECTS
Activity code: NDAK16003E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • the general principles of data analysis • elementary probability theory for modeling and analysing data • the basic concepts underlying classification, regression, and clustering • common pitfalls in machine learning. Skills in • applying linear and non-linear techniques for classification and regression • elementary data clustering • visualizing and evaluating results obtained with machine learning techniques • identifying and handling common pitfalls in machine learning • using machine learning and data mining toolboxes. Competencies in • recognizing and describing possible applications of machine learning and data analysis in their field of science • comparing, appraising and selecting machine learning methods for specific tasks • solving real-world data mining and pattern recognition problems by using machine learning techniques.
Teaching and working methods	See kurser.ku.dk and the shared section of the BSc and MSc curricula (2018) for study programmes at the Faculty of Science University of Copenhagen.
Exam provisions	See kurser.ku.dk and the shared section of the BSc and MSc curricula (2018) for study programmes at the Faculty of Science University of Copenhagen.

Computational Cognitive Science 3 (compulsory and constituent)
7.5 ECTS
Activity code: HIOK03742E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • frontier research in specific areas of cognitive science and computational cognitive models • advanced models, applications and systems relevant for specific areas of cognitive science. Skills in • analysing and discussing state-of-the-art problems and methods in computational cognitive science • analysing, implementing and evaluating models in computational cognitive science • analysing, creating and evaluating data resources for computational cognitive processing • analysing, performing and evaluating scientific computational cognitive experiments • discussing experimental and modelling work in the form of written scientific reports. Competencies in • evaluating complex system architecture • assessing their relevance in relation to real-world applications • critically evaluating frontier research in cognitive technologies.
Teaching and working methods	Lectures or series of seminars.
Exam provisions	***Form of exam:*** Take-home assignment, optional subject. ***Scope:*** 4-5 standard pages. ***Assessment:*** Internal exam with one examiner, the 7-point grading scale. ***Regulations for group exams:*** The exam can be taken individually or as a group exam by 2-3 students but with individual assessment. For group exam, each individual participant's contribution to the assignment must be readily identifiable, and the joint part must not exceed 50% of the total work. The scope for the take-home assignment for groups are: 6-8 standard pages (2 students) or 8-10 standard pages (3 students). The make-up exam/resit can only be taken individually. ***Exam language(s):*** English. ***Permitted exam aids:*** All. ***Make-up exam/resit:*** Conducted in the same manner as the original exam but can only be taken individually.

Specialisation 2 (constituent)
7.5 ECTS
Activity code: HIOK03751E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • theories and methods of relevance to information and cognitive technologies • problems related to the given area. Skills in • discussing and documenting problems of relevance to information and cognitive technologies • proposing and evaluating solutions. Competencies in • describing and analysing advanced topics within image or language processing or related cognitive technologies • designing and documenting relevant solutions.
Teaching and working methods	Lectures and exercise classes.
Exam provisions	***Form of exam:*** Take-home assignment, optional subject. ***Scope:*** 4-5 standard pages. ***Assessment:*** Internal exam with one examiner, the 7-point grading scale. ***Regulations for group exams:*** The exam can be taken individually or as a group exam by 2-3 students but with individual assessment. For group exam, each individual participant's contribution to the assignment must be readily identifiable, and the joint part must not exceed 50% of the total work. The scope for the take-home assignment for groups are: 6-8 standard pages (2 students) or 8-10 standard pages (3 students) The make-up exam/resit can only be taken individually. ***Exam language(s):*** English. ***Permitted exam aids:*** All. ***Make-up exam/resit:*** Conducted in the same manner as the original exam but can only be taken individually.

Specialisation 3 (constituent)
7.5 ECTS
Activity code: HIOK03761E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • theories and methods of relevance to information and cognitive technologies • problems related to the given area. Skills in • discussing and documenting problems of relevance to information and cognitive technologies • proposing and evaluating solutions. Competencies in • describing and analysing advanced topics within image or language processing or related cognitive technologies • designing and documenting relevant solutions.
Teaching and working methods	Lectures or series of seminars.
Exam provisions	***Form of exam:*** Take-home assignment, optional subject. ***Scope:*** 4-5 standard pages. ***Assessment:*** Internal exam with one examiner, the 7-point grading scale. ***Regulations for group exams:*** The exam can be taken individually or as a group exam by 2-3 students but with individual assessment. For group exam, each individual participant's contribution to the assignment must be readily identifiable, and the joint part must not exceed 50% of the total work. The scope for the take-home assignment for groups are: 6-8 standard pages (2 students) or 8-10 standard pages (3 students) The make-up exam/resit can only be taken individually. ***Exam language(s):*** English. ***Permitted exam aids:*** All. ***Make-up exam/resit:*** Conducted in the same manner as the original exam but can only be taken individually.

Specialisation 4 (constituent)
7.5 ECTS
Activity code: HIOK03771E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • theories and methods of relevance to information and cognitive technologies • problems related to the given area. Skills in • discussing and documenting problems of relevance to information and cognitive technologies • proposing and evaluating solutions. Competencies in • describing and analysing advanced topics within image or language processing or related cognitive technologies • designing and documenting relevant solutions.
Teaching and working methods	Lectures and exercise classes.
Exam provisions	***Form of exam:*** Take-home assignment, optional subject. ***Scope:*** 4-5 standard pages. ***Assessment:*** Internal exam with one examiner, the 7-point grading scale. ***Regulations for group exams:*** The exam can be taken individually or as a group exam by 2-3 students but with individual assessment. For group exam, each individual participant's contribution to the assignment must be readily identifiable, and the joint part must not exceed 50% of the total work. The scope for the take-home assignment for groups are: 6-8 standard pages (2 students) or 8-10 standard pages (3 students) The make-up exam/resit can only be taken individually. ***Exam language(s):*** English. ***Permitted exam aids:*** All. ***Make-up exam/resit:*** Conducted in the same manner as the original exam but can only be taken individually.

Free Topic (constituent)
7.5 ECTS
Activity code: HIOK03781E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • open research questions or applied problems in the field of ICT, computational cognitive science, language and/or image processing. • theories and methods in the field of computational cognitive science, language and/or image processing. Skills in • identifying and formulating a relevant research problem, possibly in collaboration with a company or a research group, as well as a motivated hypothesis • identifying new interesting research problems or new methods of interest to research or industry. Competencies in • developing a formal model for testing the main hypothesis • comparing the model with relevant related work • implementing and evaluating the model empirically.
Teaching and working methods	Supervision.
Exam provisions	***Form of exam:*** Take-home assignment, optional subject. ***Scope:*** 11-15 standard pages. ***Assessment:*** Internal exam with one examiner, the 7-point grading scale. ***Regulations for group exams:*** The exam can be taken individually or as a group exam by 2-3 students but with individual assessment. For group exam, each individual participant's contribution to the assignment must be readily identifiable, and the joint part must not exceed 50% of the total work. The scope for the take-home assignment for groups are: 17-23 standard pages (2 students) or 22-30 standard pages (3 students) The make-up exam/resit can only be taken individually. ***Exam language(s):*** English. ***Permitted exam aids:*** All. ***Make-up exam/resit:*** Take-home assignment, optional subject. 16-20 standard pages. The make-up exam/resit can only be taken individually.
Special provisions	Before the take-home assignment is submitted for assessment, the topic of the assignment must be approved by the examiner.

Academic Internship (constituent)
15 ECTS
Activity code: HIOK03791E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • problems or challenges in a company or institution connected with the processing of human language and/or images, frontier problems or challenges in a research group connected with the processing of human language and/or images. Skills in • identifying and formulating a relevant research or applied problem, in collaboration with a company, institution or research group , as well as a motivated hypothesis • identifying new interesting research problems or new methods of interest to research or industry • identifying possible solutions to a given research or applied problem • communicating methodologies and solutions to the company, institution or research team. Competencies in • working out and limiting an applied problem or research aspect • developing a formal model for testing the main hypotheses • comparing the model with relevant related work • implementing and evaluating the model empirically • accounting for all the above aspects in a written report.
Teaching and working methods	Supervision. The academic internship must correspond to 275-325 hours of work at a public or private enterprise.
Exam provisions	***Form of exam:*** Take-home assignment, optional subject. ***Scope:*** 11-15 standard pages. ***Assessment:*** Internal exam with one examiner, the 7-point grading scale. ***Regulations for group exams:*** The exam can only be taken individually. ***Exam language(s):*** English. ***Permitted exam aids:*** All. ***Make-up exam/resit:*** Conducted in the same manner as the original exam.
Special provisions	The subject element is project-oriented and implies engagement at a workplace and submission of a written take-home assignment documenting the work done and its relation to the study programme. An internship attestation by the person in charge of the internship at the workplace must also be submitted. At the beginning of the project period, the examinee draws up a contract along with an entitled examiner and the contact person at the workplace in question. The contract must set out the objectives of the engagement at the workplace and mark out the scope and content of the specific tasks of the examinee. A template for this contract can be found at KUnet.

Master's Thesis (compulsory and constituent)
30 ECTS
Activity code: HIOK03801E

Academic targets	At the examination, the student can demonstrate: Knowledge and understanding of • recent developments in computational cognitive science, language processing and image processing. Skills in • defining one or more problem areas in a way that is relevant to contemporary research or industry • relating to relevant research literature • evaluating hypotheses by methodologically sound empirical experiments, mathematical proofs or clear arguments and theoretical considerations • Communicating the topic's issues in a well-structured, clear, focused and pedagogic manner appropriate to the target audience (students at master's thesis level without prior knowledge of the area covered) • Communicating in a conceptually and linguistically consistent manner that ensures that the claims, theses, arguments and conclusions are consistent both with each other and in relation to the thesis's underlying assumptions. Competencies in • mastering the academic terminology relevant to the topic, as well as the use of notes, citations, references, punctuation, spelling conventions, tables of contents and bibliographies, in line with the subject's standard practice • mastering the subject's relevant theories, interpretations, schools, points of view, etc. • displaying independence, e.g. by contributing to conceptual or technical innovation, conceptual clarification, by solving a problem, or by proposing new arguments or critique of pre-existing arguments • providing an adequate and accurate summary of the thesis's content and results • presenting and discuss the thesis at the oral defense.
Teaching and working methods	Supervision.

Exam provisions	***Form of exam:*** Take-home assignment and oral defense, optional subject. ***Scope:*** Take-home assignment: 50-60 standard pages including a ½-1 standard page summary. Oral defense: 45 minutes, including grading. ***Assessment:*** External exam, the 7-point grading scale. The take-home assignment weighs 80 % (the summary is included in the assessment) and the oral defense 20 %. ***Regulations for group exams:*** The exam can be taken individually or as a group (max 3 students) with individual assessment. If several students work together on a report, their individual contributions must constitute distinct units that can be identified and assessed separately. The joint part must not exceed 50% of the total. The scope for the take-home assignment for groups are: 75-90 standard pages (2 students) or 100-120 standard pages (3 students). ***Exam language(s):*** English. ***Permitted exam aids:*** All.

Part 6. Credit and transitional provisions

Section 15. Credit

Credit can be given for subject elements that have previously been passed on the master's programme in IT & Cognition in line with the table below.
(2) Students wishing to apply for credit for subject elements that have previously been passed on the master's programme in IT & Cognition, that do not appear in the table below, must contact the study board for an individual decision.
(3) Credit for other subject elements is granted in accordance with the rules and regulations in section 19 of the shared curriculum for study programmes at the Faculty of Humanities.

2015 curriculum	ECTS	2019 curriculum	ECTS
Cognitive Science 1 (HIOK03551E)	7.5	Computational Cognitive Science 1 (HIOK03682E)	7.5
Scientific Programming (HIOK03561E)	7.5	Scientific Programming (HIOK03691E)	7.5
Vision and Image Processing (NDAK12002E)	7.5	Vision and Image Processing (NDAK12002E)	7.5
Language Processing 1 (HIOK03571E)	7.5	Language Processing 1 (HIOK03701E)	7.5
Cognitive Science 2 (HIOK03581E)	7.5	Computational Cognitive Science 2 (HIOK03712E)	7.5
Language Processing 2 (HIOK03591E)	7.5	Language Processing 2 (HIOK03721E)	7.5
Specialization 1 (HIOK03601E)	7.5	Specialisation 1 (HIOK03731E)	7.5
Introduction to Data Science (NDAK16003E)	7.5	Introduction to Data Science (NDAK16003E)	7.5
Cognitive Science 3 (HIOK03611E)	7.5	Computational Cognitive Science 3 (HIOK03742E)	7.5
Specialization 2 (HIOK03621E)	7.5	Specialisation 2 (HIOK03751E)	7.5
Specialization 3 (HIOK03631E)	7.5	Specialisation 3 (HIOK03761E)	7.5
Specialization 4 (HIOK03661E)	7.5	Specialisation 4 (HIOK03771E)	7.5
Free Topic (HIOK03651E)	7.5	Free Topic (HIOK03781E)	7.5
Academic Internship (HIOK03641E)	15	Academic Internship (HIOK03791E)	15

Section 16. Commencement and interim provisions

Once this curriculum enters into force, it will only be possible to take exams under the old curriculum in line with the study board's closure plan. The closure plan is available on KUnet under Planning your studies → Rules and exemptions → Curricula and rules.

Part 7. Exemptions, date of commencement and approval

Section 17 Exemptions

Under special circumstances, the study board may grant exemptions from rules contained in the curriculum that have been set by the study board.

Section 18. Commencement

This curriculum enters into force on 1 September 2019 and applies to students who enrol in the master's degree programme in IT & Cognition on 1 September 2019 or later.

Section 19. Approval

This curriculum was approved by the Study Board for Department of Nordic Studies and Linguistics on 25 October 2018.

The curriculum was approved by the Dean of the Faculty of Humanities on 9 January 2019.

The curriculum was amended by the Faculty of Humanities on 27 August 2021.

This curriculum was amended and approved by the Study Board for Department of Nordic Studies and Linguistics on 22 November 2021.

The amended curriculum was approved by the Dean of the Faculty of Humanities on 9 December 2021**.**

The curriculum was amended by the Faculty of Humanities on 5 May 2022.

The curriculum was corrected by the Faculty of Humanities on 6 March 2023.

The curriculum was amended by the Faculty of Humanities on 21 December 2023.

The curriculum was corrected by the Faculty of Humanities on 4 March 2024.