Kristiania

Programme description

Master of Science in Information Systems: Management and Innovation

120 credits
2023-2025

Full time *(two years)* or
Part time *(first 60 credits with 50% progression, last 60 credits with 100% progression)*

1. Introduction

Information Systems (IS) is both a professional discipline and an academic field, aiming to bridge the technical capabilities of IT with business needs. As an academic discipline, IS investigates a wide range of topics, such as IS strategy and management, business systems, IS development methods, user behaviour and usability. It also investigates more theoretical issues, such as the relationship between technology and the social world, and the dynamics of the Information Society.

As technologies evolve and get adopted, they influence organisations and societies in different and often unpredictable ways. Navigating this complex and changing environment needs a deeper understanding of academic traditions stemming from information systems and innovation management. The specialization in Management and Innovation will focus on management of information systems and systematic development of solutions for sustainable utilization of information technology from an organisational and societal perspective. The curriculum focuses to develop knowledge and skills concerning innovative IT solutions, strategies and methods that are essential to businesses and industry both now and in the future, which includes theory and practice of planning and implementing IT projects. The courses include Introduction to IS research, Innovation – Concepts and Perspectives, IS Infrastructures and Platforms, IT Strategy and Architecture, and Information Risk and Security, and underpins this by enhancing students' core information systems understanding, including Ethics, Sustainability and Society, Research Methods, Proposal Development, tailoring them to meet the needs of this specialization. Management and Innovation specialization is designed to provide students with a critical understanding and specialist knowledge to navigate the complex nature of information systems domain.

The awarded title is: Master of Science in Information Systems.

IS Masters with specialization in Management & Innovation are qualified to work as a Business Architect, Project Manager, IT Security Consultant, IT Advisor/Consultant, IT Manager, Business Developer, IT Concept Developer, and more general Information Systems roles such as Business Analysts and Consultants. After completing the master's programme, the candidate is also formally qualified for a PhD study in a related area of research.

1.1 Prerequisites

Applicants must meet the following requirements:

- Bachelor's degree in IT, management, economics, e-business, statistics, or marketing, with an average grade of minimum C equals minimum 2,7 ECTS. Relevant practices, or other special considerations, may in some cases weigh up for non-compliant grade

requirements.

- The applicants must also write an motivational letter of 400-500 words in English.

2. Objective

Learning outcome at the Master of Science in Information Systems programme level

Knowledge

The candidate...

- has an advanced knowledge of information systems as a research field, in terms of theories, knowledge claims, research methods and professional standards.
- can apply this knowledge, and to reflect on how information systems contribute to business, decision-making activities and societal aims.

Skills

The candidate...

- has acquired practical skills in analysing complex IS problems, designing or recommending solutions, and in measuring and evaluating results.
- has strong skills in applying research methods and techniques.

Competence

The candidate...

- can take responsibility for conducting independent research and/or development project at a high standard and in accordance with norms for research ethics.
- can choose the appropriate research approach, to choose or develop a solution that meets the organizational requirements, provide value while considering sustainability goals.
- can handle organizational relationships ethically, professionally, and to evaluate and communicate the results in a systematic way.

Learning outcomes at specialization level in Management and Innovation

Knowledge

The candidate...

- has advanced knowledge of innovation theories and frameworks and key characteristics of digital innovation.
- has thorough knowledge related to management of digital platforms, ecosystems, and information infrastructures.

- can apply key theories on the role of information technology for individuals, teams, organisations, and society.
- can analyze the role of information risk and security in an organisation.
- can understand key management theories and describe the theories of alignment between business, IS strategy and IT architecture.

Skills

The candidate...

- can conduct an independent strategic analysis of an organization and assess alternative solutions.
- can critically evaluate information systems strategies for contemporary organizations.
- can independently and systematically develop concepts for digital innovation.

Competence

The candidate...

- can take the responsibility to participate and contribute to an innovation process in an organization.
- can communicate extensive independent work and master the terminology related to innovation research.
- can communicate about innovation strategy, analysis, and its implications, both with specialists and the general public.
- can contribute to new thinking related to information technology and innovation processes.

3. Structure

The courses are thought as modules, meaning that the students usually will complete one module before starting the next. For full-time students, first year offers eight courses. For part-time students, these eight courses are taken over two years. The second year (third year for part-time students) offers an elective/exchange semester and a Master Thesis semester. Full-time and part time students follow the same progression in their last academic year.

Semester	Master of Science in Information Systems: Management and Innovation Full time			
1. semester	Introduction to IS Research 7,5 ECTS	Innovation – Concepts and Perspectives 7,5 ECTS	IS Infrastructures and Platforms 7,5 ECTS	Ethics, sustainability, and society 7,5 ECTS
2. semester	IT Strategy and Architecture 7,5 ECTS	Information Risk and Security 7,5 ECTS	Research Methods 7,5 ECTS	Proposal Development 7,5 ECTS
3. semester	Elective 30 ECTS			
	Exchange 30 ECTS			
4. semester	Master Thesis 30 ECTS			

Table 1: Full-time program structure.

Compulsory courses	Elective courses

* There may be changes in which electives/elective program course are offered

Semester	Master of Science in Information Systems: Management and Innovation Part-time			
1. semester	Introduction to IS Research 7,5 ECTS	IS Infrastructures and Platforms 7,5 ECTS		
2. semester	IT Strategy and Architecture 7,5 ECTS	Research Methods 7,5 ECTS		
3. semester	Innovation – Concepts and Perspectives 7,5 ECTS	Ethics, sustainability, and society 7,5 ECTS		
4. semester	Information Risk and Security 7,5 ECTS	Proposal Development 7,5 ECTS		
5. semester	Elective 30 ECTS			
	Exchange 30 ECTS			
6. semester	Master Thesis 30 ECTS			

Table 2: Part-time program structure.

Compulsory courses	Elective courses

There may be changes in which electives/elective program course are offered

3.1 Academic progression

The academic progression presents the overall model for the Master of Science in Information Systems specialization in Management and Innovation. The first year provides the students with knowledge and skills in Introduction to IS Research, Data Management, Advanced Visual Analytics, Ethics, Sustainability and Society, Introduction to Applied Statistics, Applied and Big Data Analytics, Research Methods, and Proposal Development.

The second year gives the students gives the opportunity to deepen within elective subjects and/or exchange to one of the international institutions that this programme has agreement with. The last semester has a stronger focus on competence, aiming at synthesizing knowledge and skills into the ability to conduct a Master Thesis. During the work with the Master Thesis the students have the opportunity to demonstrate expertise in their chosen research area. Student will acquire specialized problem-solving skills, being able to plan and conduct the steps in the research and/or development process at a high methodological standard. When working with the Master Thesis, a close relationship with a company is recommended.

The academic progression is described according to the full-time programme. Part-time students spend two years completing the first 60 credits (50% progression), while the last 60 credits are completed within one year (100% progression). See tables above for an overview of progress of study for full- and part time progression.

3.2 Courses

Course name	Credits	Description
Introduction to IS Research	7,5	The course provides an introduction to the IS research field. Students will gain advanced knowledge of the key concepts and theories of IS research. They will acquire specialised problem-solving skills, being able to analyse and synthesize a research case. They shall take responsibility to a literature review of a specific IS topic. Central topics include Information Systems as a research field, IS development, IS innovation, IS as sociotechnical and complex systems, Introduction to research methods in IS, Basic concepts and theories in IS, Literature reviews and writing style.
Innovation - Concepts and Perspectives	7,5	The course aims at providing insight into theoretical and practical aspects of innovation. Students will gain advanced knowledge of key concepts and theories of IT-supported innovation. They will acquire specialised problem-solving skills, being able to analyse innovation cases using different models. They shall take responsibility to conduct a review of the current state-of-the-art in innovation theory. Central topics includes innovation theories and concepts, digital innovation, service innovation and innovation in organizations.

IS Infrastructure and Platforms	7,5	The module introduces the students to large-scale information systems and these are designed, deployed and how such systems evolve in organizations and markets. The students are introduced to the IS literature on information infrastructures and multisided digital platforms and ecosystems. Especially, the module covers theories of path constitution, generativity, and installed-base cultivation in order to understand and explain the dynamics of information infrastructures and digital platforms. Based on these theoretical insights, the students gain competencies for designing and governing infrastructures and platforms.
Ethics, sustainability, and society	7,5	The main aim of this course is to provide students with the fundamental knowledge of ethics and sustainability necessary for responsible innovation and the development of new information technologies (IT) in the modern society. The central topics include the role of ethics in responsible innovation and IT development; social, economic, and environmental impacts of innovations and new ITs; and how IT development and innovation can contribute to achieving the UN Sustainable Development Goals. In covering ethical and sustainability issues, the course addresses the perspectives of various stakeholders at the individual level (IT developers, innovators, consumers, investors), the organizational level (commercial, public, and non-governmental organizations), and the societal level (local and regional communities, nations, international society). Group work on possible solutions to real-life ethical and sustainability challenges constitutes an essential part of the course.
IT Strategy and Architecture	7,5	This course highlights the importance of IS Strategy and architecture in contemporary organisations. Students will gain advanced knowledge of key theories and concepts of strategic use of IS. They will acquire specialised problem-solving skills, being able to conduct a strategic analysis based on accepted frameworks, and to analyse the implications for a company's IT architecture. They shall take responsibility to plan and accomplish an IS strategy process for a case organisation, with a proposed architecture. Central topics includes enterprise architecture, IT strategizing, IT strategy alignment and Business Process Modelling.
Information Risk and Security	7,5	Students will gain advanced knowledge of key concepts, laws, standards, technologies and ethics within IT security. They will acquire specialised problem-solving skills, being able to perform a comprehensive information risk analysis, and suggest the necessary controls. They shall take responsibility to conduct the design of an IT security plan for a case organisation, and assess the quality.

IS Infrastructure and Platforms	7,5	The module introduces the students to large-scale information systems and these are designed, deployed and how such systems evolve in organizations and markets. The students are introduced to the IS literature on information infrastructures and multisided digital platforms and ecosystems. Especially, the module covers theories of path constitution, generativity, and installed-base cultivation in order to understand and explain the dynamics of information infrastructures and digital platforms. Based on these theoretical insights, the students gain competencies for designing and governing infrastructures and platforms.
Research Methods	7,5	This course is intended as an introduction to research methodology and the research process. This introduction gives the students an overview of the basic concept, methods, and practice of research. Research is a cyclical process where new and carefully planned investigations build and extend on established work. The aim is to provide students with a fundamental understanding of research as a conceptual, empirical, and practical approach to gathering new insight and knowledge. The content provides a broad overview of how researchers work within the fields of economy, innovation, and technology. It presents students with relevant methods from these domains, along with their possibilities and limitations. Students will learn a systematic approach to empirical investigation, including literature search, research design and methodology, qualitative and quantitative analyses, and the presentation and evaluation of results. At completion of the course, students will be able to study and interpret existing research on a topic and suggest approaches to broaden or deepen knowledge within a given topic.
Proposal development	7,5	The overall objective of this course is to help students conceptualize and prepare a timely and relevant research proposal, and to nurture a sense of inquisitiveness and active participation in research. The course aims at offering insight into the process behind a successful research project. It has an applied approach that involves collaborative and reciprocal partnerships between the university (faculty, staff, and/or students) and external communities for the mutually beneficial exchange of knowledge and resources. The research proposal forms the basis for the master thesis and the allocation of supervisor(s).

3.3 Elective courses

Within the students' 3rd semester (5th for the part-time students), they will have to choose from electable course in the program, which will give them the opportunity to further engage in in-depth knowledge of a topic of interest, or to broaden their scope and area of knowledge by

selecting a related module that expands their horizon. What topics that can be chosen may vary from year to year. The concrete topics are presented and published therefore early in the spring, in the students' 2nd semester (4th for the part-time students), together with the deadline for enrolment in individual electable subjects. The proposed elective subjects are presented below (all 7,5 ECTS).

Course	Credit	Description
Consulting and Leadership	7,5	This course focuses on the soft skills in management of information systems. Students will gain advanced knowledge of theories on leadership, change agents, ethics and required skills within IT-consultancy. They will acquire specialized problem-solving skills, being able to master the personal and organizational techniques required to participate in a change process, practicing leadership and developing professional skills within consulting. They shall take responsibility to conduct a minor consulting project thru an agreement, plan and evaluation.
Agile Project Management	7,5	Organizations need to develop project managers who can complete projects on time and within budget and this course addresses challenges such as the ability to manage projects and stakeholders, risk assessment and agile planning. Students will gain advanced knowledge of the key theories of project management and agile development. They will acquire specialised problem-solving skills, being able to plan and run a time-boxed iteration, and to use a project management tool. Students will take conduct plan, organise and control an agile IS project.
Customer Journey and CRM	7,5	Customers are omnichannel-oriented. They increasingly expect to interact with organizations in a seamless way, combining aspects across different channels at different stages of their decision journey. This course provides the forefront of knowledge on how to support the omnichannel customer experience, what the customer expect, how organizations can use CRM to leverage their presence, and what organizations need to support an omnichannel strategy. Students will gain advanced knowledge of key theories and concepts of omnichannel and CRM. They will acquire specialized problem-solving skills, being able to plan omnichannel activities, and to configure CRM solutions. They shall take responsibility to conduct the planning and implementation of CRM activities and evaluate the business value taking into account meeting ethical and sustainability goals.
Advanced Visual Analytics	7,5	Data and visual analytics are an evolving field concerned with analyzing, modeling, and visualizing complex high-dimensional data. This course will introduce students to the data visualization domain by covering state-of-the-art modeling, analysis and advanced visualization techniques. It will emphasize practical challenges involving complex real-world data and include real-world case studies and hands-on work with several leading visual analytics tools and programming languages. Students will gain advanced knowledge of the art of decision-making, as well as acquire specialized problem-solving skills and deliver value to organizations through the development of advanced visualizations.
IT Governance	7,5	This course will provide the student with an understanding of IT Governance as an important activity for securing business value of IT investments. Students will gain advanced knowledge of key

		theories and frameworks of IT governance. They will acquire specialised problem-solving skills, being able to select and use a governance framework to analyse a business case. They shall take responsibility to plan, organise and evaluate an IT governance process.

Table 4: Example electives overview.

3.4 Master Thesis (30 credits)

The aim of this course is to provide the student with an opportunity to develop systematic understanding and critical awareness on the solution of a relevant problem in the student's focal area. Students will gain advanced knowledge of the research process at master level in information systems, including a deep knowledge of selected theories. They will acquire specialized problem-solving skills, being able to plan and conduct the steps in the research or development process at a high methodological standard. They shall take responsibility to conduct a well planned and executed project at master level.

On a more detailed level, the student will, based on observations of the industry and the existing body of knowledge, develop a research question. Students will also be able to connect their Master Thesis work to one of the ongoing research projects at School of Economics, Innovation and Technology. Furthermore, the student will conduct an extensive literature review in order to map what is already known about the chosen research question. Building on this, the student will carry out the research. This usually includes collecting his or her own data, which can be done by means of surveys, interviews, experiments, observations, and more. The data are to be analysed in a thorough manner before conclusions can be made. Lastly, the student has to reflect on ethical issues, limitations, future research and the value of the contributions of the conducted master thesis.

Course	Credit	Description
Master Thesis	30	The master thesis is a research project in which students will apply the knowledge acquired during their studies. It is a crafted scholarly document presenting research questions and original arguments based on scientific methods under the guidance of an advisor. The thesis gives the student the opportunity to demonstrate expertise in their chosen research area. Students will acquire specialized problem-solving skills, being able to plan and conduct the steps in the research and/or development process at a high methodological standard. They shall take responsibility to conduct a well planned and executed project.

Table 5: Master Thesis overview.

4. Teaching methods and assessment

4.1 Pedagogical platform and teaching methods

The programme uses a number of varied forms of teaching in order to encourage learning:

- Lectures, to introduce theoretical issues and domain knowledge
- Seminars and group work, to give the students the opportunity to discuss different perspectives, integrate with previous knowledge, and practice analytical assessments with provided case materials.
- Directed and student-selected readings, to initiate an interest in a domain of knowledge and to develop solid knowledge base.
- Oral presentations, to develop personal communication skills and promote team-work environments.
- Essay and thesis writing, in order to synthesize knowledge and present analyses and communicate results
- Supervision, to provide detailed feedback and discussion of students' projects in close interaction with Kristiania University College researchers.

4.2 Forms of assessment

Regarding assessment forms, the students usually written home exam during the modules. The objective of these assessment forms is to prepare and train the student for writing the Master's Thesis. In addition, some oral presentations, multiple choice exam, individual written exams are examples of other assessment forms. There is one assessment in each module. Some modules do also have individual or group compulsory assignments. For the Master's Thesis, the assessment consists of one written essay (The Master's Thesis report) and an oral defense.

5.   Internationalization and student exchange

With reference to *Studietilsynsforskriften* of February 2017 (§2-2, sections 7 and 8), the study has arrangements for internationalization and international student exchange.

5.1 Internationalization

In this context internationalization is understood as placing the study programme in an international context and that the students are exposed to a multitude of perspectives.

All of the reading materials and lectures are given in english, and the study uses both norwegian and international cases. The studends who wish to do so can write their Master Thesis in English, as well as choose an international case for their reseach. The program uses international lectures and guest lecturers. Our lectures also conduct reseach with international coauthors and play an active role in both national and international confrences.

For specific internationalization schemes, see the subject description of the study.

5.2 International student exchange

As regards to arrangements for international student exchange, Kristiania University College has the following mobility program;

- Nordplus in the Nordic region or the Baltic States
- ERASMUS + in Europe
- "Study Abroad", for students in and outside Europe

Kristiania Univeristy College has agreements on student exchanges and academic relevance secured by the academic field of study. Exchange courses from partners are approved by academic supervisors, for admission to the program, with an equivalent of 30 credits.

For nominations for student exchange, requirements are set for grades and motivation applications. For some study programmes there are requirements for documentation of creative work / portfolios.

For students at Master of Science in Information Systems: Management and Innovation student exchange is possible during the third semester. For outgoing students, Kristiania University College, has established student exchange agreements with the following institutions:

- [Kingston University](), UK
- [Arcada University of Applied Sciences](), Finland
- [Seoul National University of Science and Technology](), South Korea
- [University of Hertfordshire](), UK
- [Assumption University](), Thailand

Changes to approved universities may occur. Information about possible exchange stays for the relevant year is therefore published online and on the learning platform.

- [Kingston University](), UK
- [Arcada University of Applied Sciences](), Finland