



ASIIN Seal & European Labels

Accreditation Report

Bachelor's Programme

Industrial Management and Information Systems

Master's Programmes

Industrial Management

Information Systems

Technical Communication

Provided by

University of Vaasa

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A About the Accreditation Process

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for ¹	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC) ²
Kauppätieteiden kandidaatin tutkinto, tuotantotalouden ja tietojärjestelmätieteen ohjelma	B.Sc. Industrial Management and Information Systems	ASIIN, Euro-Inf® Label	-	06, 07
Industrial Management	M.Sc. Industrial Management	ASIIN, Euro-Inf® Label	-	06, 07
Kauppätieteiden maisterin tutkinto, tietojärjestelmätieteen maisteriohjelma	M.Sc. Information Systems	ASIIN, Euro-Inf® Label	-	04, 07
Kauppätieteiden maisterin tutkinto, Teknisen viestinnän maisteriohjelma, pääaineena tietojärjestelmätiede	M.Sc. Technical Communication	ASIIN, Euro-Inf® Label	-	04, 07
Date of the contract: 19.10.2017 Submission of the final version of the self-assessment report: 27.06.2019 Date of the on-site visit: 08.-09.10.2019 at: Vaasa, Finland				
Peer panel: Prof. Dr. Susanne Strahnger, Technical University Dresden;				

¹ ASIIN Seal for degree programmes; EUR-ACE® Label: European Label for Engineering Programmes; Euro-Inf®: Label European Label for Informatics

² TC: Technical Committee for the following subject areas: TC 04 - Informatics/Computer Science; TC 06 - Industrial Engineering; TC 07 - Business Informatics/Information Systems;

A About the Accreditation Process

Prof. Dr. Gregor Engels, Paderborn University; Prof. Dr Dieter Pumpe, Beuth University of Applied Sciences Berlin; Jürgen Schaldach, T-Systems GEI GmbH	
Representative of the ASIIN headquarter: Dr. Martin Foerster	
Responsible decision-making committee: Accreditation Commission for Degree Programmes	
Criteria used: European Standards and Guidelines as of 15.05.2015 ASIIN General Criteria, as of 10.03.2015 Subject-Specific Criteria of Technical Committee 04 – Informatics as of 29.03.2018, Technical Committee 06 – Industrial Engineering as of 20.09.2019 and Technical Committee 07 – Information Systems as of 08 December 2017.	

B Characteristics of the Degree Programmes

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF ³	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Industrial Management and Information Systems	B.Sc.	- Industrial Management - Information Systems	6	Full time		6 Semester	180 ECTS	WS
Industrial Management	M.Sc.		7	Full time		4 Semester	120 ECTS	WS
Information Systems	M.Sc.		7	Full time		4 Semester	120 ECTS	WS
Technical Communication	M.Sc.		7	Full time		4 Semester	120 ECTS	WS

For the Bachelor's programme Industrial Management and Information Systems, the institution has presented the following profile in the self-assessment report:

„At the School, business is combined and connected with technology in a unique way. The joint programs for Industrial Management and Information Systems (“teollisuusekonomi”) combines business, production technology and IT skills. A majority of the bachelor's degree studies are common to all students in the program and at the end of the degree the student specializes in information systems or in the industrial management.

A versatile set of training provides the capability to work on demanding managerial tasks in business and technology, including in energy companies and organizations. Training is

³ EQF = The European Qualifications Framework for lifelong learning

designed to provide, in addition to scientific and theoretical skills, skills for decision-making and management-related tasks as well as practical expert work.

Graduates from the programme do have a good track record of to be employed, and they are most often placed in different fields of industry in design, expertise, research, teaching, product development, production and sales. “

For the Master's programme Industrial Management, the institution has presented the following profile in the self-assessment report:

„The Programme provides students with capabilities to work in tasks that require high level of business or technological knowledge. These can be for example in production, service or knowledge sectors. Both the local business network and international connections, e.g. ESTIEM (European Students of Industrial Engineering and Management) are utilised in teaching. Students can choose to concentrate either in the area of technology management and product development or in the area of production management and logistics. The variety of teaching methods is used in advanced modules in IM M.Sc. Often students plan and conduct small research projects combining both a theoretical framework and an empirical study in firms.

The IM M.Sc. studies focus on problem solving and social interaction coupled with a wide variety of study tasks by systematic assessment. The study process encompasses both local business operations and technological advantages on a global scale. The outcome is a skill set that allows the student to solve problems on product development, service development, production, automation, energy production and environmental issues in a networked industry setting. The focus can lie on strategy, productivity, impact, quality, etc.

Special emphasis is on students' communication capabilities, both written and oral. The objective of seminars, business and case competitions, and thesis seminars is that giving presentation is a routine that each student can handle smoothly. All the master level modules (TUTA3xxx) in IM M.Sc. are in English.“

For the Master's programme Information Systems, the institution has presented the following profile in the self-assessment report:

„In this Programme, students acquire the skills to use information technology for purposes of business, for example. Key areas of the studies include management of the ICT Function, such as project management and enterprise architectures. In addition, the student can get

acquainted with the service business and the design and development of IT services, without forgetting their usability. The student develops a vision of what his professional role is in a digitalizing society and in business, as a designer, a developer, and various information systems (e.g. project manager or IT manager). The student also has the opportunity to incorporate modules related to the energy industry and develop their understanding of the digitization of the energy industry (Energy Informatics).“

For the Master’s programme Technical Communication, the institution has presented the following profile in the self-assessment report:

„The programme combines studies in Information Science, Communication Sciences and Economics. The studies consist of the joint major subject studies in Information Science and Communication Sciences, the core of which is technical communication. From the point of view of the degree program, technical communication means for example different products and services the production, transmission and reception of related information - now largely through the network. In the program, it is key to consider the user in designing various technical services, technical documentation a clear structure and high quality, and a clear structure and user-orientation of user interfaces. Economic studies strengthen the business orientation of the program, for example, how different systems work can support and develop business. The training program is born from the needs of the local energy industry in terms of technical documentation and user-oriented design professionals. Students graduated from TC M.Sc. cross the boundaries of technology and humanities and bring multi-disciplinary views on various business intelligence tasks.“

C Peer Report for the ASIIN Seal⁴

1. The Degree Programme: Concept, content & implementation

Criterion 1.1 Objectives and learning outcomes of a degree programme (intended qualifications profile)

Evidence:

- Self-Assessment Report
- Appendix 31A: Objectives-Module-Matrices
- On-Site Discussions

Preliminary assessment and analysis of the peers:

For the degree programmes under review, the HEI presents an extensive description of learning outcomes in the self-assessment report (SAR). This description is accompanied by learning module matrices for each programme, matching learning objectives, modules and the ASIIN Subject-Specific Criteria (SSC).

The University clearly defines itself in the SAR as well as during the on-site discussions as an institution of mainly business background with a focus on interdisciplinary skills needed by the local industry in order to comply with the requirements of technically-based, internationally active companies. The peers can find this profile reflected in all of the four programmes under review. In the Bachelor programme, all students are supposed to acquire a business background during the first part of their studies before choosing one of the two specializations in Information Systems and Industrial Management. In both directions, they are supposed to be prepared for taking up professional positions between the management level of the companies and the more technical departments. Both specializations can be further deepened either in the Master Industrial Management with special focus on aspects such as product development, service development, production, automation, energy production and environmental issues or in the Master Information Systems with a stronger focus on Computer Science and Project Management. As a third option, the Master programme Technical Communication is supposed to qualify students for the professional field

⁴ This part of the report applies also for the assessment for the European subject-specific labels. After the conclusion of the procedure, the stated requirements and/or recommendations and the deadlines are equally valid for the ASIIN seal as well as for the sought subject-specific label.

of Human-Computer Interaction and Communication Sciences with a special focus on aspects of User Experience. Thus, the peers understand that all of the programmes under review combine a significant part of business studies with more or less specific technical elements. Further, they pursue a very broad approach to the respective subjects leaving the graduates much room for individual choices of careers in a local environment that is in need of qualified workers in all of the previously outlined specialties.

For each programme, the University has described a set of intended Learning Outcomes (ILOs) that cover generic skills as well as subject-specific qualifications. These ILOs are published in the respective Study Handbooks accessible online through the University website. For the SAR, the University has prepared an English translation of the ILOs, however, on the website these are only accessible in Finnish (with the exception of the English Master programme in Industrial Management). The peers understand that the programmes are generally taught in Finnish, but given the University's goal to further internationalize its programmes an English presentation of all programmes appears very helpful to them.

For the Bachelor programme Industrial Management and Information Systems, the ILOs define that students should learn the basics of business and project management, know how to use computer software and how to retrieve information. Further, they should be able to apply basic methodological skills as well as mathematical methods. Scientific writing, reading and presenting in Finnish, Swedish and English should also be achieved in order to prepare graduates for continuing their studies on Master level. All graduates are supposed to be able to produce simple computer programmes and master basics of quality management. In addition, they should know the concepts of sustainable development and understand the core factors of energy business. Beyond these general and business skills, the students choose between one of the two specializations for which different ILOs have been described. In the case of a major in Industrial Management the graduates should be able to explain how different factors have an effect on operations, understand the operating principles of production facilities, understand the importance of the order and supply chain as well as control the methods of managing it. While the peers think that these objectives describe quite precisely the goal of this major they are less convinced by the ILOs for the major in Information Systems. There, it is targeted that graduates should be able to apply information systems or technical communication in different fields and that students should be able to follow the developments in the field of information systems. The peers are of the opinion that the learning outcomes for the Information Systems should be made more specific in order to precisely express what a graduate of this specialization is supposed to be able to know, understand and do. From the discussions on-site and from the presented curricula, the peers gather that the content of this specialization comprises the most relevant aspects that need to be expected from an Information Systems programme

as they are defined by the Subject-Specific Criteria of the Technical Committee 07 – Information Systems as well as the Euro-Inf Criteria of the European Quality Assurance Network for Informatics Education (EQANIE). Consequently, they conclude that in order to comply with these international standards the learning outcomes for the Information Systems major need to be revised.

In the Master Industrial Management (IM), students are supposed to be enabled to apply their deepened knowledge of industrial management either in the area of technology management and product development or in the area of production management and logistics. They should be qualified to lead the technology development of companies. Therefore, a special focus is laid on communication skills both written and oral. Since the programme is taught in English, the students should be competent to work in intercultural and international environments in the different fields of production management, product development, risk management and other tasks that combine business and technological knowledge. Further, all graduates should be highly skilled in scientific thinking, researching and reporting. Thus, they should be allowed to continue their academic career on a doctoral level. The peers discuss the learning outcomes of the IM programme and conclude, that they adequately reflect the professional as well as academic requirements of the subject and comply with the expectations of the European Framework Level 7 (equivalent to Master degree programmes). Measured against the Subject-Specific Criteria of the Technical Committee 06 – Industrial Management it becomes apparent that the technical and engineering content of the programme is very limited. Although all students are supposed to understand technical questions to a certain degree, this is certainly not the emphasis of the programme in comparison with the management skills. Consequently, the programme does not comply sufficiently with the standards and criteria of the EUR-ACE Label.

The Master programme Information Systems (IS) clearly takes up on the Information Systems major of the Bachelor programme previously discussed. It is envisaged that graduates of the programme know how to improve business operations with the help of ICT solutions. Generally, they should be able to design, execute and manage an information systems project and to work as a specialist, manager or developer in the field of information systems. Apart from the technical expertise, students shall acquire in-depth research and scientific writing skills and be enabled to apply empirical (qualitative, and quantitative) as well as design science research methods. All of this should qualify them to continue the studies on a doctoral level. The peers assess the learning outcomes of the programme and agree that they are in line with the expectations of the European Framework Level 7 as well as the respective Subject-Specific Criteria of the ASIIN Technical Committee 07 – Information Systems. Thus, they also comply with the Criteria for programmes of Information Systems of EQANIE and qualify for the award of the Euro-Inf Label.

For the Master programme Technical Communication (TC), the University defines six ILOs according to which graduates of the programmes are supposed to know how to analyse the role of technical communication in developing the core business, to lead the enhancing of operational efficiency in an organizational or industrial setting, identify ethical problems in the field of technical communication and possess the skills needed for doctoral studies. From this description, it was not entirely clear to the peers what the programme actually wants to achieve. Only through the discussion of the curriculum with programme managers and students, it becomes clear that the focus of the programme meanwhile lies on the conveyance of skills in Human-Computer Interaction as well as User Experience. The aspect of Technical Communication, being the original focus of the programme in earlier years, is still in existence. However, compared to the HCI-component it is no longer the predominant aspect. The peers understand that the combination of communication sciences and HCI in this programme is a unique approach in Finland and follows a tradition of many years. Consequently, they do recognize that students as well as industry and other stakeholders are aware of the skills and competencies acquired by the graduates of this programme. Nevertheless, from the generic description of the learning outcomes this does not become apparent. Neither do the learning outcomes yet refer to the predominant topic of HCI, nor do they substantially differ from those of the Master programme Information Systems, at least the way they are presented in the SAR. From their understanding of the learning outcomes after the site visit, the peers nevertheless agree that the programme learning outcomes are in line with the expectations of the European Framework Level 7 but do only partially comply with the respective Subject-Specific Criteria of the ASIIN Technical Committee 04 – Informatics. From their understanding of the programme's learning outcomes the peers do not think that they are subject-specific enough to comply with the Criteria for programmes of Computer Science of EQANIE and thus qualify for the award of the Euro-Inf Label.

Criterion 1.2 Name of the degree programme

Evidence:

- Self-Assessment Report
- On-Site Discussions

Preliminary assessment and analysis of the peers:

The panel considers the names of the study programmes to be adequately reflecting the respective aims, learning outcomes and curricula. Only in the case of the Master Technical

Communication they are uncertain, whether the title would not evoke misleading understandings of the actual content of the programme. From the discussions, they understand that the name is quite traditional and unique within Finland and results from times, when technical communication actually was at the centre of the curriculum contents. Meanwhile this content has shifted more towards Human-Computer Interaction, but technical communication is still part of the learning outcomes. Since the name is well-known and established in the country and industry representatives as well as students confirm that they were aware of the content nowadays implied by the programme, the peers see no need to change its title.

Criterion 1.3 Curriculum

Evidence:

- Self-Assessment Report
- Appendix 02A: Recommended Study Plan
- Appendix 31A: Objectives-Module-Matrices
- Appendix 34: Personal Study Plan Template
- On-Site Discussions

Preliminary assessment and analysis of the peers:

The panel reviewed the curricula of the study programmes under consideration in order to identify whether the available modules can achieve the described learning objectives. This was mainly done through the discussions on-site and the matrices matching the general learning objectives and the module contents, since many of the module descriptions were only available in Finnish language before the arrival of the peers to Vaasa. A complete translation of the module descriptions of all core modules will be presented to the peers in the aftermath of the site visit and serve to confirm the peers' understanding of the programmes and curricula.

From the discussions with the stakeholders, the peers understand that the curricula of all programmes are part of a constant review process in order to ensure that they meet the requirements of the industry. Especially, the close communication with the local companies plays an important role in the curriculum development, as the graduates of the University of Vaasa are the most important source of qualified staff in the region. Hence, the industry representatives confirm during the interview that the curricula are up-to-date and do provide the students with all the required skills and competencies.

The Bachelor Industrial Management and Information Systems provides the students during the first semesters with a solid foundation of economic and mathematical skills. Thus, all students take 18 credits in introductory courses to Economics, Computer Science and Project Management as well as 17 credits in Method Studies that generally comprise mathematical subjects. Furthermore, 15 credits have to be taken in languages before the major block of 56 credits provides students with basics in Business (28 credits) and Business Development (28 credits) plus 25 credits in Industrial Management and Information Systems. Consequently, at the end of this first part of the programmes, all students possess a thorough knowledge of technical foundations in Computer Science, Economics and Mathematics as well as have gained broad knowledge in the field of Business and Business development before starting with their specialization either in Industrial Management or in Information Systems. Each of these specializations comprises of 25 credits and extends to the Bachelor's thesis of 10 credits in the sixth semester. In conclusion, the peers agree that the curriculum and the included modules are well designed in order to provide the students with the envisaged skills and competencies. They approve of the structure of creating a common business foundation before allowing for a more individual specialization in one of two majors. Despite their critical remarks on the description of the learning outcomes in the Information Systems major, they can see that the modules offered provide the students with the skills generally provided in this subject. Thus, through modules such as E-Business, Database Design and electives ranging from Information Security to Software Testing it is ensured that graduates are adequately qualified for a career in industry.

The Master in Industrial Management is an international programme offered completely in English language. Yet, students take additional courses in writing academic English and Finnish for foreigners. 15 credits are gained in the field of Mathematics before a further 30 credits are chosen from a list of major advanced level studies. The courses offered are divided between the two categories Logistics and Production and Technology Management and Product Development. Additionally, all students take the courses on Research Methods, Operations Strategy and Quality and Reliability Management. A specialty of the Vaasa Master programmes is that students gain about 30 credits from the field of Optional Studies in order to complete the degree programme. The aim/objective is that students thus complete a minor subject consisting of at least 25 credits as a complementary to the general focus on Management in the major. The peers are at first uncertain if this unrestricted flexibility would not lead to students choosing incoherent or comparatively easy combinations but understand through the discussions on-site that all students at the beginning of the programme agree on a personal study plan (PSP) with an academic supervisor. This PSP outlines the course of studies for the period of two years and thus offers a certain frame for the students as well the programme coordinators. If students want to deviate from the

PSP at a later stage, this is generally possible after approval from the supervisor. Eventually, after the completion of major and minor the programme is concluded by the Master's thesis including 10 credits for research plan and presentation and 20 credits for the master's thesis itself.

The Master in Information Systems follows a quite similar structure with courses in academic writing and advanced language plus 15 credits in Mathematics. After that, students take 30 credits from the major in Information Systems including 10 credits in Project Management combined with an Information Systems Project. Before the further 20 credits in the major can be taken, students have to complete a minor subject of 25 credits comparable to the Industrial Management Master. In this case, the programme coordinators outline certain focus areas from which the minor courses should be selected, depending on the previous Bachelor education as well as the professional focus of the student. In any case, the courses are again agreed on in a personal study plan that should be followed by each student individually. The programme is completed by the Master's thesis consisting of 10 credits for the master's thesis research plan and 20 credits for the master's thesis itself.

The Master in Technical Communication follows a similar structure as the other two Master programmes under review but comprises a broader variance of topics reaching from mere technical communication to the field of human-computer interaction and user experience design. Consequently, the mathematical contents in the programme are much less extensive as in the other Master programmes. 35 credits are gained in the field of advanced level studies that comprise 15 credits from mandatory courses in Information Systems and a further 15 credits from communication studies. Five more credits result from an elective module in one of the two fields such as Physiological Psychology, Cognition People and Technology or E-Marketing. A further 25 credits result from freely elected minor studies as in the other Master programmes before the programme is concluded with a 30-credits Master's thesis module.

While the peers agree after the revision of the curricula that all the programmes are generally suitable to reach the intended learning outcomes as defined by the University, they also discuss a certain deficiency that becomes apparent on different levels on all of the programmes. Thus, they understand that the strong connection with the local industry is of particular importance for the University and the programmes under review. This has ensured a good basic funding of the programmes as well as a high level of employability of the graduates. Nevertheless, this entanglement has apparently also led to a certain neglect of aspects of scientific research. On Bachelor level, the University cooperates in a number of courses with the local University of Applied Sciences in order to share and save resources. While this is generally understandable, it also indicates in the eyes of the peers that the scientific approach of these courses cannot be as elevated as might be expected.

Although on a Bachelor level this measure may be acceptable in some courses, the peers urge the University management not to extend the cooperation of modules any further as this may lead to a further focus on application-orientation at the expense of research-based content. On a Master level, the peers learn that students are indeed involved in a number of projects but all of these are usually instigated by industry partners. Research-oriented tasks for pure scientific benefit seem to be rare. The students, who mention that the possibilities of continuing their studies in a PhD programme are not well known, also confirm this. Consequently, the peers would advise the programme coordinators to emphasize scientific research as well as industry-related projects and thus to outline to the students that an academic career may be an option besides the industry demand.

According to the statements of the University management, internationalization is also of major importance for the University as well as the entire region. The high number of internationally active companies around Vaasa seek more employees as the region can provide. The attraction of foreign graduates as well as students is thus of great importance to them. Further, the industry representatives underline that they are especially interested in graduates that possess international and intercultural experience besides their mere technical qualification. In their mind and in the perception of the peers too, this international aspect could still be further strengthened within the programmes. For one, with exception of the international Master Industrial Managements, all programmes are delivered in Finnish language with only a few modules offered in English language. While the peers agree that the education on the Bachelor level should be provided in the national language, education on Master level could be more broadly offered in English. The companies that in most cases describe English as their working language confirm this. And, although the English language skills of the students are not doubted, the knowledge of technical and subject-specific vocabulary could still be improved. Consequently, the peers recommend considering to offer more Master programmes entirely in English but also to strengthen the international mobility of the local students. The peers understand that only few students are interested in spending time abroad as most of them are working full-time besides their studies. However, it might be helpful to provide special offers and support structures within the curricula to nevertheless participate in some kind of international and intercultural experience with this problem in mind.

Criterion 1.4 Admission requirements

Evidence:

- Self-Assessment Report
- Appendix 24: Degree Regulations of the University of Vaasa

- On-Site Discussions

Preliminary assessment and analysis of the peers:

Admission to Universities in Finland is generally regulated by a government act. In the case of the Bachelor programme, this entails that potential applicants have to pass the Finnish matriculation examination after graduation from High School. In the case of the Bachelor programme under review, 50% of the annually 65 students are selected directly through the result achieved in this national exam in case they surpass a defined minimum of grading points. The other half is then distributed to those students interested who did not achieve the required number of points and thus have to take an entrance exam, testing the applicants' abilities to logical thinking.

For the Master programmes in Finland the situation is quite different since the passing from Bachelor to Master's degree within the same University is basically guaranteed. Thus, internal applicants do have to complete an application form, but a continuing education in a Master programme related to their Bachelor programme is usually ensured. An application process and admission criteria are only defined for external applicants and international degree programmes. Consequently, in the Master programmes IS and TC external applicants need to have completed a Bachelor degree of three or four years at University or Polytechnic level and are rated based on their performance in programme-related subjects. Depending on how related their prior education has been or the total number of ECTS acquired in their Bachelor education, all Master programmes have defined a certain list of bridging courses that may be required to take before the Master programme can be started. Which additional courses have to be taken is agreed on with the students in the form of the usual personal study plan (PSP). For the international Master Industrial Management applicants are selected following the same criteria, but additionally have to proof their English language proficiency.

To the peers the defined admission criteria and selection process appear reasonable and transparent. However, they learn during the discussions on-site that due to the guaranteed admission to Master programmes for internal applicants it is very common in Finland that Bachelor students already take Master courses before officially entering the Master programme. The students confirm that it is possible (and also happens) that students complete all of their Master courses before writing the Bachelor's thesis, thus in fact completing their Bachelor programme officially only a few months before completing the Master programme. In the eyes of the peers, this is astonishing since it carries the danger that students may have completed most of the Master programme and then fail in a final Bachelor module or the Bachelor's thesis. In addition, the Master programme should be based on the successful completion of all required Bachelor modules and provide more elevated

knowledge and skills. If it is possible to do both courses at the same time, it might be doubted if the Master modules actually achieve Master level. In this case at least, the students emphasize that taking Master courses before completing the Bachelor modules is possible but does require more work on behalf of the students. In any case, the peers underline that the Bachelor degree should be considered and treated as a self-sufficient programme that needs to be completed entirely before the second step (be it taking up a profession or continuing in a Master degree) is taken. The peers understand that the Bachelor degree in itself is still little esteemed in Finland and most of the students would continue in a Master programme, but following the ideal of the Bologna reform process a clear distinction between both academic levels should be made visible.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 1:

The peers appreciate that in the aftermath of the site visit the programme coordinators provided all module descriptions as well as exemplary study plans and intended learning outcomes in English translation. Furthermore, they acknowledged in the case of the Master Technical Communication, that since 2017-18 some new models have been introduced and others existing have been revised in order to strengthen the Informatics content. Thus, the new modules “Development of Information Systems”, “Introduction to Human Computer Interaction”, “Service Design” and “Management of Cyber Security” have been added replacing the modules “Computing and Communication Approaches to Energy Chain”, “IT Services and Business”, “Digital Communication Project” and “E-Marketing”. Based on this information and the more detailed information now accessible through the module descriptions, the peers agree that the Informatics content in the programme is adequate and qualifies the programme to the award of the Euro-Inf Label. Furthermore, the peers acknowledge that the description of the learning outcomes of the Bachelor Industrial Management and Information Systems as well as the Master Technical Communication have been revised and adequately improved. Consequently, they consider the criterion to be largely fulfilled.

2. The degree programme: structures, methods and implementation

Criterion 2.1 Structure and modules
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Evidence:

- Self-Assessment Report

- Appendix 02A: Recommended Study Plan
- Appendix 03: Student Mobility
- Appendix 04: Student Exchange Agreements Technology
- Appendix 34: Personal Study Plan Template
- Appendix 35: ECTS per Year
- On-Site Discussions

Preliminary assessment and analysis of the peers:

The study programmes under review are divided into modules, which comprise a sum of teaching and learning. The panel found the structure of the modules in general to be adequate and manageable. All programmes include a broad variety of elective courses that are arranged individually in the process of establishing the personal study plan.

Practical experience is gained through various elements within the programmes. First of all, the vast majority of the students is working besides their studies, most of them even full-time. In order to facilitate this parallel occupation, the programmes define different amounts of credits that can be recognised as working practise within the programmes throughout the years. This is not a huge amount of working hours, but it offers the students the possibility to gain at least a few credits for their professional occupation when related to the specialization of the project. Due to the fact that the majority of the students is full-time employed, mandatory internships are not included in the curriculum. However, most modules comprise practical elements and project works that are often carried out in cooperation with the local industry. As has already been mentioned before, the local companies provide a number of projects to the programmes thus offering the lecturers to include real-life project experience into their modules.

The aspect of internationalization has already been discussed under 1.3. Although it is of growing importance to the University to include international students into the University programmes as well as to motivate Finnish students to spend some time abroad, the number of students using this opportunity is very low (in the Master programmes usually no more than 2-3% of the students). Against the background that most students are working full-time, the reluctance to go abroad appears to be understandable. However, the companies emphasize that international and intercultural experience is something they are looking for in applicants. Consequently, it might be worthwhile reviewing mobility options for the students in cooperation with larger companies in order to raise the mobility rates. Similarly, the introduction of more English-speaking Master programmes could further attract international students to Vaasa as well as provide the local students with the opportunity to enhance their intercultural experiences. Besides these aspects, the peers confirm that

international mobility is possible and that the recognition of credits gained at other Universities is regulated by the University regulations in accordance with the Lisbon convention.

Criterion 2.2 Work load and credits

Evidence:

- Self-Assessment Report
- Appendix 02A: Recommended Study Plan
- Appendix 34: Personal Study Plan Template
- Appendix 35: ECTS per Year
- On-Site Discussions

Preliminary assessment and analysis of the peers:

All modules in the programmes are assigned ECTS credits. Every semester comprises 30 credits while each credit is valued 27 working hours. Besides these general regulations the peers are astonished to hear that the vast majority of the students in Finland (not just in Vaasa) is working full-time besides their studies. Although some students report that they are supported by their employers insofar as that they may use some of their weekly working time to attend lectures at the University, the peers doubt that this is generally the case. While it is not considered to be the genuine task of the University to explore whether the students can deal with the study workload and the parallel job, the peers suppose that the workload of a full-time job and a full-time study programme cannot be manageable throughout a longer time period. They learn that by offering many courses on-site as well as online the University is creating greater flexibility for working students but still the workload would be highly incompatible. However, it appears that the University does not regularly assess the student workload in order to review whether the assigned numbers of credits and the included working hours actually meet the students' reality. Based on the students' comments, there appear to be quite large differences between the modules, some requiring much more work than assigned, some much less. In the opinion of the peers, the University should introduce a system of regularly assessing the students' workload and to develop a procedure, how to react if the evaluation indicates certain regular deviances. Furthermore, the peers would deem it helpful if in the programmes regular statistics about the progression of individual student cohorts would be collected. From the currently available data concerning student progression and dropout, it is not visible how many students from those that started a degree programme in a certain year have actually completed the programme in the envisaged time, nor how many dropped out on the way or studies much later than the regular study period. The peers understand that based on Finnish legislation

the assessment of a dropout-rate is extremely difficult because students would not lose their right to study even if they did not take courses in a long while. Consequently, the University can only know of those dropout students that actually fail a programme or that announce officially that they leave the University. While this is something that cannot be changed for the moment, a cohort analysis about student progress could be a helpful instrument and the assessment of student workload should be ensured as well as procedure to deal with the results of the workload analysis.

Criterion 2.3 Teaching methodology

Evidence:

- Self-Assessment Report
- Appendix 02A: Recommended Study Plan
- Appendix 05: Working Practice
- Appendix 13: Programme Management Principles
- Appendix 34: Personal Study Plan Template
- On-Site Discussions

Preliminary assessment and analysis of the peers:

From the presented material as well as the discussions on-site it becomes apparent that pedagogical skills and adequate teaching methodology are highly valued at University of Vaasa and in the programmes under review. Evaluation of pedagogical skills and methods are frequently performed and workshops and trainings are offered to the teaching staff. As was already pointed out, the teaching methodology in the programmes is strongly attached to practical approaches and the students' ability to find adequate jobs after the completion of the programmes. In the opinion of the peers, this hands-on-focused approach is not per se inappropriate but may lead to a diminution of the scientific research elements, which should not be neglected in a University.

Teaching is usually done in the form of lectures, seminars and workshops with many courses comprising theoretical as well as practical elements. The peers further appreciate that many of the teaching staff have previously gained professional experience in companies and thus are able to share these experiences and their contacts with the students. It has been mentioned before that the programmes are making more and more use of online teaching devices and flipped classroom techniques in order to deal with the changing learning profile of the students. Each module uses the learning platform Moodle to provide students with course information, video lectures, online tasks, etc. As a whole, the peers

gained during the on-site tour and from the discussions the impression of a great desire for teaching innovation, as for example in newly installed “pilot” classrooms that provide students and lecturers with all the technical means to apply new pedagogic and didactical approaches. This was very much appreciated as it creates an environment of joint development of teaching methodology for and with the students. Consequently, the teaching methodology is considered up-to-date and adequate in order to convey the contents envisaged by the programmes.

Criterion 2.4 Support and assistance

Evidence:

- Self-Assessment Report
- On-Site Discussions

Preliminary assessment and analysis of the peers:

The peers get a comprehensive impression of the offers related to support and assistance of the students at University of Vaasa. The students confirm that an open-door policy is being practised and that the students can always approach all teaching and administrative staff. On the programme level, each programme disposes of a programme manager responsible for the programme content and a programme coordinator who takes care of the administrative side of the programme. Additionally, all students are assigned a supervisor with whom they discuss the personal study plan, their individual specializations and later modifications of the PSP, if required. The peers appreciate that through this kind of support the University creates at least a framework to ensure that the students choose their electives in a coherent way and discuss their individual progress and professional orientation on a more or less regular basis with an academic supervisor. Information about the modules is provided through the module descriptions and since 2017 through the more detailed course syllabi. These are being distributed at the beginning of the courses and outline in detail the modules’ contents, examinations, requirements, etc. Apart from the pure academic support, the University also offers a broad variance of personal support measures ranging from a Career Centre and Study Council to a Study Psychologist, and an International Office and Counselling for International Students. In summary, the peers agree that the support and assistance measures in place at University of Vaasa contribute to the successful completion of the study programmes under review.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 2:

The peers consider the criterion to be partly fulfilled.

3. Exams: System, concept and organisation

Criterion 3 Exams: System, concept and organisation
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Evidence:

- Self-Assessment Report
- Appendix 06: Progression Statistics
- Appendix 24: Degree Regulations of the University of Vaasa
- On-Site Discussions

Preliminary assessment and analysis of the peers:

All course content within the reviewed study programmes is examined. The examination type is defined in the module descriptions. Examination types are selected based on their competence orientation and may include written exams, presentations and project work, either alone or in teams. Oral exams may happen but the peers learn that they are quite rare in Finnish Higher Education. In general, the programmes aim to utilize a wide range of methods also to review the individual learning progress of the students throughout the semester. This performance is demanded to contribute at least 50% to the final grade of the courses, thus reducing the impact of one single examination. The continuous assessment is based on learning diaries, self-reflections, role-plays, exams, case analysis, academic essays, forum discussions, digital stories, peer assessments and many more depending on the actual background of the students and the course content.

During the on-site visit, the peers have reviewed a number of exams as well as Bachelor and Master theses and agree that they fully reflect the quality expected from University programmes on EQF Level 6 and 7 respectively. Consequently, the peers agree that the examination system in place adequately supports the students' learning progress in all of the programmes under review.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 3:

The peers consider the criterion to be completely fulfilled.

4. Resources

Criterion 4.1 Staff

Evidence:

- Self-Assessment Report
- Appendix 09: Quality Profile of the Individuals
- Appendix 11: Quality Profile of Programmes and Clusters
- Appendix 22: HRM Strategic Action Plan
- On-Site Discussions

Preliminary assessment and analysis of the peers:

Concerning quantity of the teaching staff the peers were informed, that the teacher/student ratio varies greatly between the programmes. It ranges from 104 students per teacher in the Bachelor programme to 29 in the Master of Information Systems. In the self-assessment report, the University admitted that the numbers appear quite high, especially when reaching peaks around 100 or even below. A full list of teaching staff involved in all programmes of the school was provided during the site-visit, but the peers asked to receive a somewhat more detailed outline about the distribution of personnel and teaching hours. As they learned from the discussions, the teaching load of the individual staff members may vary extremely from full professors not teaching at all but only supervising PhD and Master theses and lecturers that are fully occupied with 100% teaching load. Apart from this, the peers observed that the staff situation is sometime tense although not yet critical. However, since the teaching structure with parallel on-site and online teaching as well as examining requires a lot of commitment from the staff members, those heavily involved in teaching do express some need of relief. In conclusion, the peers ask to receive a document outlining who is actually involved in which programme offering, which courses at how many teaching hours.

Apart from the quantity of the staff members the peers also reviewed the quality of the teaching staff. It was appreciated that many of them also have a professional background besides their academic qualification and career. While the peers do not question the academic qualification of the staff, it needs to be reviewed first, who of the staff members is actually involved in teaching. From the documents it is visible that an adequate proportion of the staff members has a PhD degree, but their participation in the teaching could not yet be fully assessed.

Criterion 4.2 Staff development

Evidence:

- Self-Assessment Report
- Appendix 09: Quality Profile of the Individuals
- Appendix 11: Quality Profile of Programmes and Clusters
- Appendix 22: HRM Strategic Action Plan
- On-Site Discussions

Preliminary assessment and analysis of the peers:

In the previous chapter, it has been outlined that the distribution of teaching load among the staff members appears to be sometimes imbalanced. The peers understand that some staff members are more involved in research than others but if a number of staff members and especially younger ones have a teaching load of 100% of their working time the spare time for research must be necessarily very limited. As the peers learned from the HEI management it is an overall strategic goal of the University to increase the research activities. But in order to achieve this, it should be ensured that all staff members of all different employment levels reaching from teacher to full professor dispose of a certain guaranteed free time for research. This is even more important in the opinion of the peers, as otherwise a stronger inclusion of scientific research into the modules especially on Master level cannot be achieved. Related to this, the peers advise the HEI management to take measures shifting the staff activities from mere industry-related projects to independent academic research projects resulting in publications and conference contributions. As the University itself points out in the self-assessment report, the number of publications of staff members has decreased from 172 in 2013 to 98 in 2017. Among the professors, only few have an above-average number of publications compared with European standards. In conclusion, the peers consider it important to strengthen the research activities of the staff members and consequently also to enhance the presence of scientific research activities within the courses.

Concerning the pedagogical and didactical development of the teaching staff, the University provides a large variety of offers and is further developing this aspect. A new system has been installed allowing staff members to partake in didactical trainings up to an amount of five ECTS credits while reducing their teaching load in the same amount. In the future, it shall be achieved that all staff members complete at least 25 credits of didactical training in the course of their academic promotion. Moreover, the University participates in the government-initiated HELLA programme that aims at enhancing the teachers' and professors' performance in teaching. HELLA (Higher Education Learning Lab) is a research-based

and research-supported development project on higher education pedagogy that is developing and piloting a new multilingual 60 ECTS study module in higher education for the needs of the universities and the universities of applied sciences. The aim is also to develop operating models for internal use in the institutions of higher education as well as models for cooperation between the institutions, thus enhancing the coordination of education and research in higher education pedagogy and pedagogical forms of activity in administration.

In conclusion, the peers see that the University is providing a lot of support for professional development but encourage the University to enhance its support system of research activities on all levels of academic careers.

Criterion 4.3 Funds and equipment

Evidence:

- Self-Assessment Report
- Appendix 10A: Professional Institutions and Corporations
- On-Site Visit

Preliminary assessment and analysis of the peers:

During the on-site visit, the peers were able to gain a comprehensive impression of the facilities and laboratories at the University of Vaasa. Due to the intensive collaboration with local companies the laboratory facilities are considered absolutely sufficient, providing students with all possible opportunities to work on their study projects from Bachelor to PhD level. Most impressive were also the already described innovative classrooms that are currently being piloted at the University in preparation of planned new constructions. In these rooms a range of innovative technical teaching facilities are tested and evaluated under active participation of the students. The largest technical laboratories (although in the programmes here under review of only limited importance) are gathered in the TechnoBothnia complex, where the University and the local University of Applied Sciences have joined their resources largely provided by industry funding to provide the best project environment. In summary, the peers consider the available equipment more than adequate for the performance of the programmes reviewed.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 4:

From the documents provided in the aftermath of the site visit the peers understand that the distribution of the teaching workload is generally acceptable and balanced. Based on

the comments by staff members and other stakeholders they continue to encourage the University in providing further research opportunities to staff members on all academic levels. This will contribute to the overall University strategy of strengthening the research focus within the institution. In conclusion, they consider the criterion to be largely fulfilled.

5. Transparency and documentation

Criterion 5.1 Module descriptions

Evidence:

- Appendix 14: Module Descriptions Examples
- On-Site Discussions

Preliminary assessment and analysis of the peers:

It has been outlined before that until the site visit English module descriptions were only available for those modules that are generally taught in English language. A full translation of all core modules of the programmes will be provided by the University in the aftermath of the visit. Those descriptions available in English language do provide detailed information about the respective content, learning outcomes, examinations, workload distribution and grading.

Criterion 5.2 Diploma and Diploma Supplement

Evidence:

- On-Site Discussions

Preliminary assessment and analysis of the peers:

Diploma and Diploma Supplements of the programmes will also be provided in the aftermath of the site visit. During the discussions on-site it was confirmed that all students are awarded a Diploma and an adjoining Diploma Supplement at graduation.

Criterion 5.3 Relevant rules

Evidence:

- Self-Assessment Report
- Appendix 17: University of Vaasa Rules of Procedure
- Appendix 24: Degree Regulations of the University of Vaasa

- On-Site Discussions

Preliminary assessment and analysis of the peers:

From the documents provided and the discussions during the on-site visit, the peers learned that the University of Vaasa follows a policy of transparent and open rules and regulations. All required rules and regulations are made accessible to students at any time online; full syllabi of the course contents are also provided to the students at the beginning of each course. The discussion with the students confirmed that they feel well informed about regulations and comfortable about the access to any information about their degree programmes. However, it was noted by the peers and also supported by student opinion that the accessibility of information through the University website could be improved. While the access to required information is quite easy through Moodle for students already enrolled, it is difficult to find the relevant information for those external to the programmes. As a part of this difficulty detailed information about the programmes such as the module descriptions are only available on the website in Finnish language, with the only exception of the few international Master programmes. Of course, the peers understand that the other programmes are delivered in Finnish, but for reasons of greater transparency and international visibility, it might be recommendable to present at least some concise information about learning outcomes and curriculum for all programmes in English language as well.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 5:

In the aftermath of the site visit Diploma Supplements for all programmes as well as fully translated module descriptions for all modules were provided by the University. These documents comply with the expectations of the peers and consequently they consider the criterion to be completely fulfilled.

6. Quality management: quality assessment and development

Criterion 6 Quality management: quality assessment and development

Evidence:

- Self-Assessment Report
- Appendix 01: Characteristics of the Degree Programmes
- Appendix 06: Progression Statistics

- Appendix 07A: Module pass rates
- Appendix 12: Graduation Statistics
- Appendix 23: Feedback Process of the School of Technology and Innovation
- Appendix 25: Quality Policy of the University of Vaasa
- Appendix 27: Internal Reporting of the University
- Appendix 28: Module Level Feedback Form
- Appendix 42: Self-Assessment of the Programmes
- On-Site Discussions

Preliminary assessment and analysis of the peers:

From the documents presented and from the discussions during the on-site visit the peers gain a generally positive impression of the quality management procedures that are in place at the University of Vaasa and for the programmes under review.

Feedback is collected from teaching staff, students and graduates at regular intervals and results from feedback as well as internal development are being discussed with the stakeholders at regular meetings. A very helpful instrument appears to the peers the so-called three plus three evaluation: Based on the results of the course evaluations staff members are required to prepare a short document outlining three positive aspects and three points that still could be improved. The staff members confirm that this instrument is especially helpful because it may include all sources of feedback gathered by the teachers, not only the responses of the course evaluation. The feedback can also come from direct communication with the students or with industry partners and is thus considered to be more flexible than the static questionnaire of the course evaluations. Furthermore, the peers learn that the response rate to the surveys is very low. In their assessment, one reason for the little participation of the students is that now immediate feedback on the surveys is given to the students in the courses. The results are being collected and communicated to the students in public meetings but these are not course-specific. In order to entirely close the feedback-cycle it could be helpful to carry out the surveys not after the final session of the course but sometime before and to discuss the results with the students in the class. This might motivate students to express their opinions and to enter into a dialogue with the teacher.

Apart from the surveys, it has already been outlined that the collection of student-relevant data could be further improved and institutionalized. As it became clear from the discussions, all stakeholders share a very direct, open and uncomplicated feedback communication but the collection of this feedback and relevant data is not always institutionalized. For example, the cohort progress is not regularly documented within the programmes and

there are no continuous alumni questionnaires nor does an alumni network exist yet. In order to monitor the student progress and further professional career as well as the suitability of the graduates this kind of serial data would provide helpful insights into the programmes' quality and development options.

Final assessment of the peers after the comment of the Higher Education Institution regarding criterion 6:

The peers consider the criterion to be completely fulfilled.

D Additional Documents

Before preparing their final assessment, the panel ask that the following missing or unclear information be provided together with the comment of the Higher Education Institution on the previous chapters of this report:

1. English translation of all descriptions of core modules
2. Full English translation of modules-objectives-matrix
3. Staff Handbook/list of academic qualifications with identification of teaching responsibility per staff member
4. Diploma Supplements

E Summary: Peer recommendations (11.11.2019)

Taking into account the additional information and the comments given by the University the peers summarize their analysis and final assessment for the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Industrial Management and Information Systems	With requirements for one year	Euro-Inf (for Information Systems)	30.09.2025
Ma Industrial Management	With requirements for one year		30.09.2025
Ma Information Systems	With requirements for one year	Euro-Inf	30.09.2025
Ma Technical Communication	With requirements for one year	Euro-Inf	30.09.2025

Requirements

- A 1. (ASIIN 2.2) Develop and implement a process to systematically monitor the actual student workload and to adapt either the credit point allocation or the module/course content, if necessary.

Recommendations

- E 1. (ASIIN 4.2) It is recommended to allocate a certain amount of research time to all different levels of staff members for further qualification purposes.
- E 2. (ASIIN 1.3) It is recommended to regularly involve research-oriented tasks in Master courses.
- E 3. (ASIIN 1.3) It is recommended to improve the communication of academic research options to the Master students.
- E 4. (ASIIN 1.1) It is recommended to improve the accessibility of study information through the website in English to enhance the international visibility of the programmes.

- E 5. (ASIIN 6) It is recommended to provide feedback of the course evaluations to the students within the courses and to institutionalize the collection of statistical data concerning student progress.
- E 6. (ASIIN 1.3) It is recommended to ensure that the Master programmes cannot be entirely completed without previously finishing the Bachelor degree including the Bachelor thesis.
- E 7. (ASIIN 2.1) It is recommended to further enhance the internationalization of the Master programmes by offering more English modules or even the entire programmes in English language.

F Comment of the Technical Committees

Technical Committee 04- Informatics (19.11.2019)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure, especially Recommendation 3 but conclusively agrees with the assessment of the peers.

The Technical Committee 04- Informatics recommends the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Industrial Management and Information Systems	With requirements for one year	Euro-Inf (for Information Systems)	30.09.2025
Ma Industrial Management	With requirements for one year		30.09.2025
Ma Information Systems	With requirements for one year	Euro-Inf	30.09.2025
Ma Technical Communication	With requirements for one year	Euro-Inf	30.09.2025

Technical Committee 06- Industrial Engineering (12.11.2019)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the procedure and agrees with the assessment of the peers.

The Technical Committee 06- Industrial Engineering recommends the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Industrial Management and Information Systems	With requirements for one year	Euro-Inf (for Information Systems)	30.09.2025

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ma Industrial Management	With requirements for one year		30.09.2025
Ma Information Systems	With requirements for one year	Euro-Inf	30.09.2025
Ma Technical Communication	With requirements for one year	Euro-Inf	30.09.2025

Technical Committee 07- Business Administration (18.11.2019)

Assessment and analysis for the award of the ASIIN seal:

The Technical Committee discusses the accreditation procedure at its meeting on 18. November 2019. The discussion focuses on E6. It can be explained by one of the peers and members of the committee that the Finnish systems differs slightly from the German system, in that students usually start with their Master's without having completed the Bachelor's program beforehand. The technical committee agrees with the assessment of the peers.

Assessment and analysis for the award of the Euro-Inf® Label:

The Technical Committee deems that the intended learning outcomes of the degree programmes Ba Industrial Management and Information Systems (partly), Ma Information Systems and Ma Technical Communication do comply with the Subject-Specific Criteria of the Technical Committee 07 - Business Informatics.

The Technical Committee 07- Business Administration recommends the award of the seals as follows:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Industrial Management and Information Systems	With requirements for one year	Euro-Inf (for Information Systems)	30.09.2025
Ma Industrial Management	With requirements for one year		30.09.2025

F Comment of the Technical Committees

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ma Information Systems	With requirements for one year	Euro-Inf	30.09.2025
Ma Technical Communication	With requirements for one year	Euro-Inf	30.09.2025

G Decision of the Accreditation Commission (06.12.2019)

Assessment and analysis for the award of the subject-specific ASIIN seal:

The Accreditation Commission discusses the procedure and agrees with the assessment of peers and Technical Committees. Regarding Recommendation 6 the members decide to choose a different wording in order to make the meaning better understandable.

Assessment and analysis for the award of the Euro-Inf® Label:

The Accreditation Commission deems that the intended learning outcomes of the degree programmes Ba Industrial Management and Information Systems (with its specialization Information Systems), Ma Information Systems and Ma Technical Communication do comply with the Subject-Specific Criteria of the Technical Committee 04 - Informatics.

The Accreditation Commission for Degree Programmes decides to award the following seals:

Degree Programme	ASIIN-seal	Subject-specific label	Maximum duration of accreditation
Ba Industrial Management and Information Systems	With requirements for one year	Euro-Inf (for Information Systems)	30.09.2025
Ma Industrial Management	With requirements for one year		30.09.2025
Ma Information Systems	With requirements for one year	Euro-Inf	30.09.2025
Ma Technical Communication	With requirements for one year	Euro-Inf	30.09.2025

H Comment of the Higher Education Institution (07.11.2019)

The institution provided a statement as well as the following additional documents:

- Full English translation of module descriptions
- Full English translation of Curricula
- Full English translation of Objectives-Module-Matrices
- Appendix 1: UVA Career stage eligibility requirements
- Appendix 2: Personnel of the School on different Career Stage Level
- Appendix 3: Contact teaching by person of the core faculty of the School
- Appendix 4: Sum of contact teaching in different teaching position
- Appendix 5: Sum of contact teaching by person
- Appendix 6: Sum of contact teaching by person and by courses
- Appendix 7: Sum of contact teaching by type of contract
- Appendix 8: Sum of contact teaching by disciplines persons and modules
- Appendix 9: Sum of contact teaching by disciplines
- Appendix 10: Percentage of teaching divided into degree programmes
- Diploma Supplements

I Fulfilment of Requirements (03.12.2020)

Analysis of the peers and the Technical Committees (16.11.2020)

Requirements

For all degree programmes

- A 1. (ASIIN 2.2) Develop and implement a process to systematically monitor the actual student workload and to adapt either the credit point allocation or the module/course content, if necessary.

Initial Treatment	
Peers	fulfilled Vote: unanimous Justification: The university has described and implemented a step-by-step process to systematically calculate and monitor the students' workload.
TC 04	fulfilled Vote: unanimous Justification: The technical committee follows the decision of the peers.
TC 06	fulfilled Vote: unanimous Justification: The technical committee follows the decision of the peers.
TC 07	fulfilled Vote: unanimous Justification: The technical committee follows the decision of the peers.

Decision of the Accreditation Commission (03.12.2020)

Degree programme	ASIIN-label	Subject-specific label	Accreditation until max.
Ba Industrial Management and Information System	All requirements fulfilled	Euro-Inf® (for Information Systems)	30.09.2025
Ba Technical Communication	All requirements fulfilled	Euro-Inf®	30.09.2025
Ma Industrial Management	All requirements fulfilled	/	30.09.2025
Ma Information Systems	All requirements fulfilled	Euro-Inf®	30.09.2025

Appendix: Programme Learning Outcomes and Curricula

According to Study Handbook the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor programme Industrial Management and Information Systems:

“A student who has completed a Bachelor’s Degree in Industrial Management and Information Systems

- knows the basics of economics
- understands the basics of project management and its methods
- knows how to use the most common computer software and makes use of information networks in searching for information
- knows how to apply the basics of method studies and knows the most typical mathematical methods used in the field
- speaks Finnish and Swedish on the level required by the Finnish law and in addition at least one foreign language on a conversational level
- understands scientific thinking and is able to write scientific text in his or her mother tongue
- has the skills needed to continue studies on Master’s level
- is able to create simple computer software, recognizes the operations model of e-business and is able to utilize spreadsheets
- masters the basics of quality management, knows the concepts of sustainable development and understands the basics of energy business
- masters the basics of information systems after having completed the intermediate studies, and depending on the chosen major, is able to apply knowledge in either the planning of information systems or in the field of technical communication. Furthermore, the student is able to follow the developments in the field of information systems.
- having completed the intermediate studies in industrial management, is able to explain how different factors impact production, understands how production units function and understands the importance of the supply chain and how to manage it”

The following **curriculum** is presented:

KAUPPATIETEIDEN KANDIDAATIN TUTKINTO,
TUOTANTOTALOUDEN JA TIETOJÄRJESTELMÄTIETEEN KANDIDAATTIOHJELMA
(*BACHELOR OF SCIENCE (ECONOMICS AND BUSINESS ADMINISTRATION),
DEGREE PROGRAMME IN INDUSTRIAL MANAGEMENT AND INFORMATION SYSTEMS*)
180 opintopistettä

(180 ECTS)

Koulutusohjelmavastaava: Petri Helo

Head of the Programme: Petri Helo

ORIENTOIVAT OPINNOT 4 OP

(*ORIENTATION TO ACADEMIC STUDIES 4 ECTS*)

OPIS0032	Johdatus yliopisto-opiskeluun ja henkilökohtainen opintosuunnitelma (<i>Orientation to Academic Studies and Personal Study Plan</i>)	2
OPIS0002	Tiedonhankintataidot 1 (<i>Information Literacy 1</i>)	1
OPIS0004	Tiedonhankintataidot 2 (suoritetaan kandidaatintutkielman yhteydessä) (<i>Information Literacy 2 (completed simultaneously with the Bachelor's thesis)</i>)	1

YHTEISET OPINNOT 18 OP

(*STUDIES COMMON TO ALL 18 ECTS*)

ICAT1080	Tietotekniikan perusteet (<i>Introduction to Computer Science</i>)	3
TITE1022	Tietokone työvälineenä (<i>Using Computers</i>)	3
KANS1004	Taloustieteen perusteet (<i>Introduction to Economics</i>)	6
TOIK1016	Talousoikeuden perusteet (<i>Introduction to Business Law</i>)	3
TUTA1030	Projektitoiminta (<i>Project Management</i>)	3

MENETELMÄOPINNOT 17 OP

(*METHOD STUDIES 17 ECTS*)

ORMS1030	Talousmatematiikan perusteet (<i>Introduction to Mathematical Economics</i>)	5
STAT1030	Tilastotieteen perusteet (<i>Introduction to Statistics</i>)	5
TITE1080	Lauselogiikka (<i>Propositional Logic</i>)	2
MATH2020	Diskreetti matematiikka (tietojärjestelmätieteen pääaineen opiskelijoille) (<i>Discrete Mathematics (for students majoring in Information Systems)</i>)	5
tai (or) ORMS1020	Operaatioanalyysi (tuotantotalouden pääaineen opiskelijoille) (<i>Operations Research (for students majoring in Industrial Management)</i>)	5

0 Appendix: Programme Learning Outcomes and Curricula

KIELI- JA VIESTINTÄOPINNOT 15 OP		
<i>(LANGUAGE AND COMMUNICATION STUDIES 15 ECTS)</i>		
KSUO9000/KSUO5500 + / KRUE7112 Äidinkieli (mother tongue)	5	
KRUO9111/KSUO7113 II kotimainen kieli (second national language)	5	
I vieras kieli (foreign language)	5	
LIIKETOIMINTAOSAAMISEN OPINNOT 56 OP		
<i>(BUSINESS STUDIES 56 ECTS)</i>		
<i>Liiketoiminnan perusteet</i>		
<i>(Basics of Business 28 ECTS)</i>		
	28	
JOHT1010 Yrityksen johtaminen (Management of the Firm)	7	
LASK1013 Johdatus laskentatoimeen (Introduction to management Accounting)	3	
LASK1002 Kirjanpidon ja tilintarkastuksen perusteet (Introduction to Financial Accounting)	2,5	
LASK1003 Kirjanpidon ja tilintarkastuksen harjoitustyö (Financial Accounting Team Work)	0,5	
LASK1011 Auto Business (Yrityspeli)	2	
MARK1006 Markkinointi liiketoiminnan kentässä (Marketing Function in Business)	7	
TOIK1017 Talousoikeus liiketoiminnan edellytyksenä (Business Law as Prerequisite for Business Practice)	3	
TUTA1090 Yrityksen reaali prosessit (Logistic Processes of an Organization)	3	
<i>Liiketoiminnan kehittäminen</i>		
<i>(Business Development 28 ECTS)</i>		
		28
JOHT2020 Strateginen johtaminen (Strategic Management)	7	
LASK1008 Rahoituksen perusteet (Principles of Finance)	4	
LASK1006 Tilinpäätösanalyysi (Introduction to Financial Analysis)	3	
LASK1007 Tilinpäätösanalyysin harjoitustyö (Intr. to Financial Analysis, Case Study)	2	
MARK1002 Markkinointisuhteiden johtaminen (Managing Marketing Relationships)	7	
LIIK1102 Yrityksen liiketoimintasuunnitelma (Writing a Business Plan)	5	
TUOTANTOTALOUDEN JA TIETOJÄRJESTELMÄTIETEEN PERUSOPINNOT 25 OP		
<i>(BASIC STUDIES IN INDUSTRIAL MANAGEMENT AND INFORMATION SYSTEMS 25 ECTS)</i>		
TITE1120 Taulukkolaskennan kehittyneet pürteet (Advanced Spreadsheet Systems)	5	
TITE1070 Ohjelmointi (Programming)	5	
TITE1090 Tietojärjestelmän kehittäminen (Development of Information System)	5	
TUTA1060 Basic Course in Quality	5	
TUTA1110 Kestävä energialiiketoiminta (Sustainable Energy Business)	5	
PÄÄAINEEN AINEOPINNOT 25 OP		
<i>(INTERMEDIATE MAJOR STUDIES 25 ECTS)</i>		

Valitse sen pääaineen (tuotantotalous tai tietojärjestelmätiede) mukaiset opinnot, johon olet pääainevalinnassa tullut valituksi. Tietojärjestelmätieteen pääaineen opiskelijat voivat valita myös tekniseen viestintään suuntautuille tarkoitettun kokonaisuuden, mikäli he haluavat hakea vaihtoa kauppatieteiden maisterin tutkintoon Teknisen viestinnän maisteriohjelman.

(Choose according to the major (Industrial Management or Information Systems) you have been accepted to in the application for a major subject. An Information Systems major can also choose the module aimed at those majoring in Technical Communication, if for your master's degree you wish to apply for a transfer to the Degree Programme in Technical Communication.)

TIETOJÄRJESTELMÄTIETEEN AINEOPINNOT 25 OP
(INTERMEDIATE STUDIES IN INFORMATION SYSTEMS 25 ECTS)

TITE2220	Introduction to E-business	5
TITE2210	Tietokannan suunnittelu (Database Design)	
	tai (or) ICATC2100 Tietokannat ja avoimet rajapinnat (Data Bases and Open Interfaces)	5

valitse lisäksi seuraavista vähintään 15 op
(in addition choose a min. of 15 ECTS of the following)

TITE2040	Oliomallinnus (Object Modelling)	5
TITE2120	Tietoturva (Information Security)	5
TITE2060	Organisaation tietojärjestelmät (Management Information Systems)	5
ICAT2130	Käyttöjärjestelmät (Operating Systems)	5
ICAT2140	Tietorakenteet (Data Structures)	5
TITE2140	Web-teknologiat (Web Based Technologies)	5
TITE2080	Tietojärjestelmän toteutus (Construction of Information System)	5
TITE2050	Olio-ohjelmointi (Object-Oriented Programming)	5
ICATC2040	Ohjelmistotestaus (Software Testing)	5
ICAT1010	C Programming	3

TIETOJÄRJESTELMÄTIETEEN AINEOPINNOT TEKNISEEN VIESTINTÄÄN SUUNTAUTU-
VILLE 25 OP
(INTERMEDIATE STUDIES IN INFORMATION SYSTEMS TO THOSE SPECIALISING IN
TECHNICAL COMMUNICATION 25 ECTS)

TITE2210	Tietokannan suunnittelu (Database Design)	5
TITE2220	Introduction to E-business (Johdatus verkkoliiketoimintaan)	5
VINE2007	Tekninen viestintä (Technical Communication)	5
TEVI1001	Terminologisen tutkimuksen perusteet (Introduction to Terminological Research)	5

valitse lisäksi seuraavista vähintään 5 op
(in addition choose a min. of 5 ECTS of the following)

TITE2140	Web-teknologiat (Web Based Technologies)	5
TITE2040	Oliomallinnus (Object Modelling)	5
TITE2060	Organisaation tietojärjestelmät (Management Information Systems)	5

TITE2120	Tietoturva (Information Security)	5
TUOTANTOTALOUDEN AINEOPINNOT 25 OP (INTERMEDIATE STUDIES IN INDUSTRIAL MANAGEMENT 25 ECTS)		
TUTA2160	Basic Course in Logistics	5
TUTA2230	Innovative Product Development and Product Lifecycle Management	5
TUTA2170	Tuotannonohjaus, peruskurssi (Introduction to Production Management)	5
<i>valitse lisäksi seuraavista vähintään 10 op (in addition choose a min. of 10 ECTS of the following)</i>		
TUTA2140	Global Sourcing and Procurement	5
TUTA2240	Sales Management and Negotiation Skills	5
TUTA2180	Tuotantolaitosten suunnittelu (Production Flow and Layout Planning)	5
MARK2022	Nordic Perspectives on Marketing (tuotantotalouden pääaineopiskelijoille 5 paikkaa) (5 seats for students majoring in Industrial Management)	5
KANDIDAATINTUTKIELMA JA KYPSYYSNÄYTE 10 OP (BACHELOR'S THESIS AND MATURITY EXAM 10 ECTS) Kandidaatintutkielma tietojärjestelmätieteen opiskelijoille (Bachelor's Thesis for Information Systems students)		
TITE2980	Kandidaatintutkielma (Bachelor's Thesis)	10
-	TITE2981 Tutkielma (Thesis)	7
-	TITE2982 Kandidaatintutkielmaseminaari (Bachelor's Thesis Seminar)	3
<i>tai Kandidaatintutkielma tuotantotalouden opiskelijoille (or Bachelor's Thesis for Industrial Management students)</i>		
TUTA2980	Kandidaatintutkielma (Bachelor's Thesis)	10
<i>Lisäksi kypsyysnäyte (In addition the maturity exam)</i>		
KNÄY200X	Kypsyysnäyte (B.A. Essay Exam)	0
VAPAASTI VALITTAVAT OPINNOT 10 OP (OPTIONAL STUDIES 10 ECTS) Opintoja siten, että tutkinnon minimilaaajuus täyttyy. Huom. tutkintoon tulee sisältyä kansainvälistymisvalmiudet 10 op, lisätietoja tämän opinto-oppaan kohdassa Kansainvälistymisvalmiudet ja vaihto-opiskelu. (Choose Optional studies so that the minimum of 180 ECTS of degree studies is fulfilled. NB! The degree must include Intercultural Competence studies 10 ECTS, further information in the Study Guide under the heading Intercultural Competence and Mobility.)		
YHTEENSÄ (TOTAL 180 ECTS)		180 OP

According to Study Handbook the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Master programme Industrial Management:

“A student that has completed Master’s Degree (economics and business administration) in Industrial Management will be able to

- apply her knowledge of industrial management either in the area of technology management and product development or in the area of production management and logistics
- lead technology development so that the company can be profitable and the employees are involved in the change process
- work in production management, product development, risk management and other tasks that combine business and technological knowledge
- apply in her work both logical thinking as well as finding and presenting the core knowledge in different situations
- apply scientific thinking in reporting research and has good written presentation skills
- carry on her studies in doctoral level
- apply research methods in industrial management
- utilize and further develop her knowledge in improving the processes of a company”

The following **curriculum** is presented:

MASTER OF SCIENCE (ECONOMICS AND BUSINESS ADMINISTRATION),
MASTER'S PROGRAMME IN INDUSTRIAL MANAGEMENT
120 ECTS

Head of Programme: Päivi Haapalainen

GENERAL AND LANGUAGE AND COMMUNICATION STUDIES 13-14 ECTS

OPIS0039	Personal Study Plan	0
OPIS0025	Searching for Scientific Information 1 (former Information Skills I, if not completed in earlier University of Vaasa studies)	1
FILO1011	Philosophy of Science	3
KENG9212	Writing Academic English	5
	Finnish for Foreigners I 5 ECTS or and optional language course for native Finnish speakers	5

METHOD STUDIES 15 ECTS

Choose courses worth 15 ECTS from the list below

The following two courses are obligatory if you do not have them or similar in your previous studies. Please note that if you have studied courses with similar content in your bachelor's degree, you cannot take the same again on master level. This means e.g. if you have taken the STAT1030 Introduction to Statistics in your bachelor's degree, you cannot take MATH1170 Probability and Statistics.

ORMS1020	Operations Research	5
	and MATH1170 Probability and Statistics	5

choose more method studies so that total will be worth of 15 ECTS

STAT1010	Statistical Analysis of Contingency and Regression	5
STAT2110	Statistical Data Processing SAS EG	5

You may also choose other courses in mathematics, statistics and physics (if you do not have them or similar in your previous studies)

MAJOR ADVANCED LEVEL STUDIES 30 ECTS

Option A is for logistics and production operations management, option B is for technology management and product development. Please note that you cannot mix the options, you have follow either or.

Obligatory Courses for all the students

TECH3010	Research Methods	5
TUTA3080	Operations Strategy	5
TUTA3050	Advanced Course in Quality and Reliability Management	5

Choose either option A or B (minimum of 15 credits)

*A – Logistics and Production Operations Management
obligatory courses*

TUTA3120	Supply Chain Design and Management	5
TUTA3240	Production Operations Management Methods	5

Choose at least worth 5 credits of the following:

TUTA3060	Contemporary Topics in Industrial Management	2-5
TUTA3070	Project Work in Industrial Management	2-5
JOHT3019	Project Management	5
TUTA3250	Simulation of Production Systems	3
TUTA3200	Enterprise Resource Planning	3
TUTA3260	Building Trust in Industrial Networks	4

*B – Technology Management and Product Development
obligatory courses*

TUTA3030	Technology Management	5
TUTA3220	Anticipation and Diffusion of Technological Innovations	5

Choose at least worth 5 credits of the following:

TUTA3060	Contemporary Topics in Industrial Management	2-5
TUTA3070	Project Work in Industrial Management	2-5
JOHT3019	Project Management	5
TUTA3230	Product and Service Design in Practice	5
TUTA3210	New Knowledge Creation and Organizational Learning in	

Product Development		5
TUTA3270	Building Trust in Industrial Networks	4
MASTER'S THESIS AND MATURITY EXAM 30 ECTS		
TUTA3985	Research Plan and Presentation	10
TUTA3986	Master's Thesis	20
TUTA3987	Master's Thesis Presentation	0
KNÄY300X	Maturity Exam	0

OPTIONAL STUDIES 31-32 ECTS

Choose other university courses to complete the degree (120 ECTS) according to your interests.

The students can choose from a variety of studies to complete their degree, both on bachelor and master level. We recommend that you complete a minor subject (25 ECTS) if possible. If this is not possible due to the fact that most minors are in Finnish, your optional studies may include several subjects according to your own interests. These studies may include e.g. optional Master level courses in IM, language studies, mathematics and many other topics. Students who have completed their Bachelor's degree in the field of business may include optional studies on any field to their degree. Students who have completed their studies in the field of technology (other than business) must include studies in the field of business to their master's degree to be eligible for M. Sc (Econ. & Bus. Adm.) degree. The amount of business studies will be agreed in the study plan (PSP).

Please note that individual courses may not be available every year.

According to Study Handbook the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Master programme Information Systems:

“A student who has completed the Master’s Programme in Information Systems

- knows how to develop a business and to support the implementation of new operations models with the help of ICT solutions
- is able to design, execute and manage an information systems project together with the customer
- is able to apply logical thinking in his/her work and to outline and present the relevant information
- is able to apply scientific thinking in research reports and is able to express him/herself in writing
- knows how to apply qualitative, quantitative and design scientific research methods
- is able to analyse and apply what s/he has learnt during the studies, especially in the energy application area
- is able to apply IT software in the area of his/her minor or study module
- has the skills to work as a specialist, manager or developer in the field of information systems
- has the skills has the skills needed to continue studies on Doctoral level”

The following **curriculum** is presented:

TITE2210	Tietokannan suunnittelu (Database Design)	
tai ICATC2100	Tietokannat ja avoimet rajapinnat (Data Bases and Open Interfaces)	5
ORMS1030	Talousmatematiikan perusteet (Introduction to Mathematical Economics)	5
STAT1030	Tilastotieteen perusteet (Introduction to Statistics)	5
Yhteensä (Total)		25

Lisäksi opiskelijalta voidaan vaatia täydentävinä opintoina II kotimaisen ja I vieraan kielen opintoja, mikäli hän ei ole suorittanut niitä riittävästi tradenomin tutkintoon.

(In addition, Supplementary Studies may include studies in the second national language and foreign language, if the student has not completed them in the Bachelor of Business Administration degree.)

**KAUPPATIETEIDEN MAISTERIN TUTKINTO,
TIETOJÄRJESTELMÄTIETEEN MAISTERIOHJELMA
(MASTER OF SCIENCE (ECONOMICS AND BUSINESS ADMINISTRATION),
MASTER'S PROGRAMME IN INFORMATION SYSTEMS)**

120 opintopistettä
(120 ECTS)

Koulutusohjelmavastaava: Tero Vartiainen
(Head of the Programme: Tero Vartiainen)

YHTEISET OPINNOT 0-1 op

(STUDIES COMMON TO ALL 0-1 ECTS)

OPIS0039	Henkilökohtainen opintosuunnitelma HOPS (Personal study Plan PSP)	0
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Lisäksi, ellei sisälly aikaisempiin opintoihin:

(In addition the following course, if not completed in the previous studies)

OPIS0002	Tiedonhankintataidot 1 (Information Literacy 1)	1
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KIELI- JA VIESTINTÄOPINNOT 13 OP

(LANGUAGE AND COMMUNICATION STUDIES 8 ECTS)

	Valinnainen kielten jatkokurssi (Optional advanced language course)	3
	Vapaasti valittavat kieliopinnot (toinen vieras kieli tai kielten jatkokurssit) (Optional language studies or advance language courses)	5
KSUO/KENG	Tieteellinen kirjoittaminen / Academic Writing	5

MENETELMÄOPINNOT 15 op

(METHOD STUDIES 5 ECTS)

TECH3010	Research Methods	5
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Lisäksi, ellei sisälly aikaisempiin opintoihin:

(In addition the following course, if not completed in the previous studies:)

MATH2020	Diskreetti matematiikka (Discrete Mathematics)	5
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Valitse lisäksi seuraavista 5-10 op (siten että menetelmäopintojen laajuus yhteensä 15 op)

(In addition choose a min. of 5-10 ECTS of the following to fulfill the demand of 15 ECTS of Method Studies)

MATHC1230	Lineaarialgebra I (Linear Algebra I)	2
MATH1240	Lineaarialgebra II (Linear Algebra II)	3
ORMS1020	Operaatioanalyysi (Operations Research)	5
ORMS2020	Päätöksenteko epävarmuuden vallitessa (Decision Analysis)	5

ORMS1010	Matemaattinen analyysi (Mathematical Analysis)	5
STAT1010	Statistical Analysis of Contingency and Regression	5
STAT2100	Tilastollinen tietojenkäsittely SPSS (Statistical Data Processing SPSS)	5
tai (or)	STAT2110 Statistical Data Processing SAS EG	5

Huom. Ei voi valita ja suorittaa samoja / samansisältöisiä opintoja mitä on aikaisemmassa, maisterin tutkinnon pohjana olevassa tutkinnossa, esim. kandidaatin tutkinnossa tai ammattikorkeakoulututkinnossa.

(NB! If you have studied courses with similar content in your bachelor's degree, you cannot take the same course again on master's level.)

PÄÄAINEEN SYVENTÄVÄT OPINNOT 30 op
(ADVANCED MAJOR STUDIES 30 ECTS)

Pakolliset opinnot
(Mandatory Courses)

Project management ja Information Systems Project suoritettava tässä järjestyksessä:

(Project Management and Information Systems Management courses must be completed in the following order:)

JOHT3019	Project Management	5
TITE3360	Information Systems Project	5

Valitse moduulista A vähintään 10 op. Valitse lisäksi moduuleista A ja B opintojaksoja siten, että pääaineen syventävien opintojen laajuus 30 op täyttyy. **Huomioi, että opintojaksot eivät voi olla päällekkäisiä sivuaineopintojen kanssa. Huomioi erityisesti moduuli B:n opintojaksoissa, että esitietovaatimukset täyttyvät.**

(Choose at least 10 ECTS of Module A. Choose enough courses so that the demand of 30 ECTS of advanced major studies is fulfilled. Please note that you cannot complete the same courses as you have completed in your minor. Pay attention to the prerequisites of courses in Module B.)

Moduuli A (vähintään 10 op)

(Module A (a min. of 10 ECTS))

TITE3010	Algoritmien suunnittelu ja analyysi (Design and Analysis of Algorithms)	5
TITE3070	Analysis and Design of Human Computer Interaction	5
TITE3120	Ohjelmoinnin erikoiskurssi (Specialised Course in Programming)	5
TITE3270	Management of ICT Function	5
TITE3300	IT Services and Business	5
TITE3330	IT-alan projektipäällikön taitajuuden kehittäminen (Developing IT project manager's Skills)	5
TITE3320	Computing and Communication Approaches to Energy Chain	5

Moduuli B

(Module B)

JOHT3054	Service Business Development (max. viisi tietojärjestelmätieteen opiskelijaa otetaan kurssille) (5 seats for students majoring in Information Systems)	5
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HALL3022	Vuorovaikutteinen johtaminen (Interactive Leadership)	6
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tai (or)	HALL3025 Muutosjohtaminen (Change Management)	6
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(max. yksi HALL-alkuisista opintojaksoista hyväksytään osaksi pääaineopintoja)

(max. one HALL-course is accepted into the major studies)

ICT-juridiikan sivuainekokonaisuuden opintojakso (A course in ICT law minor)	6-7
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(max. yksi ICT-juridiikan opintojakso hyväksytään osaksi pääaineopintoja)

(max. one ICT law course is accepted into the major studies)

Information, Communication, Automation Technology (ICAT) syventävien

opintojen (ICAT3) -kokonaisuudesta 10 op
(10 ECTS of advanced ICAT courses)
(max. 10 op ICAT-kokonaisuuden syventävistä hyväksytään osaksi
pääaineopintoja)
(max. 10 ECTS of advanced ICAT courses are accepted into the major studies)

Industrial Systems Analytics (ISA) -kokonaisuudesta syventäviä opintoja 10 op
(10 ECTS of advanced Industrial Systems Analytics courses)
(max. 10 op ISA-kokonaisuuden moduuleista, "Modules in major studies",
hyväksytään osaksi pääaineopintoja; kurssit voivat olla samasta tai eri
moduuleista; suositellaan projektinhallinnan moduulia)
(max. 10 ECTS of ISA Modules in Major Studies is accepted into the major studies. The courses can be from
the same or different modules. Project module is recommended.)

TEVI3005	Kognitio, ihminen ja teknologia (Cognition, People and Technology)	5
SATE3130	Smart Grid Communication	6
TITE2020	Käyttöjärjestelmät (Operating Systems)	5
TITE3350	Tietotekniikan erityiskysymyksiä (Selected Topics in Computer Science)	1-10

PRO GRADU -TUTKIELMA JA KYPSYYSNÄYTE 30 op
(MASTER'S THESIS AND MATURITY EXAM 30 ECTS)

TITE3980	Pro gradu -tutkielma (Master's Thesis)	30
-	TITE3985 Pro gradu -alkuraportti (Master's Thesis Research Plan)	10
-	TITE3986 Pro gradu -tutkielmaraportti (Master's Thesis)	20
-	TITE3981 Pro gradu -tutkielmaesitys (Master's Thesis Presentation)	0
KNÄY300X	Kypsyysnäyte (M.A. Essay Exam)	0

SIVUAINE TAI OPINTOKOKONAISUUS 25 OP
(MINOR OR A STUDY MODULE 25 ECTS)

KTK-tutkinnon suorittanut tai kauppatieteellisen amk-tutkinnon suorittanut (tradenomi) voi valita sivuaineen tai opintokokonaisuuden vapaasti. Erityisesti suositellaan energiasektorille suuntautuville opiskelijoille energiateknikka ja sähkötekniikka -sivuaineita.

(Students who have completed a Bachelor of Science in Economics and Business Administration or a BBA degree at a university of applied sciences can choose a minor or a study module freely. A minor in Energy Technology or Electrical Engineering is recommended to those who are interested in specializing in the energy sector.)

Muun tutkinnon kuten tekniikan tutkinnon suorittaneen tulee valita kauppatieteellinen sivuaine kuten Johtaminen, kansainvälinen liiketoiminta, taloustiede, laskentatoimi ja rahoitus, markkinointi, talousoikeus, talousoikeuden ICT-juridiikka ja tuotantotalous. Joissakin oppiaineissa sivuaineopiskelijoiden määrää on rajoitettu (tällöin sivuaineoikeutta haettava erikseen, HUOM! hakijat).

(Students who have completed another degree, for example a degree in technology, must choose a business-related minor such as management, international business, economics, finance and financial accounting, marketing, business law, ICT law of economics and industrial management. Note that the number of students is restricted in some of the minors and therefore the right to a minor subject needs to be applied for separately. Please pay attention to the application deadlines.)

VAPAASTI VALITTAVAT OPINNOT 6-7 OP
(OPTIONAL STUDIES 6-7 ECTS)

Opintoja siten, että tutkinnon minimilaaajuus täyttyy. Esim. Työharjoittelu, HALL1007 Esimiestyö ja johtajuus, HALL2032 Organisaatioteoria ja -rakenteet.

According to Study Handbook the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Master programme Technical Communication:

“A student who has completed the Master’s Programme in Technical Communication

- knows how to analyse the role of technical communication in developing the core business
- is able to communicate orally and in writing in Finnish to other professionals in the field as well as the general public
- is able to lead the enhancing of operational efficiency in an organizational or industrial setting and to manage the implementation of IT solutions in the energy industry in particular
- identifies the ethical problems in the field of technical communication, understands the ways in which they are approached and the principles that govern them, and is able to find ethically sound, sustainable solutions in a given situation.
- is able to work as a specialist, manager and developer in the field of technical communication
- has the skills needed to continue studies on Doctoral level”

The following **curriculum** is presented:

TEVI1001	(<i>Technical Communication</i>) Terminologisen tutkimuksen perusteet (<i>Introduction to Terminological Research</i>)	5
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Liiketaloustiede: Pääsääntöisesti 30 opintopistettä opiskelijan valitsemissa opintoissa sisältäen vähintään kolme seuraavasta oppiaineesta: laskentatoimi ja rahoitus, markkinointi, johtaminen ja organisaatiot, talousoikeus, taloustiede. (HOPSissa voidaan sopia vähemminkin, mikäli insinöörin tutkinto tai muut opinnot sisältävät huomattavasti laskentatoimen, johtamisen, markkinoinnin, talousoikeuden tai taloustieteen opintoja.)

(*Business Studies: Approximately 30 ECTS of studies from at least three of the following subjects: finance and financial accounting, marketing, management and organization, business law, economics. (The number of required credits may be less if the previous degree has included a significant number of credits in accounting, management, business law or economics.)*)

Lisäksi opiskelijalta voidaan vaatia täydentävinä opintoina II kotimaisen ja I vieraan kielen opintoja, mikäli hän ei ole suorittanut niitä riittävästi insinöörin tutkintoon.

(*In addition, Supplementary Studies may include studies in the second national language and foreign language, if the student has not completed them in the Bachelor of Engineering degree.*)

**SOVELTUVAN TRADENOMIN TUTKINNON SUORITTANEIDEN TÄYDENTÄVÄT OPINNOT
(SUPPLEMENTARY STUDIES FOR STUDENTS WHO HAVE COMPLETED AN APPROPRIATE
BBA DEGREE)**

TITE1070	Ohjelmointi (<i>Programming</i>)	5
TITE2210	Tietokannan suunnittelu (<i>Database Design</i>)	
	tai (or) ICATC2100 Tietokannat ja avoimet rajapinnat (<i>Data Bases and Open Interfaces</i>)	5
ORMS1030	Talousmatematiikan perusteet (<i>Introduction to Mathematical Economics</i>)	5
STAT1030	Tilastotieteen perusteet (<i>Introduction to Statistics</i>)	5
VINE2007	Tekninen viestintä (<i>Technical Communication</i>)	5
TEVI1001	Terminologisen tutkimuksen perusteet (<i>Introduction to Terminological Research</i>)	5
	Yhteensä (Total)	30

Lisäksi opiskelijalta voidaan vaatia täydentävinä opintoina II kotimaisen ja I vieraan kielen opintoja, mikäli hän ei ole suorittanut niitä riittävästi tradenomin tutkintoon.

(*In addition, Supplementary Studies may include studies in the second national language and foreign language, if the student has not completed them in the Bachelor of Business Administration degree.*)

**KAUPPATIETEIDEN MAISTERIN TUTKINTO,
TEKNISEN VIESTINNÄN MAISTERIOHJELMA,
PÄÄAINEENA TIETOJÄRJESTELMÄTIEDE
(MASTER OF SCIENCE (ECONOMICS AND BUSINESS ADMINISTRATION),
MASTER'S PROGRAMME IN TECHNICAL COMMUNICATION,
INFORMATION SYSTEMS MAJOR)**

120 opintopistettä
(120 ECTS)

Koulutusohjelmavastaava: Tero Vartiainen
(*Head of the Programme: Tero Vartiainen*)

**YHTEISET OPINNOT 0-1 OP
(STUDIES COMMON TO ALL 0-1 ECTS)**

OPI50039	Henkilökohtainen opintosuunnitelma HOPS (<i>Personal Study Plan PSP</i>)	0
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Lisäksi, ellei sisälly aikaisempiin opintoihin

<i>(In addition the following course, if not completed in the previous studies)</i>		
OPI30002	Tiedonhankintataidot 1 <i>(Information Literacy 1)</i>	1
KIELI- JA VIESTINTÄOPINNOT 8 OP <i>(LANGUAGE AND COMMUNICATION STUDIES 8 ECTS)</i>		
	Valinnainen kielten jatkokurssi <i>(Optional advanced language course)</i>	3
	Vapaasti valittavat kieliopinnot (toinen vieras kieli tai kielten jatkokurssit) <i>(Optional language studies or advance language courses)</i>	5
MENETELMÄOPINNOT 5 OP <i>(METHOD STUDIES 5 ECTS)</i>		
TEVI3004	Teknisen viestinnän tutkimusmenetelmät ja tieteellinen kirjoittaminen <i>(Research Methods in Technical Communication and Academic Writing)</i>	5
OHJELMAN SYVENTÄVÄT OPINNOT 35 OP <i>(ADVANCED LEVEL STUDIES 35 ECTS)</i>		
<i>Tietojärjestelmätiede 15 op</i> <i>(Information Systems 15 ECTS)</i>		
Project Management ja Information Systems Management -kurssit on suoritettava juuri tässä järjestyksessä: <i>(Project Management and Information Systems Management courses must be completed in the following order:)</i>		
JOHT3019	Project Management	5
TITE3360	Information Systems Project	5
TITE3070	Analysis and Design of Human Computer Interaction	5
<i>Viestintätieteet 15 op</i> <i>(Communication Studies 15 ECTS)</i>		
TEVI3001	Käyttäjälähtöinen tekninen viestintä <i>(User-centered Technical Communication)</i>	5
TEVI3002	Käsiteanalyysi <i>(Concept Analysis)</i>	5
TEVI3003	Rakenteinen teksti ja sen sovellukset <i>(Structured Text and its Tools)</i>	5
<i>Valitse lisäksi seuraavista 5 op</i> <i>(In addition choose a min. of 5 ECTS of the following)</i>		
TITE3320	Computing and Communication Approaches to Energy Chain	5
TITE3270	Management of ICT Function	5
TITE3300	IT Services and Business	5
ICAT3150	Physiological Psychology	5
TEVI3005	Kognitio, ihminen ja teknologia <i>(Cognition People and Technology)</i>	5
VIMA3008	Verkkoviestinnän konseptointi <i>(Design of online Communication Concept)</i>	5
VIMA3010	Digitaalisen viestinnän projekti <i>(Digital Communication Project)</i>	5
VIMA3002	Digitaalinen markkinointi ja viestintä <i>(E-marketing)</i>	5
VINE2012	Introduction to Game Studies	5
VIMA3017	Digitaaliset pelit ja pelaaminen <i>(Digital Games and Play)</i>	5
PRO GRADU -TUTKIELMA JA KYPSYYSNÄYTE 30 OP <i>(MASTER'S THESIS AND MATURITY EXAM 30 ECTS)</i>		
TITE3980	Pro gradu -tutkielma <i>(Master's Thesis)</i>	30
-	TITE3985 Pro gradu -alkuraportti <i>(Master's Thesis Research Plan)</i>	10

- TITE3986 Pro gradu -tutkielmaraportti (Master's Thesis)	20
- TITE3981 Pro gradu -tutkielmaesitelmä (Master's Thesis Presentation)	0
KNÄY300X Kypsyysnäyte (M.A. Essay Exam)	0

SIVUAINE TAI OPINTOKOKONAISUUS 25 OP
(MINOR OR A STUDY MODULE 25 ECTS)

Ktk-tutkinnon suorittanut tai kauppatieteellisen amk-tutkinnon suorittanut (tradenomi) voi valita sivuaineen tai opintokokonaisuuden vapaasti. Erityisesti suositellaan energiasektorille suuntautuville opiskelijoille energiatekniikka ja sähkötekniikka -sivuaineita.

(Students who have completed a Bachelor of Science in Economics and Business Administration or a BBA degree at a university of applied sciences can choose a minor or a study module freely. A minor in Energy Technology or Electrical Engineering is recommended to those who are interested in specializing in the energy sector.)

Muun tutkinnon kuten tekniikan tutkinnon suorittaneen tulee valita kauppatieteellinen sivuaine kuten johtaminen, kansainvälinen liiketoiminta, taloustiede, laskentatoimi ja rahoitus, markkinointi, talousoikeus, talousoikeuden ict-juridiikka ja tuotantotalous. Joissakin oppiaineissa sivuaineopiskelijoiden määrää on rajoitettu (tällöin sivuaineoikeutta haettava erikseen, huom! Hakuajat).

(Students who have completed another degree, for example a degree in technology, must choose a business-related minor such as management, international business, economics, finance and financial accounting, marketing, business law, ICT law of economics and industrial management. Note that the number of students is restricted in some of the minors and therefore the right to a minor subject needs to be applied for separately. Please pay attention to the application deadlines.)

ENERGIA-ALAN OPINNOT 0-15 OP
(ENERGY STUDIES 0-15 ECTS)

*Pakollinen opinto, ellei sisälly aikaisempiin opintoihin:
(Mandatory course unless completed in previous studies:)*

TUTA1110 Kestävä energialiiketoiminta (Sustainable Energy Business)	5
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Lisäksi suositellaan

(In addition, the following courses are recommended)

TITE3320 Computing and Communication Approaches to Energy Chain	5
SATE2020 Energy Production	5
KANS2024 Energy Economics (Energiatalous)	5

VAPAASTI VALITTAVAT OPINNOT 1-17 OP
(OPTIONAL STUDIES 1-17 ECTS)

Sovitaan HOPSissa opintoja siten, että tutkinnon minimilaaajuus täyttyy. Esimerkiksi Työharjoittelu.

(Defined in the Personal Study Plan so that the degree demand of 120 ECTS is fulfilled. For example: Practical Training.)

YHTEENSÄ (TOTAL 120 ECTS)	120 OP
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