

## **LAUREA UNIVERSITY OF APPLIED SCIENCES**

### **Degree Programme in Business Information Technology (Laurea Kerava, tiko), NTE11SA**

#### **Learning concept at Laurea**

Universities of applied sciences have three tasks set by law: research and development, regional development, and pedagogy. The effective integration of these three tasks has been seen as one of the keys to the successful completion of Laurea's statutory duties. The aim for Laurea is to produce competent graduates who become research-oriented developers of their work and their fields. A further aim is to develop and renew labour market competence through research and to produce innovations that make use of multidisciplinary competence to have an impact on our surroundings.

Laurea's learning concept is embodied in the Learning by Developing model, which has been rewarded by the Finnish Higher Education Evaluation Council. The objective of learning is competence, which is visible as new ways and means of working, and which allows for renewal of the labour market and the field. Learning by Developing takes place in workplace-oriented projects in which students, lecturers, workplace experts and customers work together to develop innovative solutions.

Students are seen as partners who, as their competence develops, are able to take on increasing responsibility and make use of their creativity to complete research and development tasks. Students acquire competence in learning environments comprising diverse workshops and labs. Professional competence is constructed out of the integrated combination of empirical data, a deep understanding of it, and skills in doing and handling situations. Working together to build knowledge-based skills leads to competence that allows students to manage diverse situations in the constantly changing world of work.

Learning at Laurea progresses through an orientation of skills. Scientific data is significant as a tool. Learning directs students to process knowledge and to select ethically significant knowledge that can be utilised and applied in development projects that correspond to their degrees. Laurea places importance on ensuring that students grow into skilled experts who can renew the labour market. Workplace-oriented development projects as learning environments allow for genuine learning, the construction of partnership networks, the application of meaningful experiences and the development of creativity and research orientation. In the work-oriented development projects, individuals and the target community develop their competence together. In addition, they generate new knowledge for developing and reforming the labour market.

#### **Learning environments**

The aim of the learning environment is to facilitate the achievement of learning outcomes while supporting the generation and development of new competence. Laurea's learning environments utilise internal and external networks and are in constant interaction with the workplace. Regional influence increases through communities and the networks that they form. Students use projects to learn the basics of networking, social skills and communication with experts in the field. Students grow into developers by carrying out development tasks and by interacting in competence networks.

Practical applications of learning environments include initiatives and projects that form innovation environments for the community, as well as various operating spaces designed for learning and development, competence hubs and development labs.

#### **The student's role and responsibility in learning**

In Laurea's work-oriented research and development projects, the concept of partnership implies cooperation between teachers, experts from the labour market and students. The cooperation is based on responsible commitment to the development project. Studying at Laurea requires critical thinking, problem-solving skills, self-directiveness, a proactive attitude and cooperation skills from students. The studies place a focus on an independent attitude. In development projects, all participants are seen as learners, because the projects aim to produce change and generate something new. Partnership also means mutual respect and appreciation for diverse skills. The progress of the development project requires sharing competence and building new competence out of different areas of expertise. Students participate as partners who build their competence by obtaining new tools and by taking part in various research and development initiatives.

## The teacher's role at Laurea

The teacher's role in development projects can be described as that of an expert, a participant and a pedagogical leader. The teacher cannot transfer competence to students but guides the student's learning process. Depending on their roles, Laurea's teachers are both researchers and developers, influencers in regional development, and pedagogues. Teachers who work as researchers publish reports that demonstrate the effectiveness of development projects as reformers and developers of competence in the labour market. As a developer, a teacher is responsible for ensuring the progress of a development project.

## Structure of the curriculum

Laurea's curricula are based on themes and study units. A theme refers to a wider competence area that typically requires that a student master several study units within the subject area. The contents of the themes and study units cover the core vocational competence in the field. Annual themes form an umbrella for studies from the perspective of increased professional growth. The curriculum contains the nationally defined generic competences (see Table 1) as part of the objectives set for the themes or study units. Mastering the generic competences ensures vocational education that meets the requirements set for the level to be obtained at universities of applied sciences, and mastering the themes builds competence needed in working life.

Table 1. National generic Competences (Arene 2010)

| Generic competences          | Description of the competence, bachelor level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LEARNING COMPETENCE          | <ul style="list-style-type: none"><li>• is able to self-evaluate and develop one's competence and learning style orientation</li><li>• is able to retrieve and analyze information and evaluate it critically</li><li>• is capable of taking responsibility for collaborative learning and sharing knowledge in teams</li></ul>                                                                                                                                                                                                                                                                                                                                                                                |
| ETHICAL COMPETENCE           | <ul style="list-style-type: none"><li>• is able to take responsibility for one's own actions and for the consequences of these actions</li><li>• is able to work according to the ethical principles of the subject field</li><li>• is able to take other people into account in one's actions</li><li>• is able to apply the principles of equality</li><li>• is able to apply the principles of sustainable development</li><li>• is capable of social influencing using one's know-how and based on ethical values</li></ul>                                                                                                                                                                                |
| WORKING COMMUNITY COMPETENCE | <ul style="list-style-type: none"><li>• is able to operate as a member of a work community</li><li>• is able to operate in communicative and interactive situations in working life</li><li>• is able to utilize information and communications technology in one's subject field</li><li>• knows the working life in one's subject field and is able to create personal contacts in working life and to operate in professional networks</li><li>• is capable of decision making in unpredicted situations</li><li>• is able to apply the principles of organizational management and leadership in working life and has abilities for supervision tasks</li><li>• possesses entrepreneurial skills</li></ul> |
| INNOVATION COMPETENCE        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

|                                 |                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | <ul style="list-style-type: none"> <li>• is able to conduct research, development and innovation projects applying the existing knowledge and methods of the field</li> <li>• is able to work in projects</li> <li>• is capable of creative problem solving and development of working methods</li> <li>• is able to find customer-oriented, sustainable and profitable solutions</li> </ul> |
| INTERNATIONALIZATION COMPETENCE | <ul style="list-style-type: none"> <li>• possesses communicative competence necessary for one's work and for professional development in the subject field</li> <li>• is able to operate in a multicultural environment</li> <li>• takes into account the effects of and opportunities for internationalization development in one's own field</li> </ul>                                    |

### Competence evaluation

Competence evaluation is based on the objectives described in the curriculum. These objectives define the requirements that students have to meet to achieve their degree titles. Competence evaluation shows how well the set objectives have been met. On the one hand, competence is seen as knowledge, skills and values, and on the other hand, as experience. Evaluation through development projects looks at an individual's and the project community's learning, the progress and significance of different processes, and the results achieved. Study units are evaluated on a numerical scale of 0 to 5 or on a pass/fail (H/O) basis. The evaluations apply criteria developed for evaluating the competence of students at the beginning of their studies and at graduation (see Table 2). The evaluation criteria for each study unit are given in the study unit's syllabus.

Table 2. Evaluation criteria for initial stage and graduation stage students

| BACHELOR'S DEGREE                                            | INITIAL STAGE STUDENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | GRADUATION STAGE STUDENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>EXCELLENT</p> <p>grade 5</p> <p>Students are able to:</p> | <ul style="list-style-type: none"> <li>• Apply professional concepts expertly.</li> <li>• Comply with occupational safety instructions responsibly and independently. <ul style="list-style-type: none"> <li>• Justify activities using research knowledge.</li> <li>• Work independently and take initiatives in line with objectives. Operations are often flexible, systematic, development-oriented, creative and active.</li> <li>• Select the appropriate techniques and models for activities, and justify the choices.</li> <li>• Act in customer-oriented ways and according to the situation.</li> <li>• Promote group activities.</li> <li>• Able to critically apply ethical principles in the subject field in one's conduct and tasks.</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Apply professional concepts expertly and extensively, and manage the big picture.</li> <li>• Develop occupational safety of their operating environment.</li> <li>• Develop operating methods by comparing, combining and selecting research knowledge.</li> <li>• Work independently and innovatively in line with objectives. Activities are mostly creative, focused on developing the workplace and distinctly professional.</li> <li>• Select, combine and develop appropriate techniques and models for activities.</li> <li>• Take initiatives and act responsibly in customer relations, and understand the meaning of customer relationships for the big picture.</li> <li>• Develop and renew activities of</li> </ul> |

|  |  |                                                                                                                                 |
|--|--|---------------------------------------------------------------------------------------------------------------------------------|
|  |  | multidisciplinary teams.<br>• Critically apply ethical principles in the subject field in complex and unanticipated situations. |
|--|--|---------------------------------------------------------------------------------------------------------------------------------|

| BACHELOR'S DEGREE                        | INITIAL STAGE STUDENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | GRADUATION STAGE STUDENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GOOD<br>grade 3<br>Students are able to: | <ul style="list-style-type: none"> <li>• Apply professional concepts systematically.</li> <li>• Apply occupational safety instructions in their activities.</li> <li>• Justify, compare and analyse their activities using general guidelines.</li> <li>• Able to cope independently in different tasks in each operating environment.</li> <li>• Apply acquired techniques and models diversely.</li> <li>• Act professionally in customer situations.</li> <li>• Work in a group in line with objectives.</li> <li>• Justify their activities in accordance with ethical principles.</li> </ul> | <ul style="list-style-type: none"> <li>• Apply professional concepts expertly.</li> <li>• Take care of occupational safety for themselves and the work community, and perceive development objects.</li> <li>• Select methods of operation in accordance with research knowledge and guidelines.</li> <li>• Work systematically and critically in line with objectives in complex situations. Operations are often flexible, systematic, creative and active.</li> <li>• Select the appropriate techniques and models for activities, and justify the choices.</li> <li>• Prioritise and maintain customer relationships.</li> <li>• Promote group activities.</li> <li>• Critically apply ethical principles in the subject field in one's conduct and tasks.</li> </ul> |

| BACHELOR'S DEGREE                                | INITIAL STAGE STUDENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | GRADUATION STAGE STUDENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SATISFACTORY<br>grade 1<br>Students are able to: | <ul style="list-style-type: none"> <li>• Apply most important/individual and appropriate professional concepts, and indicate their familiarity with the knowledge base.</li> <li>• Act safely, although activities are often schematic/ experimental/ fumbling/ self-involved.</li> <li>• Comply with rules and instructions, and justify their activities using provided instructions.</li> <li>• Act appropriately under guidance.</li> <li>• Use acquired techniques and models.</li> <li>• Take customers into account in their actions.</li> <li>• Act as group members.</li> <li>• Act in accordance with ethical</li> </ul> | <ul style="list-style-type: none"> <li>• Apply professional concepts systematically.</li> <li>• Comply with occupational safety instructions responsibly and independently.</li> <li>• Justify and analyse their activities using general guidelines and in accordance with evidence-based information.</li> <li>• Act professionally and responsibly in unanticipated customer and problem situations.</li> <li>• Work independently in different tasks in each operating environment.</li> <li>• Apply acquired techniques and models diversely</li> <li>• Act in customer-oriented ways</li> </ul> |

|  |             |                                                                                                                                                                                           |
|--|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | principles. | and according to the situation, and understand customer needs.<br>• Work in a group in line with objectives.<br>• Act and justify their activities in accordance with ethical principles. |
|--|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### **Degree programme's quality evaluation and development**

The quality of Laurea's operations is monitored and developed with the quality assurance system (picture 1.). The aim of the quality assurance system is e.g. to extensively guarantee the quality of education and of other activities, systematically produce quality-related data for the development of the operations and to promote recognition of insufficient quality.

Processes have been described as support for Laurea's basic operations. The core process is the Learning by Developing process, its implementation is supported by the Education process, the Strategy and Management process and the HR process.

Strategy Implementation Plan, where the critical success factors and their indicators have been defined, functions as a tool for monitoring and evaluating operations. Central indicators for a degree programme's quality assurance are e.g. progress of studies, learning through research and development, dropout rate, completion of studies and development of competence in graduating students. The results according to the indicators are discussed annually and based on them the appropriate measures for the development of operations are defined.

Besides the data related to critical success factor indicators, Laurea also collects other feedback and evaluation data in order to develop the quality of a degree programme. The degree programme specific curriculum is evaluated annually. In addition to personnel also students and working life representatives take part in the evaluation.

Students' most important channel of evaluating and developing operations is the student feedback system. Student feedback system includes feedback questionnaires that measure the quality of education, student's professional growth and student wellbeing as well as immediate feedback. Collecting feedback data, its systematic processing with students and personnel as well as versatile exploitation of the data enable continuous quality development in education.

Students are actively involved in different development teams both on Laurea and local unit levels. Consultation meetings between student union LAUREAMKO and the steering group are organised regularly. The aim of the meetings is to take into account the students' points of view in the development of the operations. The consultation meetings are held both on Laurea and local unit levels. Student members participate also in Laurea's internal audits which are organised once an academic year. Through the internal audits students contribute to the quality development of education and other operations.



## Laureas curriculum as a part of the European Higher Education Area

Finnish higher education institutions have reformed their curricula in accordance with the creation of the European Higher Education Area, i.e., the Bologna Process. The EU's strategic objectives regarding education also guide education in Finland. The Bologna Process covers a total 46 of countries, including some outside the EU. The aim of the Bologna Process is to establish a consistent, compatible and attractive Higher Education Area in Europe by 2010.

To promote the adoption of internationally understandable, comparable degrees, the process has created a system based on two main cycles: undergraduate (Bachelor level) and graduate (Master level). Finland has adapted its degree structure to align it with this European objective. In universities of applied sciences, the two-cycle degree is implemented in a way that students obtain a first-cycle (Bachelor's) degree, after which they have the opportunity to obtain a Master's degree. The requirement for access to Master's training is an undergraduate degree plus three years' work experience. The long-term objective is that approximately 20 per cent of Bachelor's graduates will take a Master's degree.

Finnish universities of applied sciences adopted ECTS (European Credit Transfer and Accumulation System) credits in 2005. In the ECTS, one academic year equals 60 credits. The ECTS is a student-centric system. It is based on the student workload needed to achieve the targets set for each degree programme.

The curricula describe the learning outcomes and competence. From the point of view of promoting international mobility, curricula must be internationally understandable. The aim of standardising the structures and learning targets of degrees is to improve the conditions for mobility within and between higher education institutions during the studies, and also in the workplace after graduation. In terms of the recognition and comparability of degrees taken in different countries, it is important to link learning targets to concrete competence requirements and definitions in the labour market.

Laurea's competence-based curriculum takes into account the demands of the Common European Framework. Studies are accumulated in the form of credits, and study units form larger modules. Competence is defined in terms of the students' learning outcomes. Currently resources are being directed towards further enhancing the ability of the curriculum implementations to generate new competence and innovations for Laurea's operating environment.

Sources:

The Bologna Process

<http://www.minedu.fi/OPM/Koulutus/artikkelit/bologna/index.html>

## **Global challenges and sustainable development in the curricula**

The activities of the higher education institutions are based on responsibility, sustainable development and understanding and appreciating diversity within the higher education community.

A suggested measure of the Strategy for the Internationalisation of Higher Education Institutions is that the higher education institutions will increase education and research cooperation based on national and international networking in order to contribute to the attainment of the goals of the UN Decade of Education for Sustainable Development 2005-2014. Laurea's curricula will be developed according to the Strategy for the Internationalisation of Higher Education Institutions 2009-2015. Out of Laurea values sense of community and social responsibility represent these perspectives most clearly. Moreover, ethical competence of the generic competences of university of applied sciences degrees also means the ability to apply the principles of sustainable development in one's own work. Functioning in the globalising world requires the higher education institutions to critically consider the ethicality of their operational principles.

The goal is that all Finnish degree programmes have at least 30 cr. of studies in foreign language in their curricula. The local units proceed towards this goal gradually. In some degree programmes the goal has already been reached. The goal is also to produce competence that enables participating in solving global problems and building activities on an ethically sustainable foundation.

Source: <http://www.minedu.fi/export/sites/default/OPM/Julkaisut/2009/liitteet/opm23.pdf?lang=fi>

## **Operating environment**

In future, the operating environment for nearly all fields of business information systems will focus on applied technology. Company investments are increasingly directed towards research and development, training, organisational development, customer relationship management, marketing and software. Information and communication technology is utilised more widely and innovations in the field take on a key role. The operating environment for business information systems requires skills in managing and developing a company's functions and processes using IT services and solutions.

In Laurea Kerava's area of operation, most jobs are in services. The development of knowledge-intensive and competence-intensive services is particularly important in the area. Innovative products and methods must be utilised actively in the public sector's own activities in order to develop and safeguard public services.

The operating environment is characterised by continuing globalisation, rapid development of information and communication technology, shorter lifecycle of products and services, increasing customer demands and multiculturalism. Innovations, user-driven and customer-oriented product and service development and management of networked business operations enable businesses to succeed.

The capacity to change and learn new things is essential in order to innovatively identify novel IT-based services and systems that can arise from existing technologies and software.

## **Expertise**

The development and application of business information technology involves not only computer science but also engineering, linguistics, labour science and communications. The significance of behavioural science grows as processes become more interactive. At Laurea, the subject of business information systems relates to applying the results of the above-mentioned sciences in multidisciplinary practical solutions.

Bachelors of Business Administration graduating from the Degree Programme in Business Information Systems may obtain employment as IT service experts, system experts, system designers, IT designers, software architects, technical designers, web application developers, network developers, programmers, micro support or online support people, IT trainers or consultants. As their experience grows, their careers may take them towards increasingly demanding IT jobs.

Graduates of Business Information Systems can work in companies that develop IT services and solutions or any other businesses or organisations that use these services and solutions. Employment opportunities lie in developing or maintaining IT services and solutions in trade, industry, social services, health care, education or public administration. The programme also prepares for entrepreneurship.

## **Competences**

Work in business information systems usually takes place in project-related teams. Cooperation, communication and social skills are important. Interaction skills are needed for internal and external customer contacts, and for meeting and working with various operators in the field.

Graduates work in making IT services and solutions usable for organisations and employees. This work requires consistency and planning; the ability to complete tasks from start to finish; persistence; accuracy; attention to detail and the ability to handle things as a whole; logical reasoning; and creative problem-solving skills. Experts in the field have to be prepared to continue learning and applying new things.

Graduates in Business Information Systems have the necessary practical skills for participating in developing, implementing and adopting information management solutions for organisations. The aim is to achieve a level of expertise that combines professional skills and a strong theoretical basis. Practical skills are acquired during the programme through projects, work placements and the thesis, which are carried out in authentic workplace situations in partnership with companies and other organisations.

General description of the competence gained by graduates includes the following areas:

Students master extensive and advanced knowledge in their own fields, including critical understanding and assessment of theories, central concepts, methods and principles. They understand the boundaries and applicability of professional task areas and/or disciplines. The students master advanced skills, which indicate comprehension of matters, ability to apply the learned and ability to find creative solutions, and which are required in the specialised field of work, science or art for solving complex or unanticipated problems.

Students are able to manage complex professional activities or projects, or work independently in demanding development and expert tasks of the profession. They are able to make decisions in unpredictable operating environments. They possess the basic requirements of working as an entrepreneur. In addition to the evaluation and development of their own competence, the students are able to take responsibility for the development of individuals and groups.

## **Professional Growth and Annual Themes**

The studies begin with basic studies. During the first year of study, compulsory studies are completed in the areas of information systems, business management and communications. The basic studies prepare for deepening one's competence during the professional studies. Basic skills in developing websites advance into the areas of programming as well as user-driven interfaces and software design. Students also deepen their competence in visual design and the use of diverse media elements.

Towards the end of their studies, students have mastered the methods of applied user culture and usability studies, and can apply their results to customer-driven planning. Students acquire skills in promoting and developing various operating units' digital media solutions and services at different stages of the production chain, such as market research, product concepts, customer-driven planning, information structure design, visualisation, and image, video and sound production for media elements.

In general, the content of the studies is in line with Kerava Laurea's following annual themes:

1. year The customer is important
2. year Core competence is important
3. year Collaboration is important
4. year Development is important

## **Description of the Degree Programme**

The Degree Programme in Business Information Systems generates multidisciplinary competence. Diverse studies in the field create a firm foundation. Students acquire skills in cooperating with organisations and other operators in the field. A part of this interaction process is founded in the skill to communicate in Finnish, Swedish, English and possible other languages.

Students of the Degree Programme in Business Information Systems also receive business skills. Business competence requires developing customer-oriented service operations from the point of view of creating new services and business. Students also become familiar with the possibilities of entrepreneurship. The degree programme examines important organisational aspects, such as communications, leadership and legal issues. General competence in human relations is essential, as are skills in interaction, cooperation and teamwork.

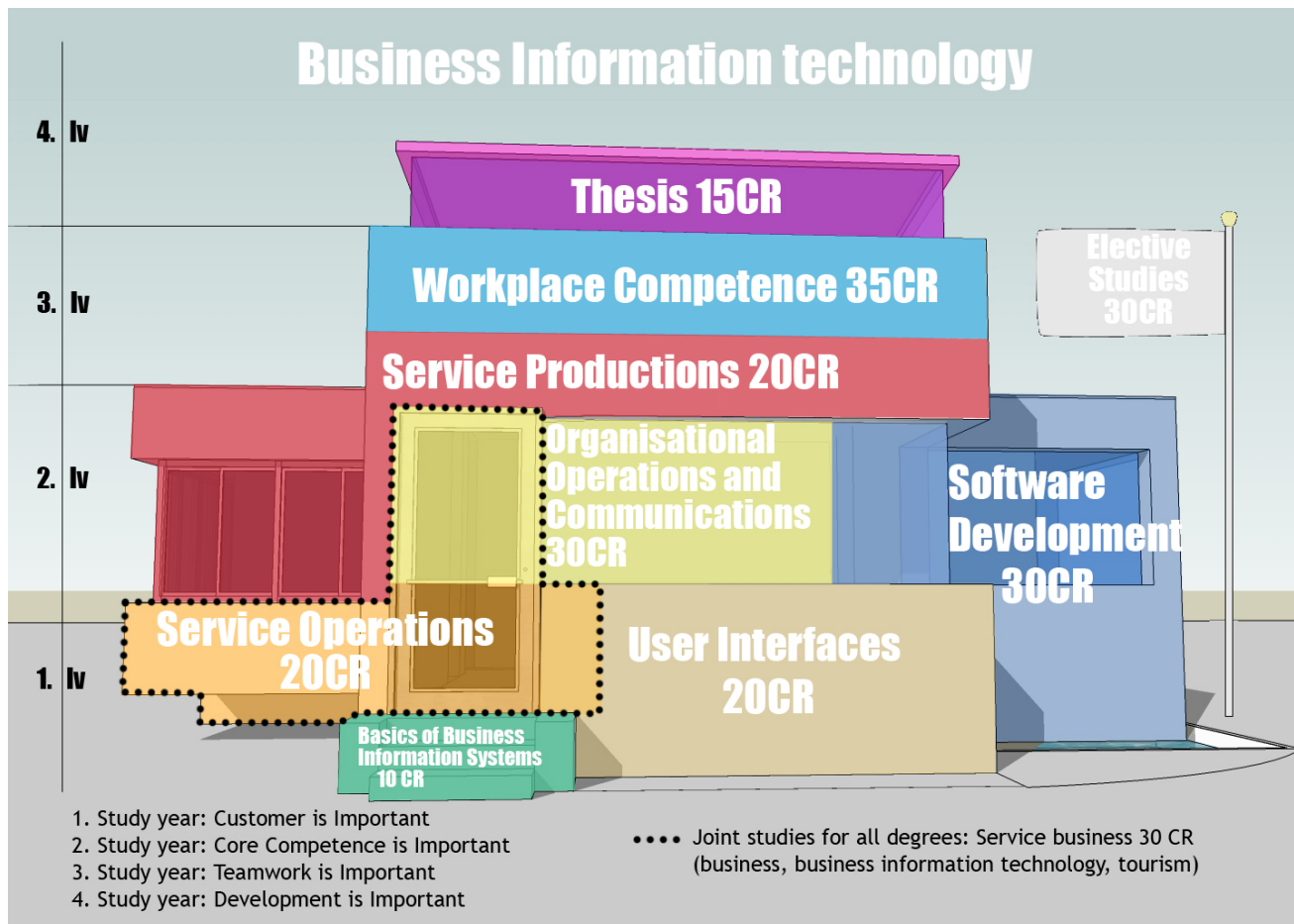
Core competence areas of the degree programme include software development, user-driven design, usability, digital media and communications as well as developing network services. The degree programme develops professional skills as well as general workplace competences (generic competences): learning competence, ethical competence, workplace competence, innovation competence and internationalisation competence.

## **Structure of the curriculum**

In the Degree Programme of Business Information Systems, studies are divided into basic studies, professional studies, elective studies, work placements and the thesis. Compulsory basic studies account for 180 cr., including 30 cr. in work placements and 15 cr. in the thesis.

The studies are divided into themes of a varying number of study units. Figure 1. describes the themes to be completed. Compulsory studies consist of various studies which offer different perspectives in the area of interactive network media. The degree is supplemented by 30 cr. in elective studies, which can be chosen from both the elective studies in BIT or from other Laurea degree programmes. Students can also complete elective studies in other universities of applied sciences or higher education institutions. Part of the degree can be completed during student exchanges abroad.

During the first two years of study, part of the studies in business management and communications constitute shared studies between all of the fields of study at Laurea Kerava (business management, business information systems and tourism). These shared studies blend student groups from different fields of study, and the studies can also be completed in English.



### Quality assurance process

Laurea Kerava has its own quality assurance system, supplementing Laurea's shared quality assurance system. Feedback is collected across Laurea at the beginning, in the middle and at the graduation stage of the studies. In addition, a wellbeing survey is carried out among the second-year students every two years. Laurea's administration handles the execution of the surveys. Laurea Kerava has a designated person who is responsible for the practical arrangements of the surveys and for storing the survey results electronically for the personnel to access. Feedback gathered at the different stages is discussed with students and personnel, and development targets are selected for the following year based on these discussions. Laurea Kerava also has a wellbeing team, which processes the results of the survey.

The curriculum and teaching are evaluated on the basis of feedback received on individual study units. At the beginning of each semester, individuals responsible for each study unit determine the deadline and processing methods for the feedback. The feedback is processed together by students and staff. Processing the feedback generates a study unit-specific report, listing any areas for improvement or successes. The reports are stored on a learning platform where they can be accessed by subsequent planners of the studies. In addition, quality assurance information is gathered from individual discussions with students, from work placement feedback, feedback generated in the thesis process, and from statements of working life partners.

Quantitative evaluation of the curriculum is carried out annually in connection with the AMKOTA statistics and through the semi-annual performance evaluation.

|       |                                                      | 1. year | 2. year | 3. year | 4. year |
|-------|------------------------------------------------------|---------|---------|---------|---------|
| OP    | STUDIES                                              | 60      | 60      | 60      | 30      |
| E001  | BASICS OF BUSINESS INFORMATION SYSTEMS               |         |         |         |         |
| E0001 | Becoming a Business Information Systems Professional | 5       |         |         |         |
| E0002 | Information Technology as a Tool                     | 5       |         |         |         |
| 00202 | Initial Test in English Skills                       | 0       |         |         |         |
| 00194 | Preparatory Studies in English                       | 3       |         |         |         |
| E002  | USER INTERFACES                                      |         |         |         |         |
| E0003 | Website Development                                  | 10      |         |         |         |
| E0004 | Basics in User Interface Visual Design               | 5       |         |         |         |
| E0005 | Planning and Implementation of Media Elements        | 5       |         |         |         |
| E003  | SERVICE OPERATIONS                                   |         |         |         |         |
| E0038 | Service Operations                                   | 5       |         |         |         |
| E0043 | Innovative Product Development                       | 5       |         |         |         |
| E0045 | Entrepreneurship                                     | 5       |         |         |         |
| E0048 | Svenska för affärslivet                              | 5       |         |         |         |
| 00634 | Oral skills in Swedish                               | 0       |         |         |         |
| 00635 | Written skills in Swedish                            | 0       |         |         |         |
| 00203 | Initial Test in Swedish Skills                       | 0       |         |         |         |
| 00195 | Preparatory Studies in Swedish                       | 3       |         |         |         |
| 00636 | Written skills in Finnish                            | 0       |         |         |         |
| 00637 | Oral skills in Finnish                               | 0       |         |         |         |
| E004  | SOFTWARE DEVELOPMENT                                 |         |         |         |         |
| E0006 | Basics of Information Management and Databases       | 5       |         |         |         |
| E0007 | Basics of Programming                                | 5       |         |         |         |
| E0008 | Object-Oriented Programming                          |         | 5       |         |         |
| E9903 | Software Requirements Management                     |         | 5       |         |         |
| E0009 | User-Centred Design                                  |         | 10      |         |         |
| E005  | ORGANISATIONAL OPERATIONS AND COMMUNICATIONS         |         |         |         |         |
| E0052 | Work Community and Leadership                        |         | 5       |         |         |
| E0055 | Intercultural Communication                          |         | 5       |         |         |
| E0017 | Organisational Processes                             |         | 5       |         |         |
| E0018 | Workplace Communications                             |         | 5       |         |         |
| E0019 | Mathematics and Statistical Research                 |         | 5       |         |         |
| E0020 | Legal Issues of IT Companies                         |         |         | 5       |         |
| E006  | SERVICE PRODUCTIONS                                  |         |         |         |         |
| E0011 | Software Development                                 |         | 10      |         |         |
| E0012 | Interactive Online Applications                      |         |         | 5       |         |
| E0016 | e-Business                                           |         |         | 5       |         |
| E007  | ELECTIVE STUDIES IN BUSINESS INFORMATION SYSTEMS     |         |         |         |         |
| E0021 | Usability Studies                                    |         | 5       |         |         |

|       |                                                          |    |    |    |    |
|-------|----------------------------------------------------------|----|----|----|----|
| E0022 | Managing Web Services                                    |    | 5  |    |    |
| E0023 | Testing and Introducing Web Services                     |    |    | 5  |    |
| E0024 | Mobile Application Development                           |    | 10 |    |    |
| E0025 | Audiovisual Production                                   |    | 5  |    |    |
| E0026 | 2D Animation                                             |    | 5  |    |    |
| E0027 | Operating Systems and Networks                           |    | 5  |    |    |
| E0028 | IT Solutions and Developing Organisational Communication |    | 5  |    |    |
| E008  | WORKPLACE COMPETENCE IN BUSINESS INFORMATION SYSTEMS     |    |    |    |    |
| 01235 | Practical Service Development Project                    |    |    | 5  |    |
| E0056 | Work Placement in Business Information Systems           |    |    | 30 |    |
| E009  | THESIS                                                   |    |    |    |    |
| 00043 | Thesis                                                   |    |    |    | 15 |
| 125   | ELECTIVE STUDIES                                         |    |    |    |    |
| E0122 | Project                                                  |    |    |    | 5  |
|       |                                                          | 60 | 60 | 60 | 30 |

## **E001 BASICS OF BUSINESS INFORMATION SYSTEMS, 10 cr**

### **Description:**

Students become attached to their chosen field and are motivated to aim for a related degree. Students get to know the study environment as a whole (curriculum, teaching method, fellow students).

### **The student will be able to:**

- Outline targets for their personal development and choose development objects, as well as define their personal learning targets and plans
- Have the necessary IT skills for the studies

### **Content:**

The theme's study units form an entity based on the students' own starting points and the requirements for success in the field. With the help of the core competences and future studies of the sector, students determine important development targets and form a long-lasting basis for motivation and learning.

### **Learning process:**

This is the initial theme, which takes place at the beginning of the first year of studies and thus at the beginning of professional growth. The starting point of the learning process is the development of the field and the region. The students' targets and development objects are defined in their personal study plans.

## **E0001 Becoming a Business Information Systems Professional, 5 cr**

### **The student is able to:**

- Communicate effectively, orally and in writing, in interaction with other students
- Analyse the future competence needs related to information systems
- Implement a personal study plan
- Use information sources in the field in Finnish and English
- Evaluate and develop their competence and learning methods
- Acquire, process and critically evaluate information

### **Contents of the study unit:**

- Argumentative writing and oral presentation
- Laurea's learning model
- Core competences of the industry
- Creating a personal study plan based on an analysis of R&D needs
- Planning, implementing and evaluating an applied research and development process
- Working independently, in groups and in networks

### **Study unit description:**

Students map the core competences of the business information systems sector, as well as its future needs for competence. The aim is to become familiar with competence development and communications. The study unit provides basic skills in planning studies.

## **E0002 Information Technology as a Tool, 5 cr**

### **The student is able to:**

- Use general work methods, tools and equipment in the field
- Grasp the basic information system theories
- Effectively use information services and services for their acquisition
- Apply information and communication technology in tasks within their own fields

### **Contents of the study unit:**

- Tools, work methods and work stations
- Computer functions and operating systems
- Presenting and searching for information

**Study unit description:**

The aim of the study unit is to ensure that students are able to use software tools as a personal communication method, adhering to common standards. Students also become familiar with the functions of a computer, operating systems and the basics in searching for information.

The study unit provides basic skills for studying business information systems.

**00202 Initial Test in English Skills, 0 cr****Study unit description:**

At the beginning of their studies, all students who have English and/or Swedish qualifications on prior certificates required for studies at Laurea, or who have received previous instruction in English and/or Swedish take initial tests in these languages. The initial tests are the same for all fields of study and may only be taken once. Students who transfer between degrees within Laurea do not have to retake the test. The test is used to check the students' starting level before language studies begin. Students who fail the test must take preparatory studies in the language at the start of their studies. Having passed the preparatory studies, students obtain credits for inclusion in elective studies.

**00194 Preparatory Studies in English, 3 cr****The student is able to:**

- master basic English vocabulary and grammar
- use various methods for improving their language skills

**Contents of the study unit:**

- main structures of the English language
- basic English vocabulary

**Study unit description:**

Students improve their skills in communicating in English as preparation for completing actual studies in the language.

**E002 USER INTERFACES, 20 cr****Description:**

Students can design, implement and develop visually outstanding user interfaces that support the employer's strategic targets, using applied research and development.

**The student will be able to:**

- Act as developers in diverse environments that produce user interfaces for digital media

**Content:**

This theme is scheduled for the early stages of professional growth. It provides students with basic skills in digital media, which are needed for developing competence. Authentic development projects are used to direct, deepen, concretise and structure the learning process.

**Learning process:**

The digital network communication competence contained in the theme forms the foundations for knowledge-based and skill-based professional competence in business information systems. The theme's study units form an entity that teaches students to act as developers of network communication in a global operating environment, and to work as opinion leaders in a multidisciplinary competence network. Students can use an applied research and development approach in their work, investigating and developing existing user interfaces.

**E0003 Website Development, 10 cr****The student is able to:**

- Use the key tools and techniques in online publishing
- Develop and publish web content
- Describe, develop and implement user interfaces from the point of view of supporting the employer's strategic targets
- Analyse various web content implementation solutions
- Evaluate website development needs and usability
- Use data networks as data traffic platforms
- Participate responsibly in project-based digital media production
- Assume responsibility for a group's learning and for the sharing of learned knowledge
- Students know how to work in projects

**Contents of the study unit:**

- Website design, development and publishing
- Principles of user interface design
- Technical implementation of browser-based user interfaces
- Network communication and requirements of multimedia presentations
- Project-based work
- Data networks as work environments

**Study unit description:**

Students plan, develop and implement websites with carefully considered content and proper structures. Students acquire competence in digital media project work and learn to use the main tools in the field.

**E0004 Basics in User Interface Visual Design, 5 cr**

**The student is able to:**

- Apply the basics and theory of visual design in planning user interfaces
- Creatively develop a look for a website, which illustrates its theme
- Master the production process of digital images, from adjusting and modifying images to creating multimedia elements
- Use vector graphics as a digital media production tool and know the basics of implementing corporate graphics

**Contents of the study unit:**

- Digital image manipulation and optimisation
- Use of vector graphics programs in creating media elements
- Including media elements in websites
- User interface visual design
- Creating a visual image for an organisation's website

**Study unit description:**

Students learn to use the tools of vector graphics and digital media in the production of multimedia presentations. They create a website design that is suitable for the needs of an organisation, and become familiar with basic production processes.

**E0005 Planning and Implementation of Media Elements, 5 cr**

**The student is able to:**

- Produce 2D animations and use them in developing digital media communications
- Master video filming techniques
- Master video editing methods and including videos in network communication
- Edit and render audio files as part of a multimedia presentation
- Creatively implement multimedia elements using image manipulation and vector graphics
- Observe international trends in visual design work
- Take into account the effects and opportunities of internationalisation in their operations

**Contents of the study unit:**

- Use of 2D animation programs in creating online and multimedia presentations
- Basics of video filming

- Editing video and audio files, and modifying them for an online environment
- Sharing digital media software
- Planning and scripting digital media

**Study unit description:**

Students produce and optimise media elements included in multimedia presentations, achieving the desired visual image for the website. The study unit examines the 2D production process and structure design. It makes use of animations in multimedia presentations and links them to other network communication.

**Previous studies:**

Basics in User Interface Visual Design study unit, or equivalent.

**E003 SERVICE OPERATIONS, 20 cr**

**Description:**

Students gain the basic skills for developing business operations, and are familiar with the main principles of service operations. They understand the structure of the sector. Students complete a civil service examination in Finnish or Swedish.

**The student will be able to:**

- Holistically examine a company's service operations
- Participate in a work community in Swedish

**Content:**

The theme's study units form an entity of service operation development. Examining the operations of individual companies focuses on functional business models. With regard to companies' core processes in the field, essential skills lie in selling and marketing products/services, managing customer relationships, and knowing delivery and production processes, as well as business management and support processes.

**Learning process:**

The theme's competence in service operations forms a basis for the business competence of Bachelors of Business Administration. The studies are scheduled for the first year of study. Students can deepen their business expertise through elective studies in the Degree Programme in Business Management.

NB! The study unit descriptions derive from the curriculum for the Degree Programme in Business Management, which has a deviating study unit description format (i.e., the structure differs somewhat)

**E0038 Service Operations, 5 cr**

**The student is able to:**

Students compile a business description.

The students are familiar with companies and organisations in their own sector and are able to establish personal contacts and networks in working life.

The students are able to comply with the ethical principles in the sector.

They are able to apply the principles of sustainable development

**Contents of the study unit:**

Key questions:

What is a company?

What information do a company's financial statements provide?

What are stakeholders, networks and clusters and how are they constructed?

**Study unit description:**

In the study unit, the students create an external description of a company, which contains the company's operating environment, stakeholders, clusters, and networks as well as the company's basic financial matters.

### **E0043 Innovative Product Development, 5 cr**

#### **The student is able to:**

Students are able to apply the principles of creative work and apply them to the product and service development process and to planning customer-centric operations. They are able to research and analyse customers and markets and apply entrepreneurship in the various stages of the innovative products and services development process.

The students are able to find customer-centric, sustainable, economically viable solutions.

They are able to solve problems in a creative manner and develop workshops.

#### **Contents of the study unit:**

Key questions:

How is the process of product and services development executed as part of productive business operations?

How is customer-centric product and service development carried out for domestic and international markets?

#### **Study unit description:**

Customer-centric product and service development means identifying the customer potential, defining needs, as well as using different areas of the product and service development process in a cost-effective manner in order to meet business objectives.

### **E0045 Entrepreneurship, 5 cr**

#### **The student is able to:**

Students are able to draw up a business plan and evaluate the feasibility of the plan. They are able to perform calculations needed when setting up a business and compile the necessary documents for the company. The students master entrepreneurial practices. They possess entrepreneurial skills.

#### **Contents of the study unit:**

Key questions:

What does entrepreneurship mean? What is the purpose of a business plan? What is the key content of the business plan? Which calculations are included in the business plan?

#### **Study unit description:**

Students plan their own start-up business operations in the context of the service they are planning.

### **E0048 Svenska för affärslivet, 5 cr**

#### **The student is able to:**

Students are able to describe their education and job duties and interpret and discuss texts dealing with the economy.

The students are able to communicate to their customers and other stakeholders verbally and in writing on the most important events in the business in Swedish.

The target skill level is B1.2 of the Common European Qualifications Framework.

#### **Contents of the study unit:**

What are the basic concepts of business management / information technology / tourism in Swedish?

What kind of differences are there in the corporate and community cultures in the Nordic countries?

How do I identify my own qualities in these sectors?

#### **Study unit description:**

Professional language skills mean mastering the basic concepts of business management / information technology / tourism in the target language. The students study the basic concepts of business and the most important communication situations in customer service, familiarise themselves with the different Nordic cultures, and identify their own competence.

**00634 Oral skills in Swedish, 0 cr****Study unit description:**

This study unit is for evaluating oral skills in Swedish.

**00635 Written skills in Swedish, 0 cr****Study unit description:**

This study unit is for evaluating written skills in Swedish.

**00203 Initial Test in Swedish Skills, 0 cr****Study unit description:**

At the beginning of their studies, all students who have English and/or Swedish qualifications on prior certificates required for studies at Laurea, or who have received previous instruction in English and/or Swedish take initial tests in these languages. The initial tests are the same for all fields of study and may only be taken once. Students who transfer between degrees within Laurea do not have to retake the test. The test is used to check the students' starting level before language studies begin. Students who fail the test must take preparatory studies in the language at the start of their studies. Having passed the preparatory studies, students obtain credits for inclusion in elective studies.

**00195 Preparatory Studies in Swedish, 3 cr****The student is able to:**

- master basic Swedish vocabulary and grammar
- use various methods for improving their language skills

**Contents of the study unit:**

- main structures of the Swedish language
- basic Swedish vocabulary

**Study unit description:**

Students improve their skills in communicating in Swedish as preparation for completing actual studies in the language.

**00636 Written skills in Finnish, 0 cr****00637 Oral skills in Finnish, 0 cr****E004 SOFTWARE DEVELOPMENT, 30 cr****Description:**

Students can participate in digital and interactive media design, implementation and development tasks. Students work according to a user-driven planning process, using applied research and development.

**The student will be able to:**

- Act as developers in diverse media environments
- Develop their competence in designing and implementing digital media solutions

**Content:**

The study units form a basis for competence in digital media production. They examine the design and implementation methods for interactive online media.

**Learning process:**

The theme takes place around the middle of the professional growth process. It provides a firm foundation for competence, which can be deepened in the desired direction in subsequent and elective studies.

**E0006 Basics of Information Management and Databases, 5 cr****The student is able to:**

- Manage and use relational databases
- Plan and implement relational databases
- Use the methods of conceptual analysis to model targets
- Use SQL (structured query language) as a database management tool

**Contents of the study unit:**

- Basics of databases
- Relational databases and data management systems
- Database ideation and development methods
- Designing, implementing and managing relational databases
- Conceptual analysis, needs analysis and SQL

**Study unit description:**

The competence gained in this study unit forms the basis for developmental competence in databases. The study unit provides structural design skills for a user-driven digital media product.

**Previous studies:**

Information Technology as a Tool study unit, or equivalent knowledge.

**E0007 Basics of Programming, 5 cr****The student is able to:**

- Know the basic syntax and structure of programming languages
- Plan, implement and test small-scale programmes using a suitable programming format
- Solve problems in a creative manner and develop work methods

**Contents of the study unit:**

- Basic programming concepts
- Pseudocode and flow diagrams
- Basic structure of programming languages
- Programming logic
- Commenting source code

**Study unit description:**

Students learn their first programming language. They produce small-scale software and practice solving logical problems.

**Previous studies:**

Information Technology as a Tool study unit, or equivalent knowledge.

**E0008 Object-Oriented Programming, 5 cr****The student is able to:**

- Apply the principles of object-oriented programming in software development
- Design object-structured applications using standard imaging techniques
- Make use of application libraries in software development

**Contents of the study unit:**

- Classes and objects
- Tables and other simple information structures
- Inheritance and interface classes
- Processing deviations
- Modelling libraries
- Application libraries

**Study unit description:**

Students learn to programme object-oriented structures using applications. Software design familiarises students with object description methods. Object-structured graphic user interfaces are created during the study unit.

**Previous studies:**

Basics of Programming study unit, or equivalent knowledge.

**E9903 Software Requirements Management, 5 cr****The student is able to:**

- Use software production methods
- Communicate with customers to define user requirements
- Define user-driven software and usability requirements
- Document software specifications and requirements

**Contents of the study unit:**

- Software production elements
- Requirements and usability requirements
- Specifications and documentation
- Quality control in development
- Product management

**Study unit description:**

The study unit examines software production elements in order to develop programs in line with user-driven requirements. It prepares students for working in software production projects and software specification.

**Previous studies:**

Basics of Programming study unit or equivalent knowledge.

**E0009 User-Centred Design, 10 cr****The student is able to:**

- Plan, implement and manage a user-centred design and production process
- Understand the opportunities offered by concept design and creative problem-solving methods in the design process and business activities
- Organise, analyse and report on user research in accordance with the ethics of the sector
- Use prototypes in user interface design
- Conduct research and development projects, applying the existing knowledge and methods in the field

**Contents of the study unit:**

- User-centred design
- User and usability studies
- Unrestricted design
- Iterative product development
- Ideation methods and conceptualisation
- Usability evaluations and evaluation methods

**Study unit description:**

Students conduct digital service product design and prototype-based ideation based on the user surveys that they

have carried out. The study unit provides students with competence in the digital media design and production process as well as for participating in research and development.

**Previous studies:**

Website Development study unit or equivalent knowledge.

**E005 ORGANISATIONAL OPERATIONS AND COMMUNICATIONS, 30 cr**

**Description:**

Students become familiar with various dimensions on steering organisational activities and management. They gain useful communication skills for domestic and international environments.

**E0052 Work Community and Leadership, 5 cr**

**The student is able to:**

Students are able to evaluate the organisation's culture, operations, HR processes and management. They use their interaction skills for profitable operations.

The students are able to work as members of the work community, and promote well-being in the community.

The students are able to manage work and function independently in expert roles.

**Contents of the study unit:**

What constitutes the functional entity of the work community? What are the HR processes? How to manage the organisation in a responsible manner, taking into consideration the internal and external stakeholders?

**Study unit description:**

In a work community, individuals work towards shared objectives. Leadership means combining the various resources within the organisation in an optimal manner and in line with the strategy. Appropriate leadership procedures, HR processes, and communication promote the organisation's values, culture, meeting of the objectives and well-being at work.

**E0055 Intercultural Communication, 5 cr**

**The student is able to:**

During a project, students learn multicultural meeting communications in English as well as producing a written publication in English on a selected topic.

The students are able to conduct multicultural cooperation.

They have the skills for working in projects.

**Contents of the study unit:**

How is a project plan created and how is it executed? How to combine the ways of working of people with different cultural backgrounds? How should multiculturalism be taken into account in communication?

**Study unit description:**

In the study unit, students execute and document a project. All students compile an online or printed publication.

The study unit is offered in English.

**E0017 Organisational Processes, 5 cr**

**The student is able to:**

- Analyse and describe the key functions and processes of a company
- Utilise the company's existing systems in developing the quality of its operations
- Use information systems in managing organisational operations

**Contents of the study unit:**

- Process modelling and description
- Quality systems
- Information system for steering operations
- Organisational information system entity

**Study unit description:**

Students become familiar with organisational processes and quality systems. They acquire information on the most common operational management systems.

**Previous studies:**

Studies in the Service Operations theme, or equivalent knowledge.

**E0018 Workplace Communications, 5 cr****The student is able to:**

- Implement and assess organisational communications in Finnish and English
- Communicate as experts about themselves, their tasks and their work community
- Possess the necessary language skills for tasks and related development
- Act in workplace situations requiring communication and interaction

**Contents of the study unit:**

- Aim of communications in networks and organisations
- Meeting and negotiation skills
- Business writing
- Expert communication skills
- Planning, implementing and assessing organisational communication

**Study unit description:**

The study unit focuses on functional organisational communications. Competence gained in the study unit relates to influencing individuals, work communities, and networks through communication. In addition to Finnish organisations, students become familiar with the communications of companies with English as their working language. The study unit is carried out in Finnish and English.

**Previous studies:**

Pass in the initial English language test.

**E0019 Mathematics and Statistical Research, 5 cr****The student is able to:**

- Carry out statistical research
- Draw conclusions on research results
- Report on the results and conclusions
- Apply mathematical competence in basic economic issues

**Contents of the study unit:**

- Quantitative research methods
- Statistical analysis
- Reporting on the results
- Basics of financial mathematics

**Study unit description:**

The study unit provides skills in assessing software and online services using statistical methods and standardised testing equipment. Students learn to apply mathematical skills to business activities.

**E0020 Legal Issues of IT Companies, 5 cr**

**The student is able to:**

- Act as a company director, manager or employee in line with the legal system
- Comply with intellectual property rights while drawing up commercial communication materials and producing software and online content

**Contents of the study unit:**

- Legal system
- Contract law, particularly in the sales of goods and services
- Legislation applying to the establishment and administration of a company
- Labour law
- Marketing legislation
- Copyright and neighbouring rights

**Study unit description:**

The study unit examines the Finnish legal system with particular focus on contract and corporate law. Students recognise the obligations imposed by the legal system on managers and employees. They also become familiar with the most important legislation for the IT industry.

**Previous studies:**

Study units in the Service Operations and Work Community and Leadership themes, or equivalent knowledge.

**E006 SERVICE PRODUCTIONS, 20 cr****Description:**

Students can design, implement and develop user-centred, clear and high-class digital media solutions in their chosen specialisation area.

**The student will be able to:**

- Build their own professional growth through advanced studies

**Content:**

The study units in the theme deepen students' knowledge of the different competences held in digital media.

**Learning process:**

Towards the end of the studies, students advance their competence in their chosen area within digital media. The theme's study units constitute elective studies.

**E0011 Software Development, 10 cr****The student is able to:**

- Design, implement and test online applications
- Work responsibly in a software development team
- Apply programming skills and agile methods in practical projects

**Contents of the study unit:**

- Software design
- Web-based applications
- Agile software development methods
- Application framework and design models

**Study unit description:**

The project-based study unit involves producing online applications. Development work takes place in teams, which adopt agile software development methods and examine the use of different application frameworks.

**Previous studies:**

Basics of Programming and Object-Oriented Programming study units, or equivalent knowledge.

## **E0012 Interactive Online Applications, 5 cr**

### **The student is able to:**

- Use the browser's application programming interface (API) to develop interactive web-applications
- Programme RIA components for the customer- and server side
- Use different RIA development environments

### **Contents of the study unit:**

- RIA techniques
- Customer- and server-side programming techniques
- RIA frameworks
- Application development environments

### **Study unit description:**

Students become familiar with advanced Internet applications (Rich Internet Applications, RIA), which involve asynchronous communication between the browser and server, the procedure mainly taking place in the browser. The study unit examines different online application development environments, and applies previously acquired application design principles.

### **Previous studies:**

Software Production and Software Development study units, or equivalent knowledge.

## **E0016 e-Business, 5 cr**

### **The student is able to:**

- Recognise the new possibilities of e-business and the needs of companies to develop their e-business activities
- Analyse how and why the economic structures of an industrial era are transferred onto the Internet
- Recognise the possibilities of social media in developing business and networks
- Use data networks diversely in the different company segments (marketing, customer service, etc.)

### **Contents of the study unit:**

- Changing earnings models of a network economy
- Online trading
- Possibilities of social media for business activities

### **Study unit description:**

The study unit examines the possibilities of e-business from the point of view of the individual, organisation and society. Students chart different operating models as well as related advantages and challenges.

### **Previous studies:**

Study units in the Service Operations theme, or equivalent studies.

## **E007 ELECTIVE STUDIES IN BUSINESS INFORMATION SYSTEMS, 30 cr**

### **Description:**

The aim is for students to deepen their competence in the areas of interactive online media and customer-driven service operations.

### **The student will be able to:**

- Master the theoretical basis and practical application of the fields of their choice

### **Content:**

The theme's study units advance the competence areas of IT professionals in various dimensions.

### **Learning process:**

Competence development in the middle and at the end of the studies is determined by the students' personal objectives and development targets.

## **E0021 Usability Studies, 5 cr**

### **The student is able to:**

- Innovatively develop the digital media research and development process
- Use the methods and techniques of usability studies in planning and implementing R&D projects that will benefit product and service design processes
- Plan, organise, analyse and report on a usability study
- Evaluate the usability of a digital media product

### **Contents of the study unit:**

- Usability evaluations and evaluation methods
- Designing usability studies to suit specific needs
- Implementing and managing the usability study
- Usability testing
- Analysing and reporting on results of studies

### **Study unit description:**

The study unit deepens skills to participate in research and development of interactive technology and services. It involves planning and implementing as well as analysing and reporting a usability study that supports the product and service development of the employer. Learning takes place through research and development.

### **Previous studies:**

User-Centred Design study unit or equivalent knowledge.

## **E0022 Managing Web Services, 5 cr**

### **The student is able to:**

- Develop and manage web services
- Maintain web servers
- Install and implement a publishing system
- Develop company content production solutions

### **Contents of the study unit:**

- Maintaining web services
- Maintaining a web server
- Installing and implementing a publishing system

### **Study unit description:**

The study unit provides competence in developing and managing web services, and in acting as web service administrators. The students deepen their competence in content production techniques, which allows them to participate as experts in developing and planning companies' content production solutions.

### **Previous studies:**

Basics of Programming study unit, or equivalent knowledge.

## **E0023 Testing and Introducing Web Services, 5 cr**

### **The student is able to:**

- Carry out functional and non-functional testing of web services
- Use testing tools and techniques
- Ensure the visibility and accessibility of a web service and use monitoring tools
- Use various kinds of testing methods and techniques as service development tools

### **Contents of the study unit:**

- Service developer testing methods
- Planning testing

- Unit and system testing
- Performance testing
- Commissioning tests
- Analysing results and developing services in accordance with the analysis

**Study unit description:**

Students learn the basic concepts of testing, receiving a clear picture of web service testing and its methods and tools. They can develop web services in accordance with test results, as well as plan, implement and report on testing and its progress.

**Previous studies:**

Basics of Programming study unit, or equivalent knowledge.

**E0024 Mobile Application Development, 10 cr**

**The student is able to:**

- Understand the possibilities of mobile services as part of service entities
- Develop, design and implement mobile applications, services and contents
- Programme applications for mobile environments
- Utilise the development environments of mobile applications in a diverse way
- Apply the principles of user-centred design for a mobile environment

**Contents of the study unit:**

- Challenges of mobile applications for services and contents
- User-centred mobile application design and implementation
- Programming within a mobile environment
- Effective use of the mobile application development environment

**Study unit description:**

The study unit involves developing up-to-date mobile applications and services as well as their forms of utilisation. Students gain an overview on constructing usable and attractive mobile applications and solutions.

**Previous studies:**

Basic skills in programming and databases.

**E0025 Audiovisual Production, 5 cr**

**The student is able to:**

- Save, edit and create audiovisual material
- Know the methods and operating principles of the audiovisual production process
- Edit audiovisual files for various media
- Investigate and develop the use of various applications in web communications and marketing

**Contents of the study unit:**

- Audiovisual file production and editing process
- Managing and developing the multimedia server use environment
- Optimising audiovisual elements as well as streaming techniques and their use in web communications
- Including media elements in multimedia presentations
- Using multimedia elements in web communications
- Creation process of a narrative presentation

**Study unit description:**

Students become familiar with audiovisual production processes as part of web communications and multimedia presentations. Students investigate and develop multimedia user environments on a web server and develop their management of web and marketing communication competence using multimedia elements. Students create a small-scale narrative film.

**Previous studies:**

Study units in the User Interfaces theme, or equivalent knowledge.

### **E0026 2D Animation, 5 cr**

**The student is able to:**

- Proceed from an idea to the final stages of an animation presentation
- Develop innovative linear and non-linear 2D animation
- Create stop motion and effect animation as well as conventional character animation
- Master different animation techniques and their combinations
- Include animation in global media environments
- Combine sound with animation

**Contents of the study unit:**

- Animation production process: Idea, script, storyboard, implementation
- Use and basics of 2D animation software
- Investigating and developing different animation techniques
- Including sound and effects as part of animation
- Using global development environments in multimedia production

**Study unit description:**

The study unit involves creating different types of 2D animations using various software. Students design and produce animation as part of web pages, making use of sound and effects. The narrative design is based on a script. Students acquire and produce information for international development cooperation, and follow international trends in the field.

**Previous studies:**

Study units in the User Interfaces theme, or equivalent knowledge.

### **E0027 Operating Systems and Networks, 5 cr**

**The student is able to:**

- Install the most common operating systems
- Perform administration tasks on different operating systems
- Know the basics of data network operations and structure
- Create and administrate local area networks
- Acknowledge the role of data security in the administration of computers and local area networks

**Contents of the study unit:**

- Installation, administration and maintenance of operating systems
- Basics of data network structure and operations
- Network techniques and connection procedures
- Data security

**Study unit description:**

The study unit involves practical installation and use of operating systems. Students also learn to install and administrate local area networks. Basic data security techniques are examined.

**Previous studies:**

Information Technology as a Tool study unit, or equivalent knowledge.

### **E0028 IT Solutions and Developing Organisational Communication, 5 cr**

**The student is able to:**

- Create an inspiring atmosphere for cooperation
- Steer the team towards shared goals in situations of cooperation
- Use IT applications necessary for implementing organisational communication
- Schedule work and take care of the timetable for the whole team in an unobtrusive way

- Work seamlessly with other students
- Structure, limit and enrich the contents of organisational communication
- Produce new knowledge and competence related to organisational communication

**Contents of the study unit:**

- Methods for creating joy of and enthusiasm for learning and satisfaction in achieving results
- Seamless cooperation, distribution of tasks and work in pairs as part of all learning
- Tools and programmes for implementing organisational communication
- Familiarisation with the structures, objectives and opportunities of different media from an organisational perspective and needs

**Study unit description:**

The study unit is a practical implementation of the Know-How project (Tietotaitotalkoot) among different organisations. The Know-How project is based on team work, definition of shared goals, agreement on distributing tasks, scheduling work and finding solutions for problems in cooperation. The study unit provides training to function as a so-called pilot (Luotsi), i.e. as a communication and team work coach for adults in order to improve organisational communication. The basic idea includes self-management and responsibility for one's own work within the teams, although team work can also be supported through steering. The Know-How project supports cooperation development and the building of trust among team members.

**E008 WORKPLACE COMPETENCE IN BUSINESS INFORMATION SYSTEMS, 35 cr**

**Description:**

Integrating competence with the labour market and workplace projects.

**The student will be able to:**

- Apply and develop their competence in workplace business information system tasks

**Content:**

Students work in practical tasks related to business information systems.

**Learning process:**

This theme is scheduled for the later stages of professional growth.

**01235 Practical Service Development Project, 5 cr**

**The student is able to:**

- Implement service innovations in a workplace network
- Make use of the team in expert tasks
- Use the tools and methods of applied R&D and carry out a target-oriented development project
- Take responsibility for their own actions and the consequences.
- Make decisions in unexpected situations
- Solve problems in a creative manner and develop work methods
- Find customer-oriented, sustainable, economically viable solutions

**Contents of the study unit:**

- Service innovation activities
- Creating a context and knowledge base
- Planning, implementing and evaluating a development project
- Working in a shared expertise group

**Study unit description:**

The study unit forms an objective-oriented development project, where students enhance their competence using applied R&D methods. The object of competence development is determined by Laurea's research and development policy.

**Previous studies:**

Main professional competences (at least 120 cr.), or equivalent knowledge.

## **E0056 Work Placement in Business Information Systems, 30 cr**

### **The student is able to:**

- Apply and develop their competence in workplace business information system tasks
- Participate fully in a work community
- Independently acquire new skills required for the work placement
- Observe and critically analyse the data processing environment of the host organisation
- Formulate well-founded development proposals regarding the host organisation's information system environment or practices
- Evaluate their own competence in business information systems
- Evaluate their career opportunities in business information systems
- Acknowledge different operators in their work

### **Contents of the study unit:**

- Creating a work competence development plan
- Practical work in the host organisation
- Drawing up a development report
- Evaluating competence and complementing career plans

### **Study unit description:**

The work placement allows students to practically apply acquired skills. As members of the work community, they participate in the daily operations of the host organisation.

## **E009 THESIS, 15 cr**

## **00043 Thesis, 15 cr**

### **The student is able to:**

- present well-grounded work development proposals
- conceptualise the phenomena of the workplace with a basis in research data
- use appropriate research and development methods for generating new data
- participate in development projects, working responsibly in a team with employers and other partners
- evaluate their own work and solutions critically
- manage the big picture, presenting their ideas logically and with justifications

### **Contents of the study unit:**

- familiarisation with the thesis and development project process, and coming up with a subject
- thesis plan describing the background and objectives of the thesis, main data from previous research on the subject, the research and development methods used and an implementation plan
- carrying out the work for the thesis
- reporting on and publishing the thesis
- maturity test

### **Study unit description:**

Students learn to develop real work processes through research, producing new solutions in the form of products, operating models or work cultures.

## **125 ELECTIVE STUDIES, 0 cr**

### **Description:**

Students use elective studies to deepen and broaden their competence in various themes and generic competences. Students should choose study units to align the content of their studies with their own personal interests and career objectives.

### **Content:**

Each curriculum contains a theme consisting of elective studies. In the students' personal study plans, the theme should be made up of the study units chosen by the student from Laurea's language studies, Laurea's shared studies or another degree programme's curriculum. Any studies completed at another higher education institution (university of applied sciences, university, Online University of Applied Sciences, foreign institution) that cannot be recognised for the degree programme but that the student wishes to include in the degree should be classified under this theme. The number of credits from elective studies can be set separately for each degree programme, taking into account recommendations for the field of study. The aim is to have at least 15 cr of elective studies in each degree programme

### **E0122 Project, 5 cr**

#### **The student is able to:**

- Carry out a practical project

#### **Contents of the study unit:**

- Carrying out a chosen project

#### **Study unit description:**

The study unit allows students to include their practical project as part of the degree.