APPLICATION

Study field "Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science" for assessment

Study field	*Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science*
Title of the higher education institution	*Informācijas sistēmu menedžmenta augstskola*
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Self-evaluation report

Study field "Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science"

ISMA University College

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1. Information on the Higher Education Institution/College

1.1. Basic information on the higher education institution/ college and its strategic development fields,.

A brief description of ISMA University of Applied Sciences

ISMA University of Applied Sciences (hereinafter - ISMA) is an institution of higher education and science founded on February 9, 1994 by a legal entity, joint-stock company ‘Izglītības Nams’. On January 25, 2000, ISMA was registered in the Register of Higher Education Institutions, Registration Certificate No. 3343800183. On November 15, 2002, based on the Decision No. 23 of November 14, 2002 of the Higher Education Council of the Republic of Latvia, ISMA was accredited for an indefinite period of time, granting the right to pursue accredited degree programs and to issue state recognized diplomas in higher education (Accreditation Certificate No 040 of November 15, 2002).

Mission and vision of ISMA

Mission of ISMA:

- Reating leaders and high qualification professionals who, with their knowledge, creative and innovative activities, and their developed sense of corporate social responsibility, are able to ensure the transformation and development of national economy;
- Offer their students global, integrating, and transformative learning experience that ensures reaching the heights of their personal and professional careers.

Vision of ISMA:

ISMA University of applied sciences is an internationally recognized, multicultural, and dynamic private university in latvian and european higher education area, featuring excellence in education, research, and innovation.

By the concept of **EXCELLENCE IN EDUCATION**, we understand the following:

- Research-based study programs which ensure our competitive advantage in the Latvian and international higher education market;
- Quality as relevance to the goal and the learning outcomes to be achieved;
- Quality as a responsibility to our students, partners and society;
- Quality as continuous improvement.

EXCELLENCE IN RESEARCH includes:

- Synergy between research and study process;
- Integration of doctoral students and young scientists in the international scientific environment;
- Developing new products and technologies with high added value to meet the needs of the society and ensure economic development;
- Transfer of knowledge and technology for the implementation of research results into production or service delivery;
- Integration into international networks of scientific excellence and integration into the European research area through joint mobility projects;
- Publication of the results of scientific work in the highest quality international scientific

periodicals.

EXCELLENCE IN INNOVATION means a change in our behaviour, our lives, and our perceptions:

- It is a new culture of relationships between students, staff and the university administration, with a special understanding of our multicultural environment;
- It is the flexibility of study programs, both in terms of content and form, and in terms of time, sequence and environment;
- It is a new organization of the study process that includes teaching and learning, the development of flexible study design models, the development of study materials and tools, the use of information and communication technologies, the use of alternative methods for knowledge acquisition;
- It is a new relationship with our partners.

ISMA Implemented study directions and the number of study programmes therein

1. Study direction: **Management, Administration and Real Estate Management**:
    - First cycle higher education Bachelor's programme: Business administration (code 42345, ISCED code 0413);
    - First cycle higher education Bachelor's programme: Tourism Business Management (code 42345, ISCED code 0413);
    - Second cycle higher education Master's programme: Business Administration (code 47345, ISCED code 0413).
2. Study direction: **Hotel and restaurant service, tourism and recreation organization**:
    - Short cycle professional higher education programme: Entrepreneurship in the restaurant business (code 41811, ISCED code 1013).
3. Study direction: **Information Technology, Computer Science, Electronics, Telecommunications, Computer Control and Computer Science:**
    - First cycle higher education Bachelor's programme: Information Systems (code 42481, ISCED code 0612);
    - Second cycle higher education Master's programme: Computer Systems (code 47481, ISCED code 0612).

General information on the branches of ISMA

ISMA has two branches:

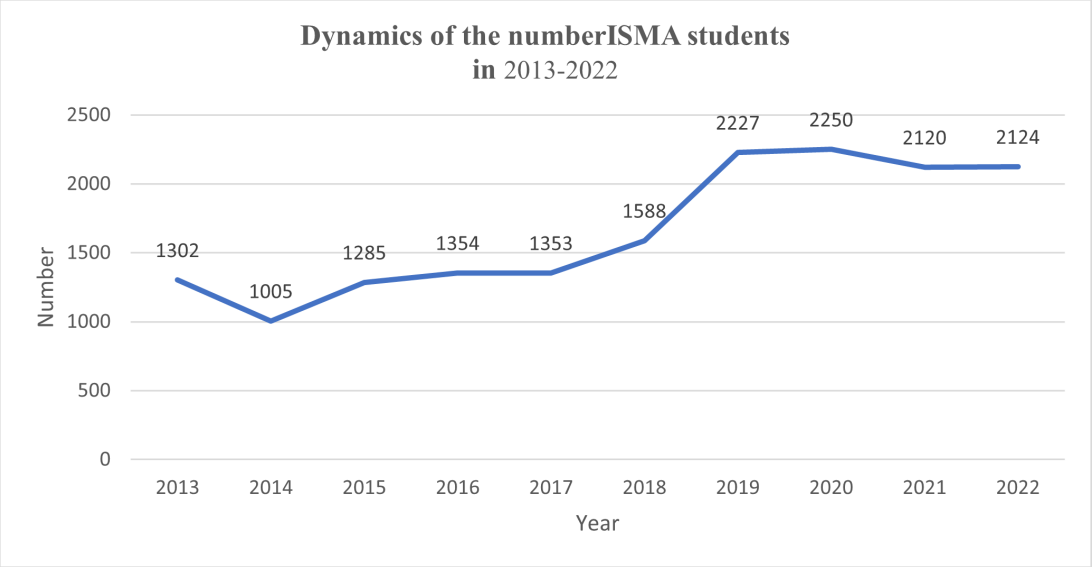
1. **Latgale Branch of the ISMA University of Applied Sciences** (registered in the Register of Educational Institutions on June 18, 2003, Registration Certificate No. 2744802395, issued October 25, 2011).
2. **ISMA University of Applied Sciences, Fergana (Uzbekistan) Branch** (the State Education Quality Service 2018 16 November Decision no. 2-26 / 744).

In both branches, so far only bachelor's programs in the direction "Management, administration and real estate management" are implemented, it is planned to start the implementation of the study program "Information systems" in the Fergana Branch.

Dynamics of the number of students in the university during the evaluation period

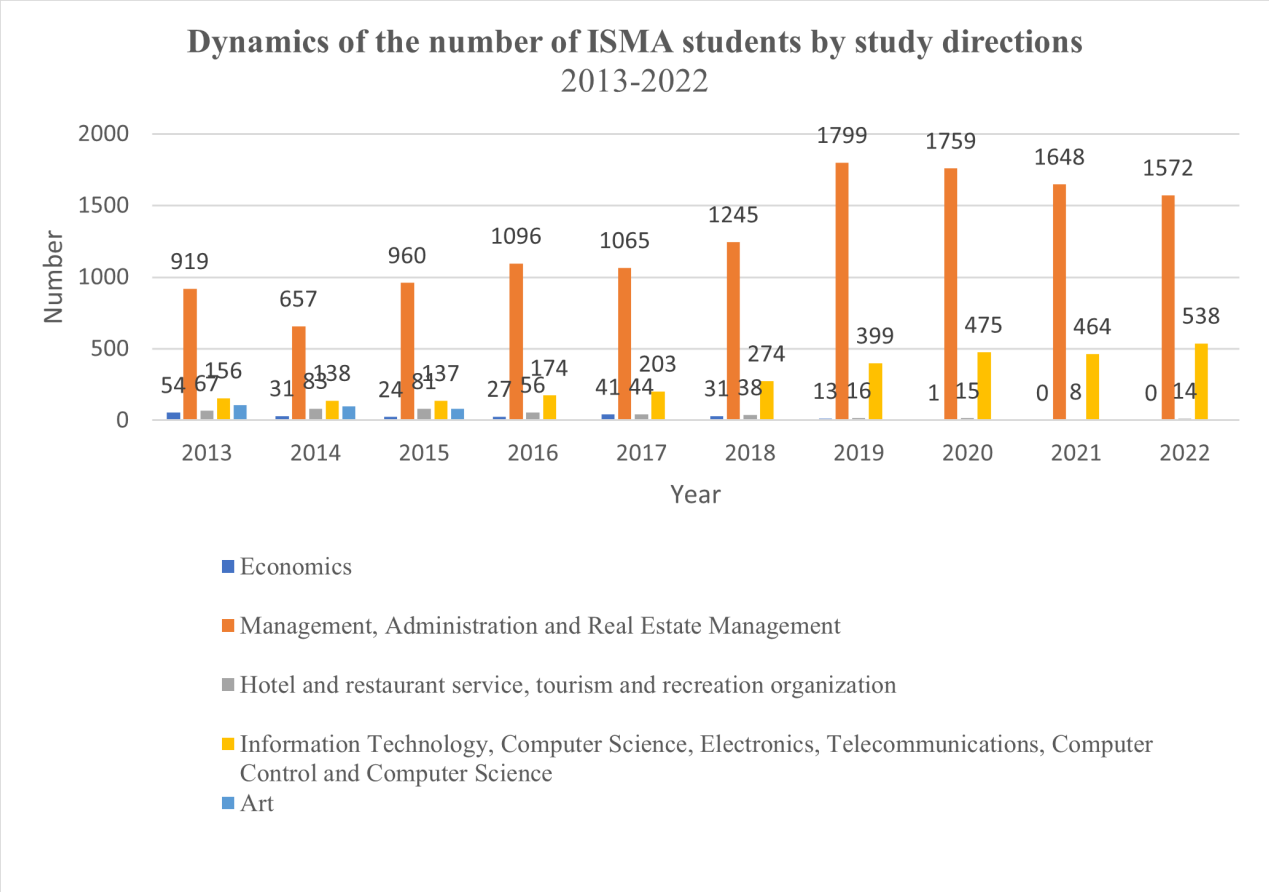
Analysing the statistical data on the number of students at ISMA during the assessment period, i.e.

from 2013 to 2022, a stable growth trend in the number of students can be observed (see Figure below) until 2020, which, taking into account the overall picture in the higher education space of Latvia is a very positive indicator. During the entire assessment period, the number of ISMA students increased by 822 students. A particularly rapid increase in the number of students was observed in 2018 and 2019, which is related to ISMA's marketing activities in attracting foreign students, as well as the opening of ISMA's Fergana (Uzbekistan) branch. At the same time, it shows the quality of the education service offered by ISMA, which ensures the choice of foreign students to study directly in the study directions implemented by ISMA and in the corresponding study programmes. On the other hand, the small drop in 2021 and 2022 can be explained by the remote study process introduced during the Covid-19 period, which many interested parties, especially from Uzbekistan, do not find sufficiently attractive, as they especially appreciate the onsite lectures of Riga lecturers.



Dynamics of the number of students at ISMA during the evaluation period

Analysing the dynamics of the number of ISMA students by the study directions implemented by ISMA, it can be seen that the largest number of students choose to study in the study direction "Management, administration and real estate management" implemented by ISMA, while in the study direction "Information technology, computer engineering, electronics, telecommunications, computer management and computer science" the fastest increase in the number of students can be observed even in the period when the total number of students fell (see Figure).



Dynamics of the number of students by study directions at ISMA during the evaluation period

It is the number of students in the mentioned study directions that ensures the positive trends in the dynamics of the number of ISMA students during the assessment period.

ISMA development strategy – the key development aims and directions

Despite the significant changes expected in the higher education area in the near future, as well as the ever-increasing competition in the local and international higher education market, ISMA has defined its values that we believe will help us overcome all expected barriers and strengthen our position in the future higher education area. Our values are as follows:

- **EXCELLENCE,** which reflects our commitment to providing a quality academic environment that inspires our students intellectually, provides high quality, development of modern and internationally recognized and sought after study programs. Excellence includes university development, physical well-being, and environmental protection. Seeking excellence in teaching and learning creates an atmosphere in which, by recognizing and appreciating our achievements, we promote our growth and develop our entrepreneurial spirit.
- **DIVERSITY** reflecting our commitment to creating and maintaining an inclusive environment that caters to our diverse needs, increasing everyone's access to diverse, university-relevant processes and culture, thereby reducing exclusion opportunities. Mastering our diversity creates a rich and friendly atmosphere where differences in culture, perspective and faith enrich the academic debate and public life of our university.
- **INTELLECTUAL FREEDOM,** which reflects our intellectual freedom, freedom of thought and expression, regardless of ideological beliefs. We are looking for different approaches to learning new knowledge that broaden our horizons and improve our understanding of society

and ourselves.
- **COOPERATION** that reflects our interdisciplinary approach and focuses on internal and external partnerships.
- **CREATIVITY,** which reflects our openness to new ideas and forms of expression, risk-taking, and entrepreneurial spirit.
- **RESPECT** (fellowship) which reflects our respectful behaviour towards one another, the ability to appreciate that all members of our community add value and deserve respect.
- **SUSTAINABILITY,** which reflects our commitment to preserving and protecting the knowledge created by our work, to building and protecting our ecosystem, and to responsibly managing the resources available to us.

ISMA development strategy is based on three strategic priorities:

- **Excellence in education;**
- **Excellence in research;**
- **Excellence in innovation;**

and four horizontal lines of action:

- **Human resources:** a human environment that promotes the development of existing and future staff (students, academic staff, general staff), providing quality study process and excellent research.
- **Internationalization:** opening up the university to the world with a view to improving its competitiveness at international and national level (attracting foreign students and teaching staff; mobility of students and academic staff; development of study programs in foreign languages; international cooperation in research; development of joint study programs and degrees).
- **Interdisciplinarity:** a synthesis of two or more disciplines that bring together a new level of discourse and knowledge that serves as the basis for developing new, innovative and contemporary content.
- **Infrastructure:** modern study and research environment with modern buildings and technical equipment.

Strategic goals and objectives of ISMA according to defined strategic priorities:

EXCELLENCE IN EDUCATION

G.1. To provide excellent study quality that stimulates our students' continued drive for new knowledge, as well as advanced student professional competence in a particular area of the economy, leadership, critical thinking, creativity, communication skills, transformative learning experiences, lifelong self-learning ability and other skills required in modern circumstances.

Objectives

O.1.1. Ensure the compliance of the study programs with the requirements of Latvian higher education policy planning documents and legal acts.

O.1.2. Ensure the improvement of study programs in accordance with the requirements of the society and the labour market, involving industry experts, employers, graduates and students.

O.1.3. Develop academic capacity by involving young researchers and doctoral students in the study process.

O.1.4. Develop and implement joint study programs with local and / or foreign partners to strengthen the reputation of study programs and provide opportunities for students to develop different skills.

O.1.5. Provide students with the opportunity to study three foreign languages in depth during their studies. For foreign students, one of them would be Latvian.

O.1.6. Promote the motivation of the academic staff for continuous professional development, research activities and improvement of study courses based on the innovations of the specific field or latest scientific knowledge.

O.1.7. Enhance study opportunities for students outside the classroom by providing access to the necessary literature and information resources, advanced study materials, databases and the MOODLE electronic learning management system.

O.1.8. Increase the efficiency of student internship and the quality of internship management in cooperation with local and foreign entrepreneurs and companies.

O.1.9. Promote interdisciplinary approach in the organization of the study process, promote cooperation between students of different study programs to realize common projects.

O.1.10. Facilitate student and academic staff participation in ERASMUS + mobility and other international projects.

O.1.11. Increase the number of foreign lecturers and guest lecturers engaged in academic work.

O.1.12. Promote the international recognition of ISMA and attract foreign students. Expand cooperation with foreign student attraction organizations.

O.1.13. Develop a study program development and consolidation plan.

O.1.14. Establish and develop ISMA foreign branches and representative offices.

O.1.15. Continuously improve the infrastructure to ensure a high quality study process. Provide infrastructure, in cooperation with partners, for students' extracurricular activities in line with their interests and needs (sports, artistic creation, etc.).

O.1.16. Increase the life-long learning opportunities offered by ISMA by improving the offer of special study programs, further education and professional development education programmes.

O.1.17. Ensure cost-effectiveness of the study programs by fully ensuring the quality level of the study programs.

EXCELLENCE IN RESEARCH

G.2. Build and develop a dynamic and interactive research body that generates ideas and discoveries, creates new areas of knowledge that contribute to the transfer of research results to the economy and changes our society, culture, environment and well-being.

Objectives

O.2.1. Create a stimulating scientific research environment that would ensure active involvement of academic staff and students in research.

O.2.2. Provide a modern and technologically advanced research base that will facilitate the active involvement of our researchers, academic staff and students in national and international research projects.

O.2.3. Expand cooperation with leading science and research centres at national, European and global level through joint research projects.

O.2.4. Promote student collaboration for joint, interdisciplinary research projects.

O.2.5. Promote the involvement of doctoral students in scientific research, develop the ISMA

internal project and grant system.

O.2.6. Promote the publication of publications of academic staff and students in internationally recognized scientific journals and collections of papers, as well as encourage presentation of papers at scientific conferences.

O.2.7. Analyse opportunities to include collections of ISMA scientific publications in internationally relevant databases and develop a plan of activities to be undertaken.

O.2.8. Develop and implement a system of support for the production and publication of scientific publications (support for editing articles, translating them into a foreign language (s) and publishing).

O.2.9. Promote the publication of scientific publications and research data in Open Access.

O.2.10. Promote the development of the ISMA Scientific Institute, develop ISMA Scientific Institute development strategy.

O.2.11. Increase the quality of students' research work by promoting wider application of research methods.

EXCELLENCE IN INNOVATION

G.3. Ensure the emergence and development of a new culture of relationships within the higher education community to create a new type of study process organization that includes teaching and learning, flexible study design models, development of study materials and tools, the use of information and communication technologies, and alternative methods of learning.

Objectives

O.3.1. Promote joint action by students, academic staff, and university administrators to achieve common goals and objectives based on internal coherence and order that is rooted in beliefs, values and norms, perceptions, and attitudes, with a special understanding of the multicultural environment of our institution.

O.3.2. Promote the development of our students' core values during the study process: self-esteem, self-reflection, language and creativity, tolerance, reconciliation, compassion, and other general human abilities that provide them with the orientation, motivation and preparation for a successful professional career.

O.3.3. Develop our students' understanding of values and value orientation related to the ability to delimit the essential from the irrelevant, the important from the less important in human life, the freedom to choose how to live, how to treat the environment and people, and how to behave.

O.3.4. Promote the involvement of students in the improvement of the study process and study content: feedback on the quality of the study process; improvement of study course content; advice on teaching and assessment methods; quality assessment of study programs, etc.

O.3.5. Ensure discussion and implementation / distribution in the university of good practices of teaching and learning encountered by students and academic staff during mobility.

O.3.6. Promote the use of such methods within the study process that allow students to value and learn from each other.

O.3.7. More often in the study process use situation simulations, project work, and work in groups. Promote extra-curricular activities and develop a system for their evaluation and recognition. To provide students with the opportunity to receive individual consultations with the academic staff.

O.3.8. Evaluate what support mechanisms and services need to be provided to students with special needs and students from different social groups. Develop an action plan for their implementation.

Development strategy: https://www.isma.lv/images/2024/ISMA_strategija_2024_2030_ENG_new.pdf

1.2. Description of the management structure of the higher education institution/ college, the main institutions involved in the decision-making process, their composition (percentage depending on the position, for instance, the academic staff, administrative staff members, students), and the powers of these institutions.

According to Section 12, Paragraph one of the Law on Higher Education Institutions and Paragraph 16 of ISMA Satversme, the main decision-making bodies of ISMA are the ISMA Constitutional Assembly, ISMA Senate, ISMA Rector, ISMA Academic Court of Arbitration. In accordance with Article 16 of the Law on Higher Education Institutions and Article 45 of the ISMA Constitution, the ISMA Advisory Convention has been established and is operating. At the same time, the development and implementation of ISMA Study Directions is coordinated by the ISMA Study Directions Council.

The operation of **ISMA Constitutional Assembly** is regulated by Paragraphs 21, 22, 23, 24, 25, 26, and 27 of ISMA Satversme, as well as by-laws of the ISMA Constitutional Assembly **(approved at the Session of the Constitutional Assembly on December 20, 2012),**

The Constitutional Assembly of ISMA has 30 representatives who are elected in accordance with Section 13, Paragraph three of the Law on Higher Education Institutions:

- 18 representatives (60%) from the academic staff;
- 6 representatives (20%) from students;
- 6 representatives (20%) from the general staff.

The term of office of the representatives of the Constitutional Assembly of ISMA is four years.

The competence of the Constitutional Assembly of ISMA is:

- Adopt the ISMA Constitution and make amendments thereto;
- Elect and dismiss the Rector of ISMA;
- Hear the report of the Rector of ISMA;
- Elect the ISMA Senate and dismiss Senators;
- Elect and dismiss representatives of the ISMA Academic Arbitration Court;
- Approve the by-laws of the ISMA Constitutional Assembly, Senate and Academic Arbitration;
- Elect the chairman, vice-chairman and secretary of the ISMA Constitutional Assembly;
- Consider and decide on other conceptual issues of the academic and scientific activities and development of the University.

Student representatives at the ISMA Constitutional Assembly have the right of veto on issues affecting students' interests. Following the application of the veto, the issue shall be examined by the Conciliation Commission that is established by the chairperson of the ISMA Constitutional Assembly on a parity basis. The decision of the Conciliation Commission shall be approved by the Constitutional Assembly of the ISMA by a two-thirds majority of the members present.

The ISMA Senate is a collegial management body and decision-making body for personnel, which

approves the rules and regulations governing the scope of ISMA (reviews and approves study programs, establishes and dismantles units etc., sets study fees). The activities and competence of the ISMA Senate are regulated by Articles 28, 29, 30, 31 and 32 of the ISMA Satversme and the ISMA Senate Statute (approved at the Session of the Constitutional Assembly on December 20, 2012, as amended at the Session of March 30, 2017).

The composition of the ISMA Senate consists of 20 senators who are elected according to Section 15, Paragraph three of the Law on Higher Education Institutions:

- 15 senators (75%) from the academic staff;
- 4 senators (20%) from students;
- 1 senator from the general staff.

The ISMA Senate is elected for a term not exceeding three years.

The ISMA Senate is competent to the following:

- Decide on the academic and scientific issues of ISMA and its departments; approve the rules and regulations governing the scope of ISMA;
- Approve the regulations of the ISMA units;
- Approve the documents regulating the study process: study programs and descriptions of their content and implementation, self-evaluation reports, plans and timetables, etc.; determine the procedure for their development and approval;
- Approve the by-laws and composition of the ISMA Council of Advisers;
- Approve the regulations of the academic positions and the procedure for their election;
- approve the ISMA Internal Rules;
- In agreement with the Rector, decide on admission of visiting professors, visiting docents or visiting lecturers without announcing the competition for a term of up to two years;
- Examine the annual report on implementation of the budget and the report of the sworn auditor on the results of the financial verification of ISMA;
- Decide on other issues that are within the competence of the Senate in accordance with the Constitution of the ISMA and the Regulations of the ISMA Senate.

Student representatives at ISMA Senate meetings have veto rights over issues affecting students' interests. Following the application of the veto, the issue shall be examined by a Conciliation Commission set up by the President of the ISMA Senate on a parity basis. The decision of the Conciliation Commission shall be approved by a two-thirds majority vote of the Senate of the ISMA.

The ISMA Rector shall carry out the administrative management of ISMA and shall represent ISMA without specific authorization. The Rector submits an annual report on ISMA activities to the Founder and the ISMA Senate. The Rector shall ensure and be responsible for the compliance of the higher education documents issued by ISMA with the quality of education, as well as the compliance of ISMA activities with the applicable laws and regulations and the ISMA Satversme. The rights and duties of the Rector are determined by the employment contract, ISMA Satversme and other regulatory enactments.

The Rector:

- Represents ISMA without specific authorization;
- Implements the administrative management of ISMA, compliance of ISMA activities with the Education Law, the Law on Higher Education Institutions and other regulatory enactments, as well as ISMA Satversme;
- Prepares and submits an annual report on ISMA activities to the ISMA Senate and Founder;
- Ensures the implementation of the ISMA strategy;

- Ensure the quality of the provided education, scientific research and artistic creativity of ISMA;
- Promotes the development of the ISMA staff and ensures academic freedom of the academic staff and students;
- Determine and coordinates with the Senate of ISMA the number of professors, associate professors, lecturers and other academic staff; concludes agreements with representatives of the academic staff; decides on the replacement of the academic staff during a temporary absence, if it does not exceed two years;
- Removes a person from the list of students;
- Ensures the confidentiality of the information at the disposal of ISMA, as well as the requirements for the processing of personal data specified in regulatory enactments;
- Performs other duties of the Rector specified in regulatory enactments.

The activities of the **ISMA Academic Arbitration Court** are regulated by Paragraphs 38, 39, 40 and 41 of ISMA Satversme and the Regulations of the ISMA Academic Arbitration Court (approved at the session of the Constitutional Assembly of 20 December 2012). The ISMA Academic Arbitration Court consists of 3 arbitrators, whose term of office is three years. In the composition of the ISMA Academic Arbitration Court, the Constitutional Assembly of the ISMA elects 2 representatives of the academic staff by secret ballot, while 1 student representative is elected by the ISMA Student Self-Government.

The ISMA Academic Arbitration Court shall consider the following issues:

- Applications of students and academic staff regarding restrictions or violations of academic freedom and rights established by ISMA Satversme;
- Disputes between ISMA officials and subordinate governing bodies;
- In the cases specified in the Law on Higher Education Institutions: applications for the contestation of an administrative act or actual action and take the relevant decisions thereon.

The Board is an executive body established by the Founder, the composition and formation of which shall be governed by the Statutes of the ISMA and the Commercial Law.

The activities and competence of the Board are determined by the Statutes of ISMA, the Commercial Law and Articles 42, 43 and 44 of ISMA Satversme. The Board is the governing body of ISMA for strategic and financial issues of ISMA and is responsible for the following:

- Propose the candidacy of the Rector for election to the Constitutional Assembly of the ISMA and the dismissal of the Rector;
- Make a proposal to the ISMA Senate to convene an extraordinary session of the Constitutional Assembly;
- Decide on issues of academic and scientific activities in cooperation with the ISMA Senate;
- Make proposals to the ISMA Senate for the establishment, reorganization or dissolution of ISMA units;
- Determine the salary of ISMA staff;
- Draft ISMA Satversme or its amendments;
- Perform any other duties assigned to it.

The Board shall adhere to the guidelines set by the Founder for the ISMA strategic long-term goals as well as the Strategic Action Plan approved by the Founder.

The ISMA Advisory Convention is an advisory body advising the Board, the ISMA Senate, and the Rector on ISMA Development Strategy.

Articles 45, 46, 47, 48 and 49 of ISMA Satversme, as well as by-laws of the ISMA Advisory Convention (approved by the ISMA Senate on March 21, 2013, Minutes No.38), regulate the activities of the ISMA Advisory Convention.

As potential members of the ISMA Advisory Convention may be nominated scientific, educational, cultural or economic experts who, with their professionalism, work experience, competence and achievements, have demonstrated public confidence and are capable of contributing to the development of the University and are not staff or students.

Nominees for the composition of the ISMA Advisory Convention may be nominated by the Board, the Senate, or the Rector. The ISMA Advisory Convention shall be elected for a term of three years. The Senate may also decide to change the composition of the Convention, if necessary, by withdrawing its members and electing new members, even between elections to the ISMA Advisory Convention.

ISMA Study Direction Council is a collegial body of ISMA management, which coordinates the development and implementation of a particular study direction.

The activities of the ISMA Study Directions Council are governed by the ISMA Study Directions Regulations (approved by the ISMA Senate on December 29, 2016, Protocol No. 7-16, with amendments, see Annex No.2.1.6.).

The ISMA Study Directions Council consists of:

- Head of study direction;
- Directors of study programs included in the study direction;
- Managers of study program specialization included in the study direction;
- Student representatives studying in a particular field of study;
- Representatives of the companies (organizations) in the sector.

The functions of the ISMA Study Directions Council are as follows:

- to harmonize the aim, implementation concept and development strategy of the study direction presented by the director of the study direction;
- to harmonize aims, tasks, learning outcomes, study plans and their implementation of the study programs included in the study direction;
- to harmonize the content and requirements of the final examinations of the study programs included in the study direction;
- to coordinate changes in the content of the study programs included in the study direction;
- to harmonize the content of the new study programs presented by the director of the study direction;
- to coordinate the self-evaluation of the study direction;
- to review and approve the final thesis topic and traineeship assignments;
- to nominate and submit to the Vice-Rector for Studies vacancies for academic staff positions in the field of study direction;
- to analyze the results of surveys of students, graduates, employees and employers and recommendations of the students' self-government with the aim to improve the content and implementation of the study direction.

1.3. Description of the mechanism for the implementation of the quality policy and the procedures for the assurance of the quality of higher education. Description of the stakeholders involved in the development and improvement of the quality assurance

system and their role in these processes.

ISMA Quality Management System (hereinafter - QMS) is based on the basic principles and requirements of the European Foundation for Quality Management (EFQM) excellence model and the international excellence standard Investors in Excellence, which, combining the best approaches to excellence, form a unique framework to ensure continuous improvement of ISMA in all key areas of operation and help achieve a high level of performance. The EFQM excellence model (www.efqm.org) is a tool created by the European Quality Management Foundation, a set of guidelines that can be used to characterize the activity of business organizations in order to create the appropriate conditions for them to achieve sustainable excellence. Taking this model as a reference point, the main aim is not to assess the current situation of the organization, but to identify specific areas for development. Taken together, these standards define the best practice towards excellence, ensuring continuous improvement in the areas most important to ISMA staff, clients and stakeholders.

The purpose of the ISMA Quality Management System (QMS) is to increase the efficiency of ISMA operations, to organize and systematize internal processes and procedures, to help staff and stakeholders understand their role and increase their motivation to engage in the development of ISMA activities.

QMS focuses on setting and achieving balanced, positively measurable goals through effective and efficient leadership, provision of high quality education services, resource management and performance-oriented activities.

Facilitators			**Outcomes**	
Synergy of leadership and management	Policy and strategy	**Processes**	Academic and general personnel performance	**Achievements and evaluation of results**
	Personnel (academic, general, students)		Student outcomes and satisfaction	
	Partnership and resources		Results for society	
Innovation and learning				

Leadership is about the most important things that ensure cohesion and a successful culture. The leadership component helps to anticipate change and trends and make smart plans.

The component of provision of high quality education services enables to focus on the core policies of ISMA. All ISMA processes are reviewed and refined to support success, including highlighting what matters most. Understanding and managing the needs and expectations of customers, provision of high quality education and science products and services, and maintaining effective

communication are the approaches that jointly support the sustainability of ISMA performance.

In turn, the component of resource management ensures that all resources are managed and maximized for the efficiency and business growth; meanwhile, the achievement component is the cornerstone of success and helps ensure that what is most important to ISMA is achieved.

The developed ISMA Quality Assurance Policy, which is approved by ISMA Senate meeting of April 25, protocol No.1-19, is available to any interested on ISMA webpage. ISMA staff and students have free access to ISMA QMS Handbook on ISMA intranet, the same as cooperation partners (at the discretion of ISMA administration). The issuance of the Handbook is controlled; the publishing and distribution of its copies shall be made only by the approval of ISMA Quality Assurance executive.

ISMA Document Structure and Hierarchy.

Level 1 - ISMA Management Documents:

- ISMA Satversme;
- ISMA Regulations on Satversme Assembly;
- ISMA Statute of Senate;
- ISMA Regulations on Convention of Advisors;
- ISMA Regulations on structural units;
- ISMA Regulations on Study Directions Council;
- ISMA Regulations on Students' Self-government Body.

Level 2 - Strategic and planning documents, their implementation and control:

- ISMA University of Applied Sciences Development Strategy for 2018-2023 (ISMA Strategy);
- Fergana Branch (Uzbekistan) ISMA (Latvia) – (ISMA Fergana Branch) - Development Strategy for 2019-2029;
- ISMA Quality Assurance Policy;
- Orders of the Rector;
- Risk management policy;
- Personnel policy.

Level 3 - Documents regulating the principal activity of ISMA:

- ISMA internal regulatory enactments;
- Documents describing primary activity processes (process descriptions, internal orders).

Level 4 – Documents regulating supporting activity of ISMA:

- Documents describing supporting activity processes (process descriptions, internal orders).

Level 5 - Support elements:

- Methodological materials;
- Manuals;
- Databases;
- Forms;
- Register of internal regulatory documents;
- Register of external regulatory documents.

Criteria	Procedures/documents	Responsibility

1. Synergy of leadership and management	ISMA Strategy ISMA Fergana Branch strategy Organisational structure Regulations on Study Direction Cooperation agreement Student, graduates, employers surveys ISMA Human recourse development strategy	Satversme Assembly Senate Rector Professors' Councils Career Centre Head of Study Direction
1.1. Developed mission, vision, values, and strategic priorities.		
1.2. Leaders are personally involved in ensuring the continuous improvement and development of the management system of the university		
1.3. Leaders have close relationship with students, cooperation partners and society representatives.		
1.4. In synergy with management leaders inspire, motivate and support university personnel.		
2. Policy and strategy	Satversme Quality Policy Regulations on Studies Study directions development plans	Senate Study Directions Council
2.1. based on present and future stakeholder needs and expectations		
2.2. developed and improved, based on the actions performed and the evaluation of achievements and results		
2.3. regularly reviewed, improved and updated		
2.4. implemented according to priority processes		
2.5. are brought to life and implemented		
3. Personnel (academic, general, students)	Satversme ISMA Strategy Human recourse development strategy Internationalisation strategy Surveys	Rector Departments Personnel Department Study Directions Council Student Council
3.1. Personnel resources are planned, managed and improved		
3.2. The knowledge, skills and competences of the personnel are regularly evaluated and developed		

3.3. is engaged and acting according to rights and obligations		
3.4. cooperates with management		
3.5. People feel valued and supported		
4. Partnership and resources	Internationalisation strategy Cooperation agreements with Latvian universities, employers and professional organizations Business plan	Rector Finance Department Vice-rector for international relations Vice-rector for administrative work Vice-rector for innovation and development Professors' Councils
4.1. Cooperation with external partners is ongoing		
4.2. Finances are managed		
4.3. The material and technical base is provided		
4.4. Appropriate technologies are used		
4.5. Circulation of information is ensured		
5. Processes	Quality Policy Quality Management System Regulations on Studies Internal regulations Regulations on Distance learning The Unified Anti-Plagiarism System	Quality Management Department Senate Vice-rector for Studies Study Directions Council
5.1. Processes are managed systemically		
5.2. If necessary, processes are improved to increase the satisfaction of all parties involved		
5.3. In accordance with the needs of the labour market, existing study programmes are improved and new ones are created		
5.4. Study programmes are implemented according to the plan, ensuring their availability and quality		
5.5. A system has been developed for providing feedback and improving the operation of the university		

	Indicators	Responsibility
6. Academic and general staff performance	Number of foreign guest lecturers. Number of projects led/participated by academic staff. Number of internationally recognized publications. Number of joint publications of lecturers and students at ISMA conferences. Personnel satisfaction	Vice-rector for Studies Vice-rector for Science Vice-rector for Academic Work Student Council
6.1. Satisfaction surveys		
6.2. Evaluation of professional performance		
7. Student outcomes and satisfaction	Student and graduate satisfaction. Dropout Quality of final theses Graduate employment Discounts for the best Participation in Student Council Outbound mobility The number of graduates of Bachelor's programmes enrolled in the Master's programme	Vice-rector for Studies Vice-rector for Academic Work Student Council
7.1. Satisfaction surveys		
7.2. Evaluation of student performance		
8. Results for society	Number of contracts with merchants and other cooperation institutions per year. Assessment of employers. Number of matriculated	Vice-rector for International Relations Marketing Department
8.1. Brand awareness and perception		
8.2. Society's readiness to cooperate		

9. Achievements and evaluation of results	Dynamics of the number of students Number of foreign students and the countries they represent Graduate employment University ranking Number of projects led/participated by academic staff. Number of internationally recognized publications	Vice-rector for Studies Vice-rector for International Relations Vice-rector for Science
9.1. Achievements		
9.2. Main results		

Link to ISMA Quality Policy documents:
https://www.isma.lv/images/FILES/ISMA_Kvalitates_politika_2020_EN.pdf

1.4. Fill in the table on the compliance of the internal quality assurance system of the higher education institution/ college with the provisions of Section 5, Paragraph 2(1) of the Law on Higher Education Institutions by providing a justification for the given statement. In addition, it is also possible to refer to the respective chapter of the Self-Assessment Report, where the provided information serves as justification.

1.	The higher education institution/ college has established a policy and procedures for assuring the quality of higher education.	QMS is implemented and operates. QMS manual, which can be consulted without restrictions by ISMA personnel as well as by cooperation partners (at the discretion of ISMA management) on the ISMA intranet (internal information network). ISMA Quality Assurance Policy is approved by the decision of ISMA Senate meeting of April 25, 2019, protocol no. 1-19. https://www.isma.lv/images/FILES/ISMA_Kvalitates_politika_2020_EN.pdf
2.	A mechanism for the creation and internal approval of the study programmes of the higher education institution/ college, as well as the supervision of their performance and periodic inspection thereof, has been developed.	A process has been developed and included in the framework of the ISMA QMS: Ensuring the basic study process, as well as specific structural units/officials responsible for the process – ISMA Vice-rector for Studies, ISMA Vice-Rector of Academic Work, ISMA Department of Studies, ISMA Departments, and ISMA Training Centre. All documents that apply only to ISMA students and staff are located on the ISMA intranet "Internal documents" - https://beta.moodle.isma.lv/course/view.php?id=816

3.	The criteria, conditions, and procedures for the evaluation of students' results, which enable reassurance of the achievement of the intended learning outcomes, have been developed and made public.	A process has been developed and included in the framework of the ISMA QMS: Ensuring the basic study process, as well as specific structural units/officials responsible for the process – ISMA Vice-rector for Studies, ISMA Vice-Rector of Academic Work, ISMA Department of Studies, ISMA Departments, and ISMA Training Centre. ISMA personnel, including students, have been introduced to ISMA's internal regulatory enactments, which regulate the criteria for evaluating student achievements, such as ISMA's Regulations on Studies, ISMA Procedures for the Organisation of Testing, the procedure for academic recognition of study courses at ISMA, ISMA Traineeship Regulations, etc. "Internal documents" - https://beta.moodle.isma.lv/course/view.php?id=816
4.	Internal procedures and mechanisms for assuring the qualifications of the academic staff and the work quality have been developed.	A process has been developed and included in the ISMA QMS framework: Human resources management and development, as well as certain structural units / officials responsible for the process have been appointed - ISMA Vice-Rector for Administrative Work, ISMA Personnel Department, and ISMA Departments. "Internal documents" - https://beta.moodle.isma.lv/course/view.php?id=816
5.	The higher education institution/ college ensures the collection and analysis of the information on the study achievements of the students, employment of the graduates, satisfaction of the students with the study programme, efficiency of the work of the academic staff, the study funds available, and the disbursements thereof, as well as the key performance indicators of the higher education institution/ college.	ISMA has created a database in which aggregated information about students' progress is being placed. ISMA regularly conducts student surveys https://beta.moodle.isma.lv/mod/feedback/view.php?id=15307, in which the satisfaction of students with the study programme, the organization of the study process, and the performance of the academic staff engaged in the study program is ascertained. All information is regularly collected and entered into the database. ISMA regularly collects information on the employment of graduates, compiles and stores it in the database.
6.	The higher education institution/ college shall ensure continuous improvement, development, and efficient performance of the study field whilst implementing their quality assurance systems.	A process has been developed and included in the framework of the ISMA QMS: Ensuring the basic study processes, as well as specific structural units/officials responsible for the process have been appointed – ISMA Vice-rector of Studies, ISMA Vice-rector for Academic Work, ISMA Study Department, ISMA Departments, and ISMA Training Centre. ISMA Study Directions Council is established and operates; its activity is regulated by the Regulations on ISMA Study Directions Council. https://www.isma.lv/images/FILES/ISMA_St_virzienu_padomes_noliktums_EN.pdf

2.1. Management of the Study Field

2.1.1. Aims of the study field and their compliance with the scope of activities of the higher education institution/ college, the strategic development fields, as well as the development needs of the society and the national economy. The assessment of the interrelation of the study field and the study programmes included in it.

ISMA University of Applied Sciences Development Strategy for 2018-2023 (ISMA Strategy) https://www.isma.lv/images/2024/ISMA_strategija_2024_2030_ENG_new.pdf is worked out based on the evaluation of the results of ISMA work and development, as well as on the topical challenges of the educational and scientific environment of the EU and the Republic of Latvia. ISMA Strategy is founded on the recognition that in the 21st century higher education is one of the significant resources, which at the same time is subjected to radical change focused on the finding of relevant national and local solutions in the context of global challenges, ensuring the competitiveness of Latvia and human capital value factor.

The aims and objectives of the Study Direction and the programmes included in it are set in compliance with the priorities stated in the Sustainable Development Strategy of Latvia until 2030 (Latvia 2030):

1. Long-term investments in human capital. – Elimination of social and economic inequality, availability of necessary resources, especially qualitative education, as an essential prerequisite for person's life and employment opportunities.
2. Change of paradigm in education. – Qualitative and accessible lifelong education, improved general level of technological competence, integration of distance education elements in the learning process.
3. Innovative and eco-efficient economy. - A business-friendly environment, support for the generation and commercialization of new ideas, knowledge transfer and participation of business in research.
4. Innovative government and public participation. - The ability of the Latvian population to participate in public processes, envisaging strengthening the necessary knowledge and skills within the framework of the acquired education.

and the National Development Plan of Latvia for 2021-2027 (https://www.mk.gov.lv/en/media/15165/download?attachment) **priority Knowledge and Skills for Personal Development and Growth** direction *Science for the development of society, the economy and security* and *Quality, accessible and inclusive education,* **priority Business Competitiveness and Material Well-being** direction *Productivity, innovation, and export,* as well as **priority Quality Living Environment and Regional Development** direction *Technological environment and services.*

The aim of the study direction "Information Technology, Computer Technology, Electronics, Telecommunication, Computer Control and Computer Science" is to ensure the preparation of competent, self-improvement-oriented and innovative-thinking professionals in the field of computer science and informatics who are competitive in the global market.

Taking into account the aforementioned strategic documents, as well as the nature of the professions defined in the Qualification Structure of the electronic and optical equipment production, information and communication technology industry, the aims and learning outcomes of the study programme have been formulated.

Aim of the study programme “Information Systems” is to prepare highly qualified programming engineers who are able to develop software according to the terms of functionality, quality and resource intensity, contributing to the efficient operation of the company, and creative information systems that ensure their competitiveness in the global labour market.

Graduates of the bachelor study program "Information systems" can improve by continuing their studies in the master's program "Computer systems".

Aim of the study programme “Computer Systems”: to prepare innovative and systemically thinking, lifelong learning-oriented system analysts who are competitive in the global labour market, who are oriented in the field of computer science, understand the basic principles of business processes analysis and IT system functionality, are able to plan and implement IT solutions, coordinate and supervise team work demonstrating leadership and cooperation skills.

2.1.2. SWOT analysis of the study field with regard to the set aims by providing explanations on how the higher education institution/ college expects to eliminate/ improve weaknesses, prevent threats, and avail themselves of the given opportunities, etc. The assessment of the plan for the development of the study field for the next six years and the procedure of the elaboration thereof. In case there is no development plan elaborated or the aims/ objectives are set for a shorter period of time, information on the elaboration of the plan for the development of the study field for the next assessment period shall be provided.

S · The study programmes of the study direction programs are modern and regularly updated. · Cooperation with employers takes place to ensure traineeship placement and final papers development. · Research skills are being developed within the study process. · Qualified and professional academic staff with significant experience of practical and pedagogical work participate in the realization of the study programmes of the study direction, and professionals from enterprises are regularly invited.	W · Inactive use of the opportunities of e-learning environment for the use of visual materials, communication and mid-term examinations in full-time studies. · Insufficient number of guest lecturers from foreign universities. · Different levels of students’ pre-knowledge of mathematics and English. · Students are not sufficiently motivated to engage in scientific research beyond the compulsory requirements of the study programme.

O	T
· Professional Bachelor study programmes in the IT field are in demand in the foreign (e.g. Uzbekistan) market. · A large number of applicants from developing countries, who are willing to receive higher education at European level. · The industry specialists are in demand in the labour market. · Extensive opportunities for cooperation with employers and the public.	· Instability of higher education policy. · Relatively big number of educational institutions according to demand which are offering similar education in Latvia. · Complex demographic situation in the country. · Political instability in international markets.

All parties involved in the management of the study direction participated in the elaboration of the plan for the development of the study direction (Annex 2.1.1). The plan has been analysed and accepted by the Study Direction Council on August 2023. The detailed plan of the elimination of weaknesses, using ISMA's strengths and opportunities created by the external environment, is included in the plan for the development of the study direction and is attached in the Annex 2.1.1. The plan emphasises the improvement of electronic environment and digitisation of study courses, as well as the organisation of lectures read by foreign guest lecturers at least once a semester by attracting the existing foreign cooperation partners within the study direction and lecturers of future joint study programmes, as well as by attracting new cooperation partners. One of the most important development opportunities of the study direction is popularity of the study programmes on IT in Kazakhstan, Uzbekistan and in other post-Soviet countries.

Directions of the development plan:

- to organise guest lectures read by the industry experts, to involve the industry experts in the development of study courses and traineeship assignments;
- to supplement the academic staff with practitioners with the aim to provide study excursions to companies within the framework of profiling study courses;
- to develop and regularly improve the material and technical base, especially at ISMA Fergana Branch;
- continue digitizing study courses;
- to further promote cooperation with partners
- to involve entrepreneurs in the initiation, development and the assessment of practical value of final works;
- to foster the increase of professional employment of graduates;
- to promote cooperation with other higher education institutions, including foreign ones.

2.1.3. The structure of the management of the study field and the relevant study programmes, and the analysis and assessment of the efficiency thereof, including the assessment of the role of the head of the study field and the heads of the study programmes, their responsibilities, and the cooperation with other heads of the study programmes, as well as the assessment of the support by the administrative and technical staff of the higher education institution/ college provided within the study field.

Study direction management is considered effective due to the simplicity of the management structure. The Head of Study direction organizes a monthly meeting with the constant participation of the Heads of departments and the Directors of the study programs. Other stakeholders, such as Heads of the Study Department and Career Centre, Vice-Rector for Studies, Vice-Rector for Research, students, employers, IT manager, etc., are invited to discuss specific issues. The work done in the previous period, challenges and intentions are discussed and tasks for the next week or longer are defined at these meetings.

Main responsibilities of the Head of the Study Direction:

- to analyse the efficiency of the study programmes, to initiate the optimisation of study programmes and the development of new study programmes;
- to organise the cooperation of the directors of the study programmes of the study direction and assess the efficiency of the work of the directors of study programmes;
- to manage and plan the work of the Study Direction Council;
- to organise the development and improvement of new study courses at the meeting of Study Direction Council;
- to organise the development and updating of traineeship assignments with the Directors of study programmes and traineeship placement enterprises, and their approval at the meetings of Study Direction Council;
- to develop the Self-Assessment Report of the Study Direction and represent the study direction within the process of assessment. Study Direction;
- to coordinate the work of the academic staff involved in the study direction;
- to recommend the members of the state examination commission;
- to promote cooperation with graduates and employers;
- to promote cooperation with Latvian and foreign higher education institutions to improve the study direction.

Main responsibilities of the Directors of study programmes:

- to ensure the preparation, implementation and development of the study programme;
- to ensure the implementation of changes in the study programme, their coordination with employers, and preparation for the approval by ISMA Senate;
- to ensure the preparation of the necessary documentation for the licencing and accreditation of the study programme preparing annual self-evaluation reports;
- to cooperate with employers and, together with the Career Centre, to ensure the traineeship placements necessary for the implementation of the study programme;
- to review applications for entry into later stages of studies, to compare previously acquired study courses and the amount of credit points with the relevant part of the study programme and to specify which of the previously acquired study courses can be recognised and which of the study courses require additional examinations; to prepare recommendations on the opportunities to continue studies in a particular semester;

- to plan, organise and control the implementation of the study programme following the organisational plan complying with the learning outcomes, aims and objectives of the study programme; to process the performance indicators of the study programme.

Co-operation with other Directors of study programmes is realized by developing a joint request to departments for the development, processing and implementation of similar study courses under the supervision of the Director of study direction.

The meeting of the Study Direction Council takes place not less than twice an academic year. At the meetings the topical issues of the study direction and study programmes are discussed, students and employers' viewpoints are listened to, the prospective challenges are assessed, as well as various documents are discussed and approved, such as the introduction of new study courses, traineeship assignments, etc.

Management of the study direction is directly linked to cooperation not only with academic staff but also with administrative, support and technical staff. The decisions of the meeting of the Study Direction management, which require financial support and/or technical solutions, are coordinated with the Vice-Rector for Studies and approved by the Rector. If the Rector or Vice-rector for Studies does not support any of the decisions of the Study Direction management meetings, then these decisions are reviewed and postponed or modified at the next meeting of the Study Direction management. The IT department ensures the improvement of the Moodle environment and other information systems, installation and maintenance of computer equipment, installation of the necessary software and technical support.
Duties of the study and teaching staff support teams include organisation and maintenance of record-keeping of organisational units, support in the process of enrolment of students, preparation of timetables of classes, informing of students on changes in the study process, as well as serving of visitors and students and resolution of problems. Team members may provide consultations and information on matters related to the study process, study opportunities and continuing education. These specialists summarise necessary data, analyse them, as well as prepare necessary reports, they perform other duties at the assignment of the head of the organisational unit.

2.1.4. Description and assessment of the requirements and the system for the admission of students by specifying, inter alia, the regulatory framework of the admission procedures and requirements. The assessment of options for the students to have their study period, professional experience, and the previously acquired formal and non-formal education recognised within the study field by providing specific examples of the application of these procedures.

The rights to study at ISMA University of Applied Sciences has each citizen of Latvia, non-citizen of Latvia, a citizen of the European Union, a citizen of the European Economic Area, or a citizen of the Swiss Confederation and a permanent resident of the European Community as well as a person who has a valid residence permit.

Foreign citizens who do not have a permanent residence permit have the right to study at ISMA in compliance with section 83 of the Law on Institutions of Higher Education. To study at ISMA a person who is applying for submission to a study programme shall present a document certifying a previously acquired education which is recognised in Latvia and meets the requirements of the

study programme, as well as a document certifying the knowledge of the English language.

Applications from foreigners (especially from non-EU countries) are carefully considered by ISMA. A mechanism for the admission of foreign students has been developed (see Annex 1.4.).

Admission requirements to study programmes for next academic are developed by the Vice-Rector for Studies and approved by the Senate by November 1st of current academic year in compliance with the Cabinet Regulation No. 846, adopted 10 October, 2006 "Regulations Regarding the Requirements, Criteria and Procedures for Admission to Study Programmes". Admission requirements are published on ISMA web-page

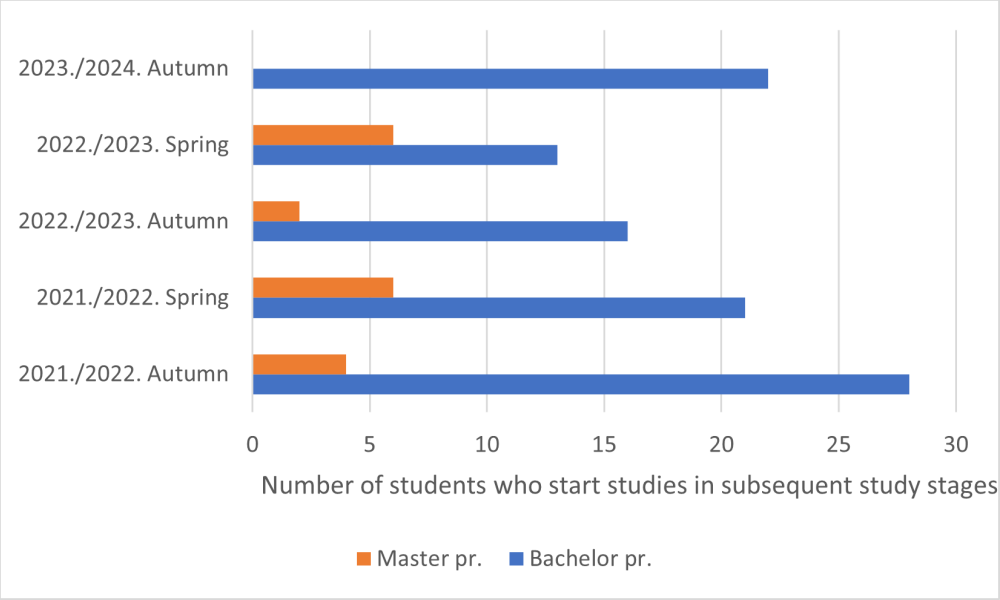
https://www.isma.lv/images/2024/documents_en/ISMA_Uznemsanas_noteikumi_2023-2024_ENG.pdf

Starting studies at subsequent stages of studies is possible according to Regulations on Studies (https://www.isma.lv/images/FILES/ISMA_Studiju_nolikums_2020_EN.pdf) if the mandatory examinations on the previous stages of studies are passed at another higher education institution.

In this case the Director of study programme examines the application for admission to subsequent stages of studies, compares the previously acquired study courses and the amount of CPs with the corresponding part of the respective study programme and states which study courses from the previously acquired ones can be recognised and which study courses shall be passed in addition.

Director of study programme also prepares recommendations on the opportunities of continuing studies in a specific semester. The protocol of comparison is approved by the Vice-Rector for Studies, after which the Study Department in cooperation with the student develops an individual study plan.

Every semester there are students who start studies in subsequent study stages:



Studying at subsequent stages of studies is also possible if an applicant's previously acquired knowledge, skills and competences are recognised in compliance with the procedures set in the Law on Institutions of Higher Education p.p. 59^2 and 59^3 and Cabinet Regulations Nr. 505 *Ārpus formālās izglītības apgūto vai profesionālajā pieredzē iegūto kompetenču un iepriekšējā izglītībā sasniegtu studiju rezultātu atzīšanas noteikumi (Rules for the recognition of competences acquired outside formal education or professional experience and of learning outcomes achieved in prior education)*,from August 14, 2018.

ISMA has developed the "Regulations on recognition of knowledge, skills and competences acquired outside of formal education or acquired through professional experience"

(https://www.isma.lv/images/2024/documents_en/Nolikums_par_rpus_formls_izgltbas_rezulttu_atzanu_2023_lat_ENG.pdf), but no submissions for such recognition have been received so far.

The admission of foreigners to ISMA in Riga and the Fergana Branch takes place in accordance with Article 83 of the Law on Institutions of Higher Education. The admission of foreigners to ISMA is organized by ISMA International Relations Department and ISMA Admission Board.

Foreigners are admitted based on the following criteria:

- ISMA IRD has received the expert recognition of the Academic Information Centre in compliance with Section 85 of the Law on Institutions of Higher Education, and all the requirements of ISMA University Admission Regulations in relation to the particular study programme are met.
- Foreign applicants shall submit a document certifying their knowledge of English. Language skills shall be not lower than B2 level according to ECP. The foreign applicants who acquired secondary education in English do not have to submit the documents certifying their knowledge of the study programme language.

Registering for studies an applicant shall fill in and send to ISMA the application form for foreign students, copy of passport, copies of the education documents which confirm the required previous education. To finalise the admission process IRD submits a foreign applicant's documents to ISMA Admission Board for matriculation.

2.1.5. Assessment of the methods and procedures for the evaluation of students' achievements, as well as the principles of their selection and the analysis of the compliance of the evaluation methods and procedures with the aims of the study programmes and the needs of the students.

Implementation of the study process is based on the principles of student-centred education. For example, the study process ensures a variety of student needs through the development of different learning forms and pathways. The academic staff is encouraged to regularly evaluate and improve teaching methods and forms, and receive support from the higher education institution to develop their skills in this area. Studies are based on student autonomy, while providing the guidance and support of the academic staff - the description of each study course includes the amount and content of student's self-study, as well as the methods for its evaluation. Students receive explanation of the assessment and, if necessary, advice on how to improve their work. If a student is dissatisfied with the assessment, he or she may appeal.

The basic principles of the assessment of study programmes comply with the requirements of the Education Law, which defines the state education standard as the document which, according to the degree and type of education, defines the main aims and objectives of education programs. The state education standards are defined by the Cabinet of Ministers.

The assessment of students' achievements is performed in compliance with the ISMA *Procedures for the organisation of testing* approved by ISMA Senate on December 19, 2019 https://beta.moodle.isma.lv/course/view.php?id=816

The kinds of testing are set as mid-term tests as study courses final testing.

The kinds of mid-term test are the following:

- control test;
- test;
- self-study work;
- practical work;
- report;
- seminar work
- discussions;
- group work;
- project;
- case study;
- presentation;
- other kind of work according to the specific study course.

The number and kind of mid-term tests is set in the study course description, it is defined by the lecturer of the study course and approved at the meeting of the corresponding Department.

Study course final testing forms are the following:

- examination - the form of testing knowledge, skills and competences which is passed after having mastered a study course or its significant stage. Examination is evaluated on a 10-point grading system.
- test with evaluation - the form of testing knowledge, skills and competences; test is passed after having mastered a study course or its significant stage. Test is organised in the same way as examination and is evaluated on a 10-point grading system.
- test - the form of testing knowledge, skills and competences; test is passed after having mastered a study course or its significant stage. Test is organised in the same way as examination. The evaluation of test is – “passed” or “failed”, which is recorded in the electronic records as “i” (passed) or “ni” (failed).

Examinations and tests may be organised in various ways – in written, oral, computerised, or combined forms (e.g. – written and oral). The evaluation of mastering a study course is formed of the examination/test results and on the base of the results demonstrated during the study course mastering.

Study course testing, its form and ways are set in the descriptions of study courses. Lecturer informs students about the study course testing form and ways in the beginning of the study course mastering. Students shall be informed about the supplementary learning aids which are allowed to use.

The procedure of State examinations is approved by the meeting of Study Direction Council based on the recommendations of the Director of the study programme, who ensures the availability of the information about the aforementioned procedure to students.

2.1.6. Description and assessment of the academic integrity principles, the mechanisms for compliance with these principles, and the way in which the stakeholders are informed. Specify the plagiarism detection tools used by providing examples of the use of these tools and mechanisms.

Students have access to the document of ISMA internal regulations - *ISMA University of Applied Sciences Procedures for the organisation of testing*, which defines the kinds of violation of students' academic integrity and punitive measures.

Students and employees can get acquainted with this document and other internal documents regulating the study process, on the e-studies system https://beta.moodle.isma.lv/course/view.php?id=816

Lecturers also pay increased attention to the observance of the principles of academic honesty and, when starting their work, inform students about the principles of study course assessment, including the consequences of plagiarism.

For example, in case of a student's dishonesty during testing or examination incompliance with the examination regulations, the use of unauthorized aids or assistance of other persons, the lecturer has the right to expel the student from the examination. Before expelling a student from the auditorium where testing takes place the lecturer shall draw up an act in free form stating the fact of unauthorised activity. The act should contain at least two parts: date, student's name and surname, year of studies, the description of the incident, lecturer's signature and full name. The act should be also signed by the student and other representatives of ISMA personnel, who are the witnesses of the incident. The lecturer informs the Study Department about the incident and submits the act to be included in the student's personal file. In this case, the examination/test can be retaken not earlier than after the examination session for a fee (the fee is determined by the order of the Rector).

ISMA has joined the UL Unified Computerized Plagiarism Control Systems in order to compare ISMA students' papers or the thematic collections of the works of other universities / colleges.

The lecturer to whom the research paper is submitted within the framework of the study course and the supervisor of the final paper (Qualification paper, Bachelor's paper, Master's thesis, or doctoral thesis) are obliged to perform electronic examination of the submitted material (for example, using plag.lv). If the electronic examination for academic integrity is found to contain signs of plagiarism, the supervisor shall report to the Director of the study programme on the same day.

The cases are presented below:

1. If the principles of academic integrity are violated by a student in the research work within the study course, the student has to choose another topic and work on it. For example, such cases took place mastering the study course "Project Management". Asoc.prof. Ivars Linde regularly makes student choose new topics and submit another works.
2. If the principles of academic integrity are violated in the final paper/thesis, the Director of the study programme together with the supervisor of the final paper/thesis shall, within two days, make a written statement that the work contains plagiarism, which shall be submitted to the Vice Rector for Studies. Upon receiving of the statement, the Vice Rector for Studies invites the student whose work violates the principles of academic integrity to be familiarised with the statement and to provide a written explanation. Upon receipt of the student's explanation, the Vice-Rector for Studies shall convene a commission and jointly decide on the

admission or dismissal of the student from the defence of the final thesis. Such cases have not happened so far, as students submit their theses to supervisors in chapters and the potential risk of plagiarism is thereby reduced.

2.2. Efficiency of the Internal Quality Assurance System

2.2.1. Assessment of the efficiency of the internal quality assurance system within the study field by specifying the measures undertaken to achieve the aims and outcomes of the study programmes and to ensure continuous improvement, development, and efficient performance of the study field and the relevant study programmes.

The study programmes have been elaborated and updated based on the laws and regulations, instructions of the accreditation experts during the previous assessment of the study direction, results of student and graduate surveys, results of final theses, topical scientific research, including the research conducted by ISMA academic staff, recommendations of employers expressed in the references from traineeship placements, meetings at conferences, consulting on the development of Theses, reviewing of Theses, and participation in the state examination commissions (Theses defence). Such a comprehensive and diverse approach to the improvement of the study content and process ensures that the content of the study programme corresponds to the requirements of the labour market and the development trends of the relevant industry.

Internal quality on the level of Study Direction is ensured:

- conducting a survey of the students of the study programme on the quality of work of the academic staff and evaluation of the realization of the study programme. Each participant receives the results of the survey individually, the results in a summarized form are discussed at the meeting of the respective Study Direction council;
- analyzing the annual surveys of employers after defending their traineeships, as well as finding out the opinion on the fulfillment of traineeship tasks from the employers who participated in the traineeship defense;
- study course programmes, methodological materials, study literature and proposed study paper (research and final paper) topics are reviewed and updated once in an academic year;
- courses and seminars on the latest teaching and pedagogical methods are organized and offered to the academic staff, and attending further education courses is encouraged;
- the utility department and IT department staff continuously monitor the compliance of the premises and technical equipment to the quality requirements.

During the study year, the internal self-evaluation and quality improvement system operate continuously; at the end of the study year, the Study Direction, study programmes and the weaknesses and strengths, changes, development opportunities and plans of the HEI are discussed at the general assembly.

2.2.2. Analysis and assessment of the system and the procedures for the development and review of the study programmes by providing specific examples of the review of the study

programmes, the aims, and regularity, as well as the stakeholders and their responsibilities. If, during the reporting period, new study programmes have been developed within the study field, describe the procedures of their development (including the process of the approval of study programmes).

The process of designing and preparing new study programmes for licensing, the implementation and monitoring of the study programme, as well as its updating is regulated by the ISMA Quality Management System (QMS) procedure "Study Programmes". In the study direction council, discussing with employers about current events in the industry and the labour market, market niches are analysed and opportunities for expanding the study direction are sought.

The study programmes have been elaborated and updated based on the laws and regulations (the Law on Higher Education Institutions, education standard and Occupational Standard), instructions of the accreditation experts during the previous assessment of the study direction, results of student and graduate surveys, results of final theses, topical scientific research, including the research conducted by ISMA academic staff, recommendations of employers expressed in the references from traineeship placements, meetings at conferences, consulting on the development of final Theses, reviewing of Theses, and participation in the state examination commissions (Bachelor's or Master's Theses defence). Such a comprehensive and diverse approach to the improvement of the study content and process ensures that the content of the study programme corresponds to the requirements of the labour market and the development trends of the relevant industry.

In the development and implementation of the study programme, a logical sequence is followed: in compliance with the requirements defined in the Occupational Standard, labour market demand and the overall aim of the field of study, the aim of the programme and the tasks resulting from it are formulated. The content of the programme (distribution of the study courses) is based on the achievement of the aim and learning outcomes and the criteria defined in the educational standard; accordingly, the content of study courses is designed to implement the acquisition of knowledge, skills, and competences defined in the Occupational Standard, thus ensuring the implementation of the aim of the study programme.

The content of the study courses is discussed and approved cooperatively by the teaching staff involved in the study programme and the members of the Study Direction Council, thus ensuring cross-curricular coherence and harmonisation of common requirements for the achievement of learning outcomes, as well as eliminating unnecessary duplication of content.

According to ISMA internal regulations, a Council of respective study direction supervises the topicality of the study programme by making corrections to the study plan, the content of the study courses, traineeship assignments, etc. when necessary. The descriptions of the study courses are updated and reviewed in the respective departments at least once a year, usually before the beginning of academic year or more frequently if necessary. ISMA Senate approves the study plan at least once a year.

In the reporting period the most significant changes were made in accordance with the Senate Decision No 1-22 of 18 January 2022 to reduce the amount of the Master's study programme in order to ensure its relevance to the demand and trends of the labour market, thereby increasing the competitiveness of the study programme.

So as to improve the study programme, several study courses were merged. Important study courses were introduced in accordance with the requirements of the labour market and current

trends in the industry, mainly related to data processing, information and data security, machine learning. In order to offer students in-depth specialisation in the field of their interest, the study courses are divided into blocks in the elective courses section, which provides an opportunity to specialize in a specific field. This gives the opportunity to acquire exactly those skills and competences during the final stage of the studies during qualification practice and master's thesis development, which will allow you to find and prove your place in the labour market.

2.2.3. Description of the procedures and/or systems according to which the students are expected to submit complaints and proposals (except for the surveys to be conducted among the students). Specify whether and how the students have access to the information on the possibilities to submit complaints and proposals and how the outcomes of the examination of the complaints and proposals and the improvements of the study field and the relevant study programmes are communicated by providing the respective examples.

The submission of complaints and proposals from students and employees, as well as the observed errors, undesirable situations and/or imperfections that are found, are regulated by the ISMA QMS procedure “Nonconformance Management” https://beta.moodle.isma.lv/course/view.php?id=816, which also includes the scheme of corrective/preventive measures from the moment of obtaining information to the analysis of the reasons.

Information on how to submit complaints and proposals to a structural unit of ISMA according to its area of activity is provided to the students by the director of the study programme during the introductory lecture, which is available to all ISMA students and employees in writing in the internal e-environment.

If the complainant has provided their e-mail address, then regardless of how the complaint is submitted (electronically or in paper form), the complainant will be notified electronically within one day of the corrective/preventive measures being taken.

If the complainant wishes to remain anonymous, they leave their information to the student self-government body, in which case the reply is also sent to the student self-government body. For example, a complaint from the student self-government body was received by the Study Department that a lecturer regularly delayed the start of the lecture by 5-10 minutes. On the same day, the head of the responsible department met with the lecturer and discussed the situation. An attendant came to the next lecture and found that although the teaching staff had arrived in time, he had not established contact with the group. After the semester, almost all students expressed a negative opinion about the subject as a whole. The teaching staff was offered to attend communication psychology seminars, but he refused. ISMA did not continue working with this visiting docent in the next semester.

2.2.4. Provide information on the mechanism for collecting the statistical data, as developed by the higher education institution/ college. Specify the type of data to be collected, the regularity of collection, and the way the information is used to improve the study field. Describe the mechanism for obtaining and providing feedback, including with regard to the work with the students, graduates, and employers.

HEI regularly obtains, processes and analyzes the following data which applies to the study programmes:

- data on students (including immatriculation, exmatriculation, results of the study programme acquisition, mobility);
- data on teaching staff (number of hours, number and evaluation of supervised works, scientific and practical activity, mobility);
- survey results (opinions of students, graduates, employers);
- expenditure on the improvement of the material and technical base.

Following the recommendations “Mandatory questions to be included in the survey for students, employers and graduates” of the Study Accreditation Commission from April 27, 2016, in 2016 ISMA developed single surveys for students, employers and graduates for all study programmes, which allow to assess not just the specific study programme in question, but the activity of the HEI as a whole. The survey takes place every year, so it is possible to track and evaluate the dynamics of the opinions of the involved parties and determine where and what changes should be introduced in the study process.

For summary of results and feedback, see in Annex 2.2.1.

2.2.5. Specify the websites (e.g., the homepage) on which the information on the study field and the relevant study programmes is published (in all languages in which the study programmes are implemented) by indicating the persons responsible for the compliance of the information available on the website with the information published in the official registers (State Education Information System (VIIS), E-platform).

Website: www.isma.lv

Responsible: Antoņina Djakona - Vice-Rector for Development and Innovation

Main goals:

1. Content management: posting, editing and deleting content on the site, including articles, images and videos.

Types of content: information from the Directors of study programmes, Vice-rectors, departments, international cooperation partners, academic staff, Student Council, information from ISMA Fergana Branch.

Internal documents, information about the study programmes, and the procedure for admission to ISMA are posted in Latvian and English.

The website contains information about ongoing conferences, publications, and traineeships. For Latvian and foreign students information is posted on the procedure for completing traineeships, receiving scholarships, as well as the work of the Business Incubator, library, and Student Council.

The website contains information about ISMA partners and graduates.

The current news section is active.

2. Update and support:

Regular update of software, plugins and site themes to ensure security and functionality.

3. Security:

Monitoring and prevention of attacks, regular data backups, setting up security systems.

4. Technical support:

Solving technical problems of the staff, answering queries related to the functionality of the site.

5. Analytics and monitoring:

Monitoring website traffic, analysing user behaviour, using analytics tools.

6. Performance optimisation:

Improvement of the site loading speed, optimisation of resources to ensure efficient operation.

7. Development of a growth strategy:

Planning and implementation of activities to improve the site, attracting of new users and increasing of the satisfaction of current ones.

8. Work with advertising and marketing companies:

Advertising placement, monitoring of the effectiveness of marketing strategies.

9. Compliance with laws:

Content management in compliance with the laws and regulations related to the Internet resources.

E-platform (MOODLE)

Responsible: Dmitrijs Skorodihins - IT Engineer

Adapts the platform to the needs of the university, monitors the quality of the platform. Places materials on the study courses and monitors their use by students. From the educational part, he receives information about students who need to be connected to the MOODLE system and connects them to specific groups and to certain study courses. Since November 2023 the BigBlueButton platform has been connected to MOODLE for conducting lectures and online consultations, which replaced ZOOM.

He also conducts seminars for lecturers on the work on MOODLE platform.

VIIS State Education Information System

Responsibles:

Mihails Kovaļevskis - Data protection officer

Data import into VIIS (State Education Information System) student and graduate register

Jevfrosija Kovaļenko - Head of personnel department

Data import into VIIS (State Education Information System) academic personnel register

Oksana Miņailo - Head of student service

Tatsiana Saifarova - International Relations Coordinator

Jūlija Galkina - International Relations Coordinator

Data entry in VIIS (State Education Information System) register of educational documents issued abroad.

2.3. Resources and Provision of the Study Field

2.3.1. Provide information on the system developed by the higher education institution/ college for determining and redistribution of the financial resources required for the implementation of the study field and the relevant study programmes. Provide data on the available funding for the scientific research and/or artistic creation activities, its sources and its use for the development of the study field.

ISMA is a private higher education institution founded by a legal entity; therefore the tuition fee paid by students is the main source of financing for the study process.

Permanent sources of own income at the HEI are the following:

- income from tuition fee (75%);
- income from training courses (6%);
- income from contract research (5%);
- income from other research activities (11%);
- income from rent, utilities and other services (3%).

In its turn, the tuition fee is covered from the resources of natural and / or legal persons, it consists of: personal resources of a student, funds of a student's employer, study loan with state guarantee, commercial credit, and funds of sponsors.

ISMA is a private HEI and does not receive state funding for its activities. Funding for ISMA study programmes is based on the obtained tuition fee, but it is not divided by fields of study or branches.

. The additional promotional assets include project funding, including transnational and mobility funding under the Erasmus + programme. Similarly, ISMA academic staff and Master students perform research, which is commissioned by the private business sector, and provide consultations, teach within non-formal education, including at the international level, ISMA Career Centre offers various study courses outside formal studies.

When planning the distribution of funding for a specific study direction and the study programmes included in it, ISMA Board considers certain parameters:

- Ensuring administrative-economic activity;
- Ensuring the functionality of the premises being used;
- Provision of the study process with teaching aids;
- Ensuring the social life of the HEI (student events, student involvement, freshman ball, traineeship conferences, ISMA festival, etc.);

- Social benefits for students (budget places, etc.);
- Renewal and supplementation of teaching equipment (computer software, etc.);
- Promotional activities (promotion of study programmes, including in social networks, organisation of Olympiads, laboratory days, etc.).

The necessary funds are planned by the Financial Department in accordance with the study directions and study programmes to ensure the operations of the HEI, and the financial support is allocated to the direction in accordance with the order of the Rector.

Analysing the distribution approach to calculations and planning, it can be said that a mixed approach is used when savings are planned based on the planned income according to the number of students and the predicted number of enrolled freshmen before enrolment. Later, these data are compared with the actual number of students in the study programme and the allocated funding for the study direction with the aim to introduce corrections. Taking into account the strategic development plans, provisions are made, which consist of 10% of the total revenue.

27-32% of the funding is allocated for salaries and research, including 5-6% for the purchase of library resources and databases.

Project	**EUR**
Implementation of the active marketing complex with the aim of increasing the competitiveness of Latvian private universities	7560
Development of remote sensing technology for modelling the climate impact of stratospheric and meteorite aerosols	6010
Analysis and evaluation of university rankings	5010
The bioeconomy model as a basis for the formation of sustainable development and improvement of the quality of life	8500
Electronic smart services and marketing platform: new values for the traditional market	6160
Information-analytical model of ecological risk management systems on the example of transport infrastructure	6160
Innovations as the main challenge in the field of health tourism in Latvia	7500
Integrated smart service platform for drone users	6010
Field emission cathode: perspectives and models for the development of new materials and structures	8500
Decision support system for generator placement optimization based on geospatial data	8500
MODX,RU portal development	3600

Main directions of modern university development strategies	6010
Self-adjusting algorithms for evaluating of organization's operational capabilities	6050
Improving system security: improving self-adaptive algorithms	6630
Tourism for all: accessible tourism in Latvia	6170
Control algorithms maintenance	5190
Control system self-regulating algorithms	15140
Total:	118700

2.3.2. Provide information on the infrastructure and the material and technical provisions required for the implementation of the study field and the relevant study programmes. Specify whether the required provision is available to the higher education institution/ college, available to the students, and the teaching staff.

Study process is implemented in Riga and planned at ISMA Fergana Branch in Uzbekistan.

The library resources are supplemented regularly, well-equipped spaces and technical means necessary for the organisation of the study process are ensured.

In 2021 ISMA has signed a cooperation agreement with ATTA Centre - the largest conference centre in Latvia. Due to the pandemic, the installation in the new premises had to be suspended. ISMA students in Riga started the 2023/2024 academic year in the new premises building 5 at Lomonosova Street, 1. It is also planned to continue to use part of the existing auditoriums and administrative premises in the existing premises - buildings 6 and 7 at Lomonosova Street, 1.

In 2021 isma.lv website was renewed providing more convenient and faster communication with students and those who just want to join ISMA. ISMA students also have the opportunity to receive internal information, such as academic staff contacts or the lecture schedule for their group by logging in to the portal my.isma.lv.

At Fergana Branch lectures will take place in the renovated historic building - former Fergana Officers' House. This building has been allocated by Fergana City Council for ISMA Fergana Branch, and the repairs have been carried out by ISMA itself. The building has been completely renovated, it is equipped with 11 auditoriums, including 2 computer classes with 21 computer.

In order to provide students with a suitable environment for achieving high study results, appropriate lecture rooms are used for different lecture, for example, in several auditoriums there are easily movable chairs with attached small tables for notes, thus, if necessary, it is easy to organize pair work, larger or smaller groups.

In addition to the learning materials listed in the library at the Fergana Branch, students have the opportunity to use the resources of the Fergana University, thanks to the Memorandum of Understanding signed in 2017 for an indefinite period.

On November 15, 2019, a cooperation agreement was concluded between the ISMA Library and the Information Resource Centre of Fergana State University. Thanks to these agreements, ISMA students make unlimited use of the resources of the Information Centre. It should be noted that the staff of the Information Centre purchased a number of modern books in English at the request of ISMA.

Also on November 15, 2019 a co-operation agreement was signed between ISMA Fergana Branch and the Fergana Regional Information Library Centre named after Ahmad Fargoni, as a result of which the local library also purchases a number of current books in the fields of business, tourism and hospitality, which can be requested by students at Fergana Branch.

2.3.3. Provide information on the system and procedures for the improvement and purchase of the methodological and informative provision. Description and assessment of the availability of the library and the databases to the students (including in digital environment) and their compliance with the needs of the study field by specifying whether the opening times of the library are appropriate for the students, as well as the number/ area of the premises, their suitability for individual studies and research work, the services provided by the library, the available literature for the implementation of the study field, the databases available for the students in the respective field, the statistical data on their use, the procedures for the replenishment of the library stock, as well as the procedures and possibilities for the subscription to the databases.

The total area of ISMA Library is 286m², of which 160m² - for readers, 118m² - for storage and 8m² - for other rooms. The total number of seats in the reading room is 37.

The library is open daily from 9am to 10pm.

Services of the library are the following:

- providing of text books for reading at home;
- providing of books from scientific collections for on-site work;
- reading-room and e-reading services, including access to the electronic resources of EBSCOhost platform;
- 7 computers for independent work;
- copying/printing/scanning self-service (paid service);
- interlibrary subscription services;
- consultations on the use of electronic resources;
- consultations on the search of specific information in electronic resources;
- ISBN/ISSN numbers allocations;
- ISMA publishing services.

ISMA teaching staff regularly publishes scientific articles in free access scientific collections such as ResearchGate.net and Academia.edu. ISMA students are also encouraged to register for resources and use free access information for scientific purposes.

Steps for the procedure for the library resources replenishment and database subscription:

1. At the beginning of the academic year, funds for the technical development of the library and the renewal of the book stock shall be allocated within ISMA budget;
2. Subscription orders for the latest literature / database are developed in cooperation with the Directors of study programmes and Heads of Departments within the Study Direction implemented by ISMA;
3. Search and selection of scientific literature supplier is performed.
4. The librarian compares order lists and prepares the overall order, indicating prices, for ISMA;
5. If the total sum of the orders exceeds the budget (15 000 EUR per year), they are analysed at the meetings of ISMA administration and the final decision is approved by ISMA Rector;
6. Purchase and documentation of books in the library fund is performed;
7. Lecturers and students are informed about the supply of new literature;
8. Exhibition of new literature is organised in the library.

Online resources available to ISMA students and faculty:

- ISMA cloud service Moodle contains lecture materials, assignments, recorded video lectures.
- ISMA electronic library contains digital books.
- ISMA students have access to the collection of publications of the International Monetary Fund.
- ISMA students have access to EBSCO and Scopus databases. Students and teaching staff are encouraged to use online scientific publication resources, such as Academia.Edu, Research Gate and various other open access scientific databases and platforms, such as Google Scholar, Index Copernicus, Open Research Library, etc.
- ISMA students have the opportunity to familiarize themselves with the regular online editions of the ISMA scientific magazine "Economics and Education", as well as theses and abstracts of ISMA conferences "Information Technologies and Management" and "Open learning and education". Also, ISMA website provides links to publications and monographs of partner institutions where the works of ISMA faculty members and doctoral students are published, for example, a link to the international monograph "Intellectual Challenges to Economic Globalism" and others.
- ISMA is the official partner of the publishing house "Baltija Publishing" http://www.baltijapublishing.lv/ 4 times a year ISMA publishes the International Scientific Journal "Economics&Education", which is indexed in Copernicus, as well as in other popular databases of scientific articles (see http://www.baltijapublishing.lv/index.php/econedu/indexed). One free publication per academic year is available to all ISMA faculty and students.

Summary of ISMA library fund resources for study direction on 18.12.2023:

Field	Name	Number of items	Distribution of items by languages		
			Latvian	English	Other
Computers. Computing systems. Informatics. Cryptography	66	145	11	58	76
Computer architecture and operating systems	18	34	14	0	20

Programming	142	258	36	11	211
Databases. Data structures and algorithms	58	127	7	0	120
Networks and systems	61	107	15	9	83
Artificial Intelligence	28	42	0	1	41
Mathematics and statistics	117	186	32	11	143
Management science	538	688	135	95	458
Business	304	406	190	28	188
Law	284	519	127	12	380
Social Sciences	417	564	195	42	327
Scientific research	27	33	2	5	26
Total:	**2177**	**3295**	**796**	**283**	**2216**

2.3.4. Provide a description and assessment of information and communication technology solutions used in the study process (e.g., MOODLE). If the study programmes within the study field are implemented in distance learning, the tools specially adapted for this form of study must also be indicated.

The available infrastructure and material and technical facilities for the implementation of the study field and corresponding study programmes provide an opportunity to increase the ISMA competitiveness, improve operational quality and efficiency, as well as to make information available by integrating IT solutions into administrative, academic and research processes and providing administrative and academic staff with modern, reliable, secure and unified IT infrastructure and quality IT services.

The Information Technology Department works in three areas:

1. Creation, development and maintenance of an integrated information system of ISMA providing support for administrative, academic and research work;
2. Provision of high-quality and uninterrupted data communication services, as well as maintenance of ISMA data centres and key network resources;
3. IT service support, incl. providing information on new IT solutions, giving necessary consultation and organizing IT training.

To ensure easy and efficient identification of IT users, an IT user identity management system has been introduced; as a result, each IT user has a unique electronic identity.

To ensure effective implementation of the study process, Moodle e-learning system is used, where all relevant information is compiled in an automated way (study courses, users, groups, access

rights, etc.). This system ensures student-teacher communication. The academic staff members place various electronic materials, assessment tests, homework assignments, information on a particular study course, etc. in the system. Students can access electronic learning resources anytime and anywhere For online distance learning academic staff has options to use *Zoom* video conferencing platform. Distance learning studies are regulated by the ISMA Methodological guidelines for distance learning studies for lecturers (in Latvian) https://beta.moodle.isma.lv/course/view.php?id=815

Digitization of classrooms and schedules has been carried out to ensure efficient premises management and study planning. Each student and academic staff member can access their schedule, which provides information on the venue, time, instructor, room, title and type of lecture. In addition, for user's convenience purposes, the system greatly facilitates lecture planning and scheduling, as well as optimizes the use and efficiency of premises.

In terms of quality assurance, a digital student survey system is used, with the help of which the quality control of study courses and study programmes is implemented each semester. Based on the results of quality control, regular measures are taken to improve study programmes and the study process, in general.

To ensure a stable and secure operation of the information technology infrastructure, continuous monitoring of the IT infrastructure and systems is performed, resulting in proactive incident control. Data backup is also ensured.

2.3.5. Provide information on the procedures for attracting and/or employing the teaching staff (including the call for vacancies, employment, election procedure, etc.), and the assessment of their transparency.

In 2023, ISMA created the Human Resources Development Strategy https://www.isma.lv/images/2024/documents_en/ISMA_Cilvkresursu_attstbas_stratija_lat_ENG.pdf .

One of the most important aspects is transparency and openness in the recruitment of the teaching staff.

The recruitment of lecturers takes place by announcing the competition for vacancies on the website isma.lv. Applicants who have not worked at ISMA are invited to conduct a guest lecture hosted by the Head of the respective department or by a lecturer appointed by the Head of the Department, and the Director of the study programme. After the lecture, the Director of the study programme conducts a student survey and submits the summarized results of each candidate to the Study Direction Council, where the submitted documents are analysed and discussions with the candidates take place. Students studying in a particular field of study have a veto right if their opinion about the lecturer is negative. If the Study Direction Council accepts the candidacy, the next Senate meeting will hold open elections. After the election, the candidates are informed of the results of the vote and, in the event of a positive vote, the Rector concludes a contract with the elected lecturer. The Fergana branch is planned to employ the same lecturers who implement the study program in Riga.

2.3.6. Specify whether there are common procedures for ensuring the qualification of the academic staff members and the work quality in place and provide the respective

assessment thereof. Specify the options for all teaching staff members to improve their qualifications (including the information on the involvement of the teaching staff in different activities, the incentives for their involvement, etc.). Provide the respective examples and specify the way the added value of the possibilities used for the implementation of the study process and the improvement of the study quality is evaluated.

ISMA personnel policy is aimed at the realization of the goals of the higher education institution by ensuring the efficient management of employees and consistent implementation of related processes. Therefore the following policy of the academic staff formation is developed in the framework of quality management system:

- To ensure that all study courses are delivered by qualified, scientifically and methodologically trained lecturers, who use modern working methods and are familiar with business practice.
- To ensure that no less than 50% of the teaching staff are elected at ISMA;
- 50% of the elected teaching staff hold a doctoral degree;
- at least two of the lecturers involved in the implementation of the study programme shall have a scientific degree in the field;
- to attract commercial activity specialists from companies to the teaching of study courses in the field;
- to promote the development of the academic staff and motivate the improvement of pedagogical, professional and scientific qualification of the teaching staff, both in Latvia and abroad, within the financial capacity of ISMA;

The performance of the teaching staff is evaluated throughout the year both by analysing the self-evaluation of the academic staff and by conducting and summarizing the results of student surveys.

The lecturers of study programmes regularly improve their qualification by taking part in various seminars and courses both as participants and teachers.

If a lecturer wishes to attend a particular seminar, one must submit an application to the Vice-rector for Studies in agreement with the Director of the study programme. ISMA administration evaluates the application and grants up to 100%. For example, several applications were received regarding the lecturers' desire to improve their English language by attending English language courses. ISMA administration, following these applications and the planned establishment of a branch in Uzbekistan, organized free courses for these lecturers.

The performance of the teaching staff is assessed throughout the year both by analysing the self-evaluation of the academic staff and by conducting and summarizing the results of student surveys. Lecturers who are highly regarded in scientific research and teaching have a priority in participating in the Erasmus + programme and are involved in the implementation of the study process at ISMA Fergana Branch (Uzbekistan). In order to increase lecturers' scientific research activities, a decision was made to pay the conference fee and attendance expenses if the ISMA lecturer's publication is recognized as of good quality and placed in the SCOPUS or Web of Science database.

ISMA believes that the best qualification rising for the academic staff is achieved through their involvement in research, application of the research results, cooperation with business representatives and participation in the international exchange of knowledge and competences.

Respectively, the academic staff members of the study direction are actively stimulated to participate in the experience exchange trips organized within the framework of ERASMUS +, take part in international weeks, projects, and other events. At the same time, ISMA International Relations Department actively attracts foreign lecturers to read lectures at ISMA, ensuring the exchange of knowledge and skills of lecturers.

The application procedure for a mobility visit to a partner university (the total number of which exceeds 80 universities) is as follows - at the beginning of the academic year, ISMA International Relations Department distributes a form to lecturers, indicating the desired activities and implementation period. The International Relations Department, in cooperation with ISMA Board, the Head of the study direction and Directors of the study programmes reviews the compliance of the activity with the study process and, after approval, a lecturer may apply for funding.

Promoting the exchange of knowledge and competencies of ISMA academic staff with foreign academic staff, ISMA has launched a new initiative in 2019 aiming at the promotion of the cooperation of academic staff in pedagogical-methodological work. On April 23-26, 2019, ISMA hosted the first *Erasmus + Staff Teaching and Training Week* at ISMA University of Applied Sciences. This week was attended by about 40 participants from Germany, Portugal, Lithuania, and other countries, thus fostering international cooperation. The participants highly appreciated this event, it was decided to continue this activity every year, and unfortunately these plans were temporarily interrupted by the Covid-19 pandemic.

There are positive examples where the training of ISMA academic staff has been promoted. During the pandemic, ISMA began to actively cooperate with the representatives of non-formal education, offering in-service training events (lectures, experience exchange meetings, seminars, etc.) to the representatives of universities in Ukraine, Kazakhstan and Lithuania.

2.3.7. Provide information on the number of the teaching staff members involved in the implementation of the relevant study programmes of the study field, as well as the analysis and assessment of the academic, administrative (if applicable) and research workload.

22 lecturers are involved in the implementation of the Study Direction. 17 of the lecturers are elected at ISMA, others are invited to share their Professional experience. 13 (76%) lecturers of the elected academic staff have doctoral degree, 4 (28%) lecturers have Master degree.

The workload of the teaching staff is calculated taking into account three aspects - work in auditoriums and consultations (academic aspect), organizational activity (organizational aspect) and work outside ISMA study process (research aspect).

Remuneration of the teaching staff for the organisational work

- **Vice-rector - 300 ac.h./year**
- **Study direction/study programme management –** (Head of Study Direction/Director of study programme) - **150 ac.h./year**
- **New study programme preparation for licencing** (Director of study programme) **- 300 ac.h./year.**
- **Study Direction preparation for accreditation** (Head of Study Direction)**- 300**

ac.h./year.

- **Study programme preparation for accreditation** (Director of study programme) **- 200 ac.h./year.**
- **Department management** (Head of Department) - **150 ac.h./year**.
- **Organisation of record-keeping of a Department and other structural units** - **60 h./year**
- **Curator of a strudents'group** - **60 h./year**
- **Development of a methodological complex of a study course, including electronic materials according to the approved form 150 ac.h./year**

Research work

- Preparation of study methodological materials (guidelines, lectures, etc.) for publishing –**1 ac.h**./1 (1800 characters) page (A4).
- Preparation of a scientific article for publishing - **3 ac.h**./1 (1800 characters) page (A4).
- Scientific or methodological materials editing before publishing - **1 ac.h**./5 (1800 characters) pages (A4).
- Preparation of theses for a scientific conference - **2 ac.h**./1 (1800 characters) page (A4).
- Organisation of a conference (conference moderator) - **50 ac.h./year**

2.3.8. Assessment of the support available for the students, including the support provided during the study process, as well as career and psychological support by specifying the support to be provided to specific student groups (for instance, students from abroad, part-time students, distance-learning students, students with special needs, etc.).

ISMA study process is student centred because:

- ISMA respects the multicultural student contingent and the diversity of their needs. Each foreign study group has a tutor who not only deals with the study process, but also welcomes the student at the airport, accompanies him to his place of residence, introduces the places of purchase of household goods, rules of transport use, etc.
- ISMA uses different ways of study programmes' implementation.
- In 2023, a lease agreement was signed for the premises at Lomonosova Street 1, k-5, thus facilitating access to classes for students with reduced mobility;
- Depending on the circumstances, ISMA applies a variety of pedagogical methods, with both full-time and part-time students, organizing group work, discussions and other teaching methods;
- Stimulates the students' independence while at the same time providing guidance and support from teaching staff - each lecturer has consultation hours, paid academic hours for the supervision of final works;
- Promotes mutual respect in student-teacher relationships, establishes appropriate procedures for resolving student complaints - students take part in the development of curricula and study environment through their involvement in Students' self-government

body and participation in various ISMA decision-making bodies (see section on ISMA decision making bodies), in surveys and “complaints and suggestions box ";

- Students are ensured individual approach to organizing the study process: those students who, for objective reasons, have not attended lectures, are provided access to a course description which reflects the topics that were covered during the week and the literature and study materials available to master the topics;
- Student work evaluation is consistent, fair, and applicable to all students. The assessment criteria are described in the course descriptions and explained; the extent to which students have achieved the expected learning and the explanation of the assessment are provided. In order to provide students with a record of their studies, an e-platform has been created where students can keep track of their progress and study documentation;
- The admission procedures and criteria are transparent; admission terms are available on ISMA web-page https://www.isma.lv/images/2024/documents_en/ISMA_Uznemsanas_noteikumi_2023-2024_ENG.pdf

2.4. Scientific Research and Artistic Creation

2.4.1. Description and assessment of the fields of scientific research and/or artistic creation in the study field, their compliance with the aims of the higher education institution/ college and the study field, and the development level of scientific research and artistic creation (provide a separate description of the role of the doctoral study programmes, if applicable).

Starting from 2015, when ISMA as a scientific institution has radically restructured the organisation of scientific research in accordance with the strategic development plan of the university, significant changes have taken place. Research directions are determined and lecturers are actively involved in research work.

In accordance with these directions and considering the interests of students and employers, the structure of the thematic blocks of the study direction was developed:

- Administration and security of computer systems
- Telecommunication systems
- Intelligent training systems
- Applied computer modelling systems
- Computer media design
- WEB technology information systems
- Intelligent nanosystems.

Within the field of study the main scientific research areas of ISMA are the following:

1. Machine learning methods and artificial intelligence
2. ICT and electronics:

2.1 Semi-automatic asynchronous logic synthesis in the XILINX system;

2.2 Mobile App and Artificial Intelligence.

As part of the research, for example, the monograph Models and methods of robots adaptive visual control was published in 2022. ISBN 978-9984-891-22-4, 184 p., one of the authors the monograph is V. Gopejenko - the Director of the Master's study programme.

Evaluating the themes of student works and their connection to the labour market, it should be noted that all topics are related to the study of current problems, in addition to the topics of software development and information security, the ones related to big data technologies, cloud computing and are becoming more and more popular.

A large part of the research carried out within the final theses and the resulting recommendations are appreciated and actually used in the activities of specific companies, as evidenced by the feedback provided by employers, which is attached to the submitted final theses. Therefore, it is possible to state that ISMA students, choosing the final topic and research objects, are based not only on theoretical knowledge acquired during their studies, but also on practical skills, and are competent to formulate current problems of the ICT industry and to choose the most appropriate tools, methods, programs, software development tools and software language to meet the needs of customers.

2.4.2. The relation between scientific research and/or artistic creation and the study process, including the description and assessment of the use of the outcomes in the study process.

ISMA research activities are an integral part of the study process. All leading lecturers of the study direction, who actively participate in scientific research, widely apply the obtained scientific results in the study process: preparing for lectures, developing practical examples and teaching methods, seminars, independent and project work, as well as the topics of graduation papers. The four lecturers involved in the implementation of the study programme are experts of the Latvian Council of Science:

Surname	Name	Date	Field
Bondarenko	Andrejs	04.10.2026	Engineering and technologies - Electrical engineering, electronics, information and communication technologies
Gopejenko	Viktors	07.06.2026	Natural sciences- Computer science and informatics

Kalniņš	Juris	10.05.2026	Natural sciences-Physics and astronomy
Riaschenko	Victoriia	02.02.2025	Social sciences-Economics and business

Other lecturers of the study direction also participate in research, projects, conferences and seminars . The publications of the teaching staff are included in the descriptions of the study courses, and they also improve the content of the study courses.

Most lecturers also have practical business experience, which they transfer to ISMA study process, providing practical examples, thus strengthening students' theoretical knowledge and developing their skills and competences.

2.4.3. Description and assessment of the international cooperation in the field of scientific research and/or artistic creation by specifying any joint projects, researches, etc. Specify those study programmes, which benefit from this cooperation. Specify the future plans for the development of international cooperation in the field of scientific research and/or artistic creation.

The study direction develops within the framework of the established contractual relations with several institutions. Current cooperation involves: Salento University, Lecce (Italy); Institute of Solid State Physics, University of Latvia (Latvia); University of Eastern Finland, Joensoo (Finland); Ventspils University of Applied Sciences, Ventspils (Latvia).

ISMA successfully cooperates with foreign and Latvian researchers. For example, research was carried out in cooperation with scientists from Latvia, Kazakhstan and Slovakia, the results of which are reflected in the publications of 2022:

- **Review of Artificial Intelligence and Machine Learning Technologies: Classification, Restrictions, Opportunities and Challenges**, *Mathematics2022*, *10*(15), 2552; https://doi.org/10.3390/math10152552
- **Analysis of the Correlation between Mass-Media Publication Activity and COVID-19 Epidemiological Situation in Early 2022**, *Information2022*, *13*(9), 434; https://doi.org/10.3390/info13090434

ISMA's annual International Scientific Conferences Information Technologies and Management https://www.isma.lv/en/science/conferences-and-research/international-scientific-conference-information-technologies-and-management and Open Learning and Distance Education https://www.isma.lv/en/science/conferences-and-research/open-learning-and-distance-education provide the presentation of scientific research by lecturers and students in public and virtual environment. Faculty publications are included in the descriptions of study courses and serve as a basis for students' further research.

2.4.4. Specify the way how the higher education institution/ college promotes the

involvement of the teaching staff in scientific research and/or artistic creation. Provide the description and assessment of the activities carried out by the academic staff in the field of scientific research and/or artistic creation relevant to the study field by providing examples.

ISMA lecturers are aware of the values.

In order to gather information about the lecturers' achievements in scientific research and practical activities, which are necessary for the improvement of the quality of professional study programs, lecturers are asked to fill in the table "Scientific and professional activities". Based on the information provided on research, participation in projects and practical activities outside ISMA, as well as the results of student surveys on the taught study course, the university management awards bonuses and / or increases the hourly rate.

If the lecturer plans to participate in the conference, he / she submits an application and the title of the report to the Rector. The application is considered, and a decision is made on the payment of the conference expenses in full or in part.

The main motivation for the scientific and creative activity of ISMA employees is the possibility of self-realization, interest in the subject taught and the opportunity to engage in scientific activities, including doing joint research with students.

Of great importance for motivating the scientific and creative activity of ISMA employees are the awards that are awarded to employees of higher education who have devoted their whole lives to the development of science and education. As a moral incentive, ISMA uses various forms of internal encouragement of employees, for example, such as the Certificate of Merit and gratitude of the rector, cash awards to academic staff and employees who have achieved significant success in teaching, research and teaching and methodological activities. Also, active scientific activity is an opportunity to be elected to the position of associate professor or professor, which also affects the size of the salary.

The development of motivation for scientific activity of the academic staff ISMA of the program is based on:

Collaboration with scientific research institutions in Latvia - such as the Institute of Economics of Latvian Academy of Sciences.

Researchers and scientists of high professional competence - both scientific and business experience, Scopus and WoS publications etc.

Interdisciplinary and student-centred approach in education - with specializations according to the market needs, modern case studies, constant students’s surveys, etc.

2.4.5. Specify how the involvement of the students in scientific research and/ or applied research and/or artistic creation activities is promoted. Provide the assessment and description of the involvement of the students of all-level study programmes in the relevant study field in scientific research and/ or applied research and/or artistic creation activities by giving examples of the opportunities offered to and used by the students.

Among the strategic priorities of the ISMA study direction, we can mention the involvement of students in scientific research, thus promoting the scientific potential of the university and the quality of graduates.

The research work of ISMA students is carried out both in and outside the auditoriums. Scientific research is performed as part of the educational process in accordance with the approved curricula. At the same time, the elements of research work can be applied in all forms of learning activity: in course design, at workshops and seminars, when performing laboratory work, in the process of traineeship.

Students' research work is mandatory for writing graduate theses.

The activity and effectiveness of students' participation in scientific events (competitions and conferences), their publication activity is largely intensified by timely information about the upcoming events on the website isma.lv.

An indicator of student scientific activity is their publications, as well as presentations at ISMA annual conferences, which are:

International Scientific Conferences "Information Technologies and Management" (https://www.isma.lv/zinatne/konferences-un-petijumi/international-scientific-conference-information-technologies-and-management), "Open Learning and Distance Education" (https://www.isma.lv/zinatne/konferences-un-petijumi/open-learning-and-distance-education),

Internship & Employment (https://www.isma.lv/zinatne/konferences-un-petijumi/internship-employment).

The working language of the conferences is English.

2.4.6. Provide a brief description and assessment of the forms of innovation (for instance, product, process, marketing, and organisational innovation) generally used in the higher education institution, especially in study field subject to the assessment, by giving the respective examples and assessing their impact on the study process.

Innovations in the study process can be divided into several blocks:

1) Innovations for attracting students

ISMA's vision is fulfilled by cooperating with the secondary school "ISMA Premjers", organizing the integration of university lecturers in the implementation of school study subjects;

The annual Festival "ISMA Invites Talents" is organized to support talent by offering free studies and support in talent development.

There are also laboratories, which organise creative meetings with pupils, thus achieving the greatest interest of prospective students in studying at ISMA.

2) Innovations related to the improvement of material and technical base:

During the reporting period, ISMA has opened representative offices in Belarus, Uzbekistan, Ukraine, Kazakhstan and plans to open in Switzerland; all representative offices are provided with modern office equipment and high-speed Internet.

ISMA is the only Latvian higher education institution that has opened a branch abroad.

Both in Latvia and in the Fergana Branch in Uzbekistan, ISMA classrooms are equipped with projectors or televisions, computers with Internet connection and comfortable workplaces. To control student attendance, as well as employee discipline, a door opening system was purchased and installed to read information from an individualized card chip.

TV screens are used to visualize advertisements and current information. A special department has been established to control the stay of foreign students in Latvia and their location in Europe during Erasmus + mobility, including the use of GPS coordinates.

3) Innovations related to the promotion of creativity and international cooperation:

ISMA International week is a biennial event that aims to attract project partners, internationalise and discuss common approaches to attracting and integrating students from third countries.

At the initiative of the student self-government, student internationalization evenings are held with the aim of achieving greater tolerance and integration of students from third countries, such as the NAVRUZ festival, the Spanish evening, etc. There are also various ISMA student life events that introduce students from different cultures (Erasmus + mobility participants, local students, students from India, Uzbekistan, etc.), such as making and enjoying pilaf.

4) Innovations related to students' professional development:

Regular visits of lecturers from EU partner universities, cooperation within the framework of the Erasmus + program, participation of ISMA lecturers with their lectures in the events organized by other EU universities and feedback to increase the experience of their students.

5) Innovations for society:

During the reporting period, the ISMA Business Incubator hosted a professional knowledge assembly, where students could discuss the aspects of business development in the areas such as digital technologies, marketing, tourism, languages, restaurant service, etc., through regular meetings with entrepreneurs and ISMA faculty.

2.5. Cooperation and Internationalisation

2.5.1. Provide the assessment as to how the cooperation with different institutions from Latvia (higher education institutions/ colleges, employers, employers' organisations, municipalities, non-governmental organisations, scientific institutes, etc.) within the study field contributes to the achievement of the aims and learning outcomes of the study field. Specify the criteria by which the cooperation partners for the study field and the relevant study programmes are selected and how the cooperation is organised by describing the cooperation with employers. In addition, specify the mechanism for the attraction of the cooperation partners.

ISMA University of Applied Sciences has many cooperation partners, which are other higher education institutions, associations, secondary education institutions, and employers both in Latvia and abroad.

In cooperation with Ventspils University of Applied Sciences, the Smart Technologies Research Center is established. Research in computer modelling of nanotechnology and nanosensors is

planned. Nanotechnology ensures the intensive development of artificial intelligence, which is the main goal in the development of study programmes. The open ISMA seminar on current nanotechnological problems, fuzzy logic and artificial intelligence systems is held with the participation of students of Bachelor's and Master's programmes.

Joint research with the Institute of Solid State Physics (LU) enables the integration of the staff and students into real research programmes in nanotechnology, computer modelling and information processing, including the tasks of FP7 and HO2020 projects. In 2016 ISMA established a Nanotechnology Laboratory, as a result of which the following projects were implemented:

- 2017 – 2020 ERAF Project Methods and Tools for the Design in Reconfigurable Environment No. 1.1.1.1/16/A/234
- 2021 – 2023 ERAF Project Research and Application Methodology Development of a New Preventive Eye Muscle Training and Strengthening Device EYE ROLL No.1.1.1.1/20/A/038

There are several criteria according to which cooperation partners are selected. The main ones are the relation of cooperation partners to the study direction and the curriculum of study programmes, the efficiency of cooperation partners' activities, as well as their reputation, which plays a major role among partners today. Mostly, ISMA builds long-term partnerships through which it can work on a number of issues.

To gain new contacts and new cooperation partners, the Directors of ISMA study programmes, the representatives of ISMA Career Centre, as well as the management of ISMA participate in the national and international conferences, seminars, as well as take advantage of international mobility opportunities.

In addition, in order to attract new employers for internship offer and other cooperation, ISMA organizes the annual Internship and Employment conference, where the existing ISMA partners take part in, as well as the new ones are invited.

The main criteria for finding partners and organizing effective cooperation with them:

1. General educational programmes and services
2. Key success factors (Compliance of educational products and services with the requirements of consumers and the market, continuity of education and science).
3. Composition and structure of the academic staff.
4. Competitive position of a HEI - the number of students, programmes, specializations.
5. The importance of partner activities for the intra-HEI community of ISMA (students, staff, administration).
6. Relevance for the non-university community (parents, employers, associations, etc.).
7. Application of modern educational technologies, training in additional educational programmes for students (additional special courses and cycles of study disciplines, courses of in-depth study of subjects).
8. Curriculum and study plan. This criterion helps us to determine the possibility of cooperation for the creation of joint training programmes or conducting scientific work, or organizing a process for the implementation of double degrees. Therefore, in this case, we need to find general parameters for the following questions: What is the vision of curricula, study programmes, specific study courses in relation to the scientific and professional components? What is the role of science skills development in a curriculum? To what extent can students participate in research projects during their studies?
9. Teaching methods. It is important to find answers on the following questions: What teaching methods does the teaching staff use? What kind of technologies are used? Are there opportunities for distance learning, Internet-based learning, etc.? Can students receive credit

points by participating in research projects of the study programme? How is the maximum student participation in learning ensured? What means are used to motivate students?

10. Provision and teaching processes. The implementation of this criterion also affects the quality of joint study programmes, as well as the possibility of student exchange. Therefore, it is important to clarify the following questions: How is the quality of learning improved? How is the development of information technology skills among teachers supported? How do new students get to know the learning system? How is assistance provided to students in the learning process when choosing study courses and disciplines? How is thesis management organised?
11. Quality assurance. For this criterion, the following questions are important: How is student progress being monitored? How is the functionality and quality of the educational programme assessed? Are the proposed study programmes nationally or internationally accredited?
12. International activity. How are the internationalization of teaching and the internationalization of research related? How much do teachers welcome international learning (teaching in a foreign language)? Are the study programmes open to local and foreign students? Do exchange students have study programmes tailor-made for them? What language are these programmes implemented in?

For working with employers, scientific institutions, and associations the most important criteria are the following: key success factors, the importance of the partner's activities for the ISMA intra-university community, significance for the non-university community, the use of modern educational technologies, and students' training in additional educational programmes.

For working with educational institutions, the most important criteria are the following: basic educational programmes and services, key success factors, composition and structure of the academic staff, competitive position of higher education, the importance of the partner's activities for the ISMA intra-university community, the use of modern educational technologies, training in additional educational student programs, curriculum , teaching methods, provision and teaching processes, quality assurance, international engagement.

2.5.2. Provide the assessment as to how the cooperation with different institutions from abroad (higher education institutions/ colleges, employers, employers' organisations, municipalities, non-governmental organisations, scientific institutes, etc.) within the study field contributes to the achievement of the aims and learning outcomes of the study field. Specify the criteria by which the cooperation partners suitable for the study field and the relevant study programmes are selected and how the cooperation is organised by describing the cooperation with employers. In addition, specify the mechanism for the attraction of the cooperation partners.

When entering into inter-university international cooperation agreements, ISMA International Relations Department usually prepares standard agreements that provide for cooperation within all ISMA study programmes, that is, multi-programme agreements that do not have a specific definition of operation within each programme. This is mainly due to the institutional structure of ISMA, a relatively small private HEI with no structural division into faculties. Accordingly, all the departments, as well as other units, are in a single matrix structure of study direction and support, and the lecturers and administrative staff involved in the study programmes operate on a consolidated basis. Consequently, interinstitutional cooperation agreements providing for the development of joint projects, reciprocal visits by visiting lecturers, conferences, etc. are not

differentiated and signed for each programme separately, unless otherwise provided, such as non-accreditation agreements or student mobility for a particular programme.

In recent years the cooperation with the EU and its partner countries has mainly been carried out through the opportunities and funding of the Erasmus and Erasmus + programmes. Accordingly, Erasmus + agreements largely reflect the aforementioned cooperation (visiting lecturers' visits, administrative staff visits, working on joint projects, etc.), so in the case of an Erasmus + bilateral agreement we do not conclude a normal cooperation agreement as it would be the overlap of similar functions. It should be noted that, when concluding the Erasmus + bilateral agreement, the division by programmes is a mandatory article of the Erasmus + agreement and it is also mentioned accordingly.

The main criteria for finding partners and organizing effective cooperation with them:

1. General educational programmes and services
2. Key success factors (Compliance of educational products and services with the requirements of consumers and the market, continuity of education and science).
3. Composition and structure of the academic staff.
4. Competitive position of a HEI - the number of students, programmes, specializations.
5. The importance of partner activities for the intra-HEI community of ISMA (students, staff, administration).
6. Relevance for the non-university community (parents, employers, associations, etc.).
7. Application of modern educational technologies, training in additional educational programmes for students (additional special courses and cycles of study disciplines, courses of in-depth study of subjects).
8. Curriculum and study plan. This criterion helps us to determine the possibility of cooperation for the creation of joint training programmes or conducting scientific work, or organizing a process for the implementation of double degrees. Therefore, in this case, we need to find general parameters for the following questions: What is the vision of curricula, study programmes, specific study courses in relation to the scientific and professional components? What is the role of science skills development in a curriculum? To what extent can students participate in research projects during their studies?
9. Teaching methods. It is important to find answers on the following questions: What teaching methods does the teaching staff use? What kind of technologies are used? Are there opportunities for distance learning, Internet-based learning, etc.? Can students receive credit points by participating in research projects of the study programme? How is the maximum student participation in learning ensured? What means are used to motivate students?
10. Provision and teaching processes. The implementation of this criterion also affects the quality of joint study programmes, as well as the possibility of student exchange. Therefore, it is important to clarify the following questions: How is the quality of learning improved? How is the development of information technology skills among teachers supported? How do new students get to know the learning system? How is assistance provided to students in the learning process when choosing study courses and disciplines? How is thesis management organised?
11. Quality assurance. For this criterion, the following questions are important: How is student progress being monitored? How is the functionality and quality of the educational programme assessed? Are the proposed study programmes nationally or internationally accredited?
12. International activity. How are the internationalization of teaching and the internationalization of research related? How much do teachers welcome international learning (teaching in a foreign language)? Are the study programmes open to local and foreign students? Do exchange students have study programmes tailor-made for them? What

language are these programmes implemented in?

For working with employers, scientific institutions, and associations the most important criteria are the following: key success factors, the importance of the partner's activities for the ISMA intra-university community, significance for the non-university community, the use of modern educational technologies, and students' training in additional educational programmes.

For working with educational institutions, the most important criteria are the following: basic educational programmes and services, key success factors, composition and structure of the academic staff, competitive position of higher education, the importance of the partner's activities for the ISMA intra-university community, the use of modern educational technologies, training in additional educational student programs, curriculum , teaching methods, provision and teaching processes, quality assurance, international engagement.

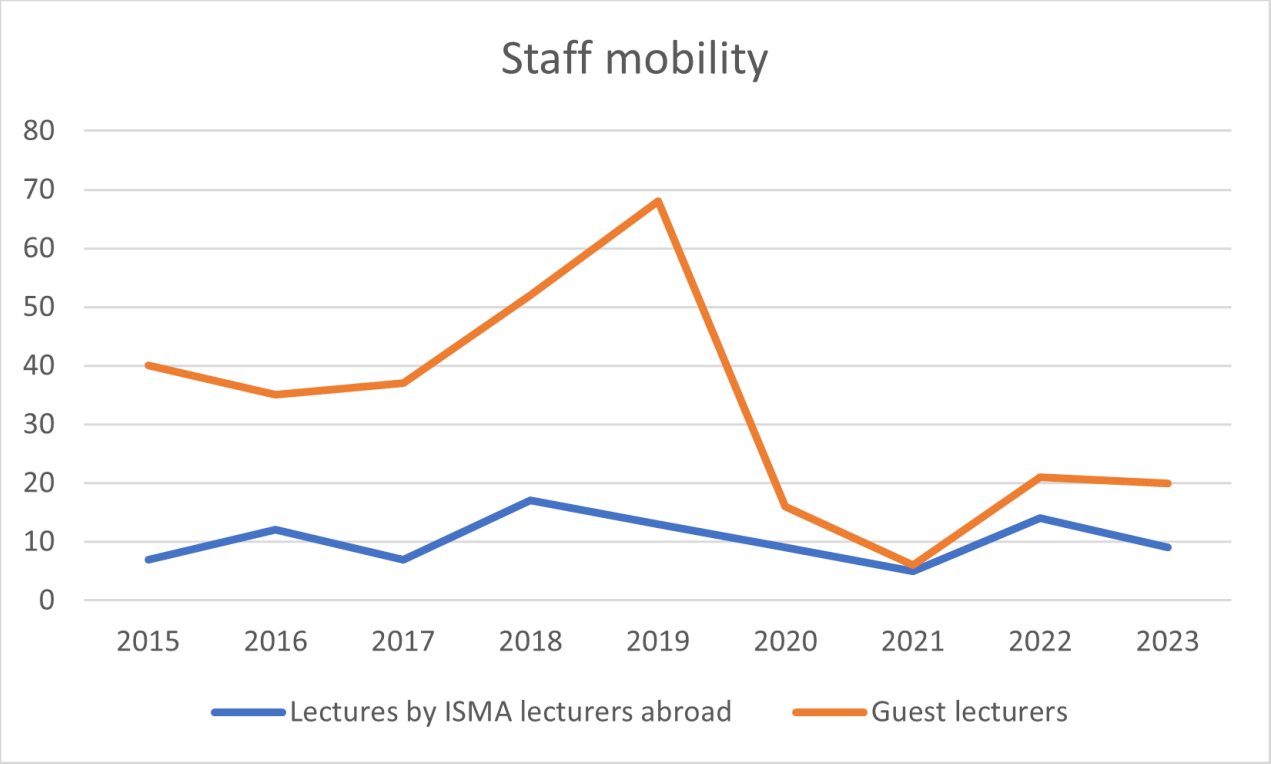
2.5.3. Specify the system or mechanisms, which are used to attract the students and the teaching staff from abroad. Provide the assessment of the incoming and outgoing mobility of the teaching staff in the reporting period, the mobility dynamics, and the issues which the higher education institution/ college faces with regard to the mobility of the teaching staff.

To attract foreign students, ISMA:

- organizes advertising campaign trips, incl. participation in educational exhibitions;
- establishes its representative offices (such as in Uzbekistan, Ukraine, Kazakhstan, Switzerland);
- supports and attracts agents who offer their mediation services (India, Azerbaijan);
- uses students as "ISMA messengers" who, through their positive experience in studying at ISMA, attract their relatives, friends and acquaintances. ISMA provides a family discount on tuition fees.

ISMA attracts teaching staff by organising multiple annual international conferences https://www.isma.lv/en/science/conferences-and-research Discussions on possible cooperation are held with the most promising lecturers.

The ISMA's participation in the Erasmus+ program is of great importance for promoting mobility.



The biggest difficulty ISMA faces is the need to reschedule the list of lectures for the duration of the mobility, but the Studies department easily copes with it.

The key student selection criteria for participation in traineeship or studies within the Erasmus+ Programme in accordance with ISMA Regulations on Student Mobility Erasmus+ Programme are the following:

- Students are transferred to the second year of study;
- Students have passed tests;
- Students have sufficient knowledge of the relevant foreign language.

The selection of students is coordinated by ISMA Council of Erasmus+ Programme, which consists of:

- Head of the Study Department,
- Vice-Rector for International Relations (Erasmus Coordinator),
- Representatives of the International Relations Department,
- Responsible for International Relations in Students' Self-government Body,
- Head of the Study Sector in Students' Self-government Body,
- Representative of International Business Communication Department,
- Head of Career Centre.

After receiving all applications from the students, ISMA Erasmus Coordinator proposes to convene the Council meeting to evaluate each student's application and decide who is nominated for participating within the Erasmus+ Programme. Data on student mobility can be viewed in the appendix.

2.6. Implementation of the Recommendations Received During the Previous Assessment Procedures

2.6.1. Assessment of the fulfilment of the plan regarding the implementation of the recommendations provided by the experts during the previous accreditation of the study field, as well as the assessment of the impact of the given recommendations on the study quality or the improvement of the study process within the study field and the relevant study programmes.

Improvements made in ISMA in 2013-2023 academic years:

- ISMA Satversme is improved, study aims and objectives are agreed with the aims and objectives of the HEI;
- ERASMUS agreements are concluded with foreign HEIs. The methodology of teaching specific study courses and modules is developed for the students of other HEIs. The mobility of lecturers and other staff has considerably improved.
- The methodology of final works development and defence has been updated.
- Academic staff participates in the assessment of other HEIs, including the all levels' final works defence.
- New study courses have been introduced and study courses have been improved according to the qualification to be acquired.
- Regular student surveys at the end of each course. Students are informed about the results of the surveys and the decisions made.
- Library has moved to the new, renovated building with a large reading room and computerized workstations, with regular replenishment of library resources
- Communication with students has been improved – student tutors are introduced, the Directors of study programmes regularly meet students, students' progress is analysed at scientific practical conference on traineeship, the most successful students and their traineeship reports, course papers and final works are honoured.
- New computer technologies have been introduced in the renovated building of the HEI (an ERAF project has been implemented), as well as interactive boards, etc. Students use the Moodle platform.
- Lecturers have raised their pedagogical competence and use modern teaching methods.
- Course descriptions have been revised – learning outcomes specified, intermediate assessment introduced (tests, essays, presentations). Students are regularly informed about the study achievements.
- In the framework of ISMA Business Institute and Computer Technologies Institute perform the research work which promotes in-depth acquisition of study courses.
- Study Direction Council is updated through the involvement of employers and students.
- Students' self-government body conducts surveys and analyses student survey results, students' feedback is established – Directors of study programmes regularly meet students with the aim to discuss the results of surveys and assess weaknesses.

- Employers' feedback is established – Directors of study programmes attract employers to participation in conferences on traineeship and final works defence.
- Cooperation agreements are concluded with Latvian and foreign HEIs. Academic staff mobility is improved.
- New questionnaires are developed for students, staff, employers and graduates surveys. Business professionals and students are attracted to the work of the Study Direction Council. The results of the surveys on the quality of the work of the academic staff are assessed.
- Study programme is improved accordingly to the recommendations of the surveys.
- Cooperation programme with secondary and professional technical schools is updated.
- Student involvement in conferences, seminars, etc. has increased - each Master student must take part in at least one conference organized by ISMA.
- Applications to new projects are prepared and students' involvement in the projects is planned.

The recommendations on year 2013 of the expert group have been fulfilled (see Annex 2.6.1).

2.6.2. Implementation of the recommendations given by the experts during the evaluation of the changes to the study programmes in the respective study field or licensed study programmes over the reporting period or recommendations received during the procedure for the inclusion of the study programme on the accreditation form of the study field (if applicable).
(Not applicable)

Annexes

I - Information on the Higher Education Institution/ College		
Information on the implementation of the study field in the branches of the higher education institution/ college (if applicable)	1.1 _Information_ISMA_Branches.docx	1.1_Informacija_ISMA_filiales.docx
List of the governing regulatory enactments and regulations of the higher education institution/ college	1.2.List_internal_regulatory_documents_ISMA.xlsx	1.2_Ieksejo_normativo_ dokumentu_saraksts_ISMA.xlsx
The management structure of the higher education institution/ college	1.3_Schematic_Management_Structure _ISMA .pdf	1.3_Parvaldibas_strukturas_shema_ISMA.pdf
II - Description of the Study Field - 2.1. Management of the Study Field		
Plan for the development of the study field (if applicable)	2.1.1.Development_plan_direction.docx	2.1.1.Studiju_virziena_attīstības plāns.docx
The management structure of the study field	2.1.2. Structure-direction.pdf	2.1.2.pielikums.St.virz.struktura.pdf
A document certifying that the higher education institution or college will provide students with opportunities to continue their education in another study programme or another higher education institution/ college (agreement with another accredited higher education institution or college) if the implementation of the study programme is terminated.	2.1.3. Acknowledgment_continue_studies_IT.pdf	2.1.3.Apliecinajums studiju progr partrauks_IT.pdf
A document certifying that the higher education institution or college guarantees compensation for losses to students if the study programme is not accredited or the study programme license is revoked due to actions (actions or omissions) of the higher education institution or college and the student does not wish to continue studies in another study programme.	2.1.4.Acknowledgment compensation IT.pdf	2.1.4.Apliecinājums zaudejumu kompensacija IT lv.pdf
Standard sample of study agreement	2.1.5.pielikums. Studiju ligums.docx	2.1.5.pielikums. Studiju ligums.docx
II - Description of the Study Field - 2.2. Efficiency of the Internal Quality Assurance System		
Analysis of the results of surveys of students, graduates and employers	2.2.1.Surveys_IT.docx	2.2.1.Aptaujas_IT.docx
II - Description of the Study Field - 2.3. Resources and Provision of the Study Field		
Basic information on the teaching staff involved in the implementation of the study field	2.3.1.Info_Teaching_Staff_IT.xlsx	2.3.1.Pamatinformācija par studiju virziena īstenošanā iesaistītajiem mācībspēkiem_IT.xlsx
Biographies of the teaching staff members (Curriculum Vitae in Europass format)	2.3.2.Lecturers CV_IT.pdf	2.3.2.Pasniedzēju CV_IT.pdf
A statement signed by the rector, director, head of the study programme or field that the knowledge of the state language of the teaching staff involved in the implementation of the study programmes within the study field complies with the regulations on the state language knowledge and state language proficiency test for professional and official duties.	2.3.3.Acknowledgment_language_IT.pdf	2.3.3.Apliecinajums_valsts_valoda_IT.pdf
A statement of the higher education institution/ college on the respective foreign language skills of the teaching staff involved in the implementation of the study programme at least at B2 level according to the European Language Proficiency Assessment levels (level distribution is available on the website www.europass.lv, if the study programme or part thereof is implemented)	2.3.4.Acknowledgment_english_IT.pdf	2.3.4.Apliecinajums_svesvaloda_IT.pdf
II - Description of the Study Field - 2.4. Scientific Research and Artistic Creation		
Summary of quantitative data on scientific and/ or applied research and / or artistic creation activities corresponding to the study field in the reporting period.	2.4.1.Summary_research.xlsx	2.4.1.Kvantitativo_datu_apkopojums_petnieciba.xlsx
List of the publications, patents, and artistic creations of the teaching staff over the reporting period.	2.4.2.ScientificWorks_IT_staff.docx	2.4.2.Mācībspēku_publikaciju_grantu_saraksts.docx
II - Description of the Study Field - 2.5. Cooperation and Internationalisation		
List of cooperation agreements, including the agreements for providing internship	2.5.1.pielikums.Sadarbibas ligumu saraksts 2024 IT.docx	2.5.1.pielikums.Sadarbibas ligumu saraksts 2024 IT.docx
Statistical data on the teaching staff and the students from abroad	2.5.2.Statistics_from_abroad_IT.xlsx	2.5.2.Arvalstu_studejosie_macibspeki_IT.xlsx
Statistical data on the incoming and outgoing mobility of students (by specifying the study programmes)	2.5.3.Statistics_incoming_outgoing_students_IT.xlsx	2.5.3.Statistika_studejo_mobilitate_IT.xlsx
Statistical data on the incoming and outgoing mobility of the teaching staff	2.5.4.Incoming-Outgoing_Staff_IT_2012-2023.xlsx	2.5.4.Incoming-Outgoing_Staff_IT_2012-2023.xlsx
II - Description of the Study Field - 2.6. Implementation of the Recommendations Received During the Previous Assessment Procedures		
Report on the implementation of the recommendations received both in the previous accreditation and in the licensing and/ or change assessment procedures and/ or the procedures for the inclusion of the study programme on the accreditation form of the study field.	2.6.1.Rekomendaciju_izpildes_parskats_ENG.docx	2.6.1.Rekomendaciju_izpildes_parskats_IT.docx
An application for the evaluation of the study field signed with a secure electronic signature	Iesniegums_programmu_saraksts-2024_IT-Eng-signed.edoc	Iesniegums_programmu_saraksts-2024_IT-LV-signed.edoc
III - Description of the Study Programme - 3.1. Indicators Describing the Study Programme		
Sample of the diploma and its supplement to be issued for completing the study programme		
For academic study programmes - Opinion of the Council of Higher Education in accordance with Section 55, Paragraph two of the Law on Higher Education Institutions (if applicable)		
Compliance of the joint study programme with the provisions of the Law on Higher Education Institutions (table) (if applicable)		
Statistics on the students in the reporting period		
III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof		
Compliance with the study programme with the State Education Standard		
Compliance of the qualification to be acquired upon completion of the study programme with the professional standard or the requirements for professional qualification (if applicable)		
Compliance of the study programme with the specific regulatory framework applicable to the relevant field (if applicable)		

Mapping of the study courses/ modules for the achievement of the learning outcomes of the study programme		
The curriculum of the study programme (for each type and form of the implementation of the study programme)		
Descriptions of the study courses/ modules		
Description of the organisation of the internship of the students (if applicable)		
III - Description of the Study Programme - 3.4. Teaching Staff		
Confirmation that the academic staff of the doctoral study programme includes not less than five doctors, of which at least three are experts approved by the Latvian Council of Science in the branch or sub-branch of science in which the study programme intends to award a scientific degree (if applicable)		
Confirmation that the academic staff of the academic study programme complies with the requirements specified in Section 55, Paragraph one, Clause 3 of the Law on Higher Education Institutions (if applicable)		

Other annexes

Name of document	Document
Ārzemju studentu uzņemšanas process	1.4.Ārzemju studentu uzņemšanas process.pdf
Admission process of International Students	1.4.Admission process International Students.pdf
1.1 _Information_ISMA_Branches.docx	1.1 _Information_ISMA_Branches.docx
1.1_Informacija_ISMA_filiales.docx	1.1_Informacija_ISMA_filiales.docx
3.2.2.Compliance_occup_standard_IS_2024.xlsx	3.2.2.Compliance_occup_standard_IS_2024.xlsx
4.2.2.Compliance_occup_standard_CS.docx	4.2.2.Compliance_occup_standard_CS.docx
4.2.4.Studiju plans_Mag.xlsx	4.2.4.Studiju plans_Mag.xlsx
Elaboration and defence of course papers and projects.pdf	Elaboration and defence of course papers and projects.pdf
ISMA atbilde uz pieprasījumu.docx	ISMA atbilde uz pieprasījumu.docx
Rikojums par ECTS atbilstību.pdf	Rikojums par ECTS atbilstību.pdf
Studiju darbu izstrādes un aizstāvēšanas metodoloģiskie norādījumi.pdf	Studiju darbu izstrādes un aizstāvēšanas metodoloģiskie norādījumi.pdf
Studiju programmas_procedura.pdf	Studiju programmas_procedura.pdf
Response from HEI documents 02.02.2024.docx	Response from HEI documents 02.02.2024.docx
Requests for additional documents from HEI (1).docx	Requests for additional documents from HEI (1).docx
2.5.1.pielikums.Sadarbibas ligumu saraksts 2024 IT.docx	2.5.1.pielikums.Sadarbibas ligumu saraksts 2024 IT.docx
Absolventu aptauja-visi_ENG.docx	Absolventu aptauja-visi_ENG.docx
Aptauja studentiem_ENG.docx	Aptauja studentiem_ENG.docx
Aptauja VISIEM Darba devējiem_ENG.docx	Aptauja VISIEM Darba devējiem_ENG.docx
Grozījumi 02022023.pdf	Grozījumi 02022023.pdf
Implementation of ISMA aims and objectives.docx	Implementation of ISMA aims and objectives.docx
ISMA talmacibas studiju metodiskas nostadnes docetajiem 2024 .docx	ISMA talmacibas studiju metodiskas nostadnes docetajiem 2024 .docx
Neatbilstību vadība.pdf	Neatbilstību vadība.pdf
Example_AI_Exam2021_INXXX24.pdf	Example_AI_Exam2021_INXXX24.pdf
3 Final Exam instructions.pdf	3 Final Exam instructions.pdf
3 Exam_questions_2024.pdf	3 Exam_questions_2024.pdf
2 Samples Exam Questions - Security of Computer Networks.pdf	2 Samples Exam Questions - Security of Computer Networks.pdf
2 Final_Exam_Network_Security_ instructions.pdf	2 Final_Exam_Network_Security_ instructions.pdf
1 Samples Questions - Computer Security Principles 2024.pdf	1 Samples Questions - Computer Security Principles 2024.pdf
1 Final_Exam_ComputerSecurityPrinciplesandTechnologies_instruction.pdf	1 Final_Exam_ComputerSecurityPrinciplesandTechnologies_instruction.pdf
Job description of consultant fergana1.jpeg	Job description of consultant fergana1.jpeg
Job description of consultant fergana2.jpeg	Job description of consultant fergana2.jpeg

Computer Systems (47483)

Study field	*Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science*
ProcedureStudyProgram.Name	*Computer Systems*
Education classification code	*47483*
Type of the study programme	*Professional master study programme*
Name of the study programme director	*Viktors*
Surname of the study programme director	*Gopejenko*
E-mail of the study programme director	*viktors.gopejenko@isma.lv*
Title of the study programme director	*Zinātnes doktora grāds (Ph.D.)*
Phone of the study programme director	*29713956*
Goal of the study programme	*To prepare innovative and systemically thinking, lifelong learning-oriented system analysts who are competitive in the global labour market, who are oriented in the field of computer science, understand the basic principles of business processes analysis and IT system functionality, are able to plan and implement IT solutions, coordinate and supervise team work demonstrating leadership and cooperation skills.*
Tasks of the study programme	*1. Provide competitive higher education according to the seventh-level professional qualification "System Analyst" and prepare specialists with high productivity potential in the global labour market.* *2. Provide students with knowledge and developed skills in the analysing of business processes, the development of a functional and effective business requirements model, the creation of new IT solutions and the re-planning of existing ones, as well as the creation and management of project teams.* *3. To create and constantly improve a study environment that provides a multidimensional view of computer system design, a complex approach to solving customer problems and promotes students' understanding of the importance of lifelong learning, including encouraging them to study for a doctoral degree.* *4. Organize and constantly develop cooperation with other Latvian and foreign educational institutions, professional organizations and employers in attracting highly qualified specialists for the implementation of the study process and its improvement.* *5. Participate in actualizing the problematic issues of the industry and developing solutions, supporting the scientific research creativity of academic staff and students.*

Results of the study programme	*1. To manage the development, implementation and maintenance of the processes of ICT solutions in accordance with the standards of the ICT industry, the approved plan and the technical documentation of the specific solution, as well as take responsibility for the results of own work and that of the team.* *2. To ensure the design, specification, implementation and maintenance of a wide range of ICT solutions in accordance with customer requirements and the ICT industry standards, to develop the necessary technical documentation for the proposed solutions, as well as to introduce the results of the latest scientific research in the industry to fulfil these tasks.* *3. To develop and implement innovative work methods that would ensure high-quality and efficient execution of various tasks related to ICT solutions, as well as to identify and understand the risks associated with the execution of the above-mentioned tasks; to be able to determine and choose the most appropriate risk mitigation measures and to control the risk management process at various stages of task performance.* *4. To choose the tools, methods, programmes, software development tools, and software language that best meet the needs of the customers, as well as to provide the necessary communicative processes to explain the validity of the choice made to all interested parties.* *5. To formulate the current problems of the ICT sector, which have been observed during the systematic monitoring of problematic issues in the sector, as well as to actively engage in scientific research activity.*
Final examination upon the completion of the study programme	*Master's thesis.*

Study programme forms

Full time studies - 1 years, 5 months - latvian

Study type and form	*Full time studies*
Duration in full years	*1*
Duration in month	*5*
Language	*latvian*
Amount (CP)	*90*
Admission requirements (in English)	*- First-cycle higher education and sixth-level professional qualification in the field of electrical engineering, electronics, information and communication technologies or - 2nd-level professional higher education acquired until the 11th of October, 2022 or - Master's degree in the field of electrical engineering, electronics, information and communication technologies.*
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional Master's degree in Computer and Information Science*
Qualification to be obtained (in english)	*Systems Analyst*

Places of implementation

Place name	City	Address

ISMA University College	RĪGA	VALĒRIJAS SEILES IELA 1 k-6, RĪGA, LV-1019

Part time extramural studies distance education - 2 years - english

Study type and form	*Part time extramural studies distance education*
Duration in full years	*2*
Duration in month	*0*
Language	*english*
Amount (CP)	*90*
Admission requirements (in English)	*- first-cycle higher education and sixth-level professional qualification in the field of electrical engineering, electronics, information and communication technologies; - second-level higher professional education in the field of electrical engineering, electronics, information and communication technologies until October 1, 2022; - Master's degree in the field of electrical engineering, electronics, information and communication technologies. At least level B2 of the English language proficiency.*
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional Master's degree in Computer and Information Science*
Qualification to be obtained (in english)	*Systems Analyst*

Places of implementation

Place name	City	Address
ISMA University College	RĪGA	VALĒRIJAS SEILES IELA 1 k-6, RĪGA, LV-1019

Full time studies - 1 years, 5 months - english

Study type and form	*Full time studies*
Duration in full years	*1*
Duration in month	*5*
Language	*english*
Amount (CP)	*90*
Admission requirements (in English)	*- First-cycle higher education and sixth-level professional qualification in the field of electrical engineering, electronics, information and communication technologies or - 2nd-level professional higher education acquired until the 11th of October, 2022 or - Master's degree in the field of electrical engineering, electronics, information and communication technologies. At least level B2 of the English language proficiency.*
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional Master's degree in Computer and Information Science*
Qualification to be obtained (in english)	*Systems Analyst*

Places of implementation

Place name	City	Address
ISMA University College	RĪGA	VALĒRIJAS SEILES IELA 1 k-6, RĪGA, LV-1019

Part time extramural studies distance education - 2 years, 5 months - english

Study type and form	*Part time extramural studies distance education*
Duration in full years	*2*
Duration in month	*5*
Language	*english*
Amount (CP)	*120*
Admission requirements (in English)	*- First-cycle higher education in the field of electrical engineering, electronics, information and communication technologies without professional qualification; - Bachelor's or Master's degree and / or sixth-level professional qualification in a specialisation in other fields of engineering and technology science. Entrance examination is mandatory to take; - second-level higher professional education and/or fifth-level professional qualification in other fields of engineering and technology science until October 1, 2022; - Bachelor's or Master's degree and / or a sixth-level professional qualification in a specialisation in other fields of science and at least 2 years of work experience in the field of electrical engineering, electronics, information and communication technologies. Entrance examination is mandatory to take. - Bachelor's or Master's degree and / or a fifth-level professional qualification in a specialisation in other fields of science and have at least 2 years of work experience in the field of electrical engineering, electronics, information and communication technologies until October 11, 2022. Entrance examination is mandatory to take. At least level B2 of the English language proficiency.*
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional Master's degree in Computer and Information Science*
Qualification to be obtained (in english)	*Systems Analyst*

Places of implementation

Place name	City	Address
ISMA University College	RĪGA	VALĒRIJAS SEILES IELA 1 k-6, RĪGA, LV-1019

Full time studies - 2 years - english

Study type and form	*Full time studies*
Duration in full years	*2*
Duration in month	*0*
Language	*english*
Amount (CP)	*120*

Admission requirements (in English)	*- First-cycle higher education in the field of electrical engineering, electronics, information and communication technologies without professional qualification; - Bachelor's or Master's degree and / or sixth-level professional qualification in a specialisation in other fields of engineering and technology science. Entrance examination is mandatory to take; - second-level higher professional education and/or fifth-level professional qualification in other fields of engineering and technology science until October 1, 2022; - Bachelor's or Master's degree and / or a sixth-level professional qualification in a specialisation in other fields of science and at least 2 years of work experience in the field of electrical engineering, electronics, information and communication technologies. Entrance examination is mandatory to take. - Bachelor's or Master's degree and / or a fifth-level professional qualification in a specialisation in other fields of science and have at least 2 years of work experience in the field of electrical engineering, electronics, information and communication technologies until October 11, 2022. Entrance examination is mandatory to take. At least level B2 of the English language proficiency.*
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional Master's degree in Computer and Information Science*
Qualification to be obtained (in english)	*Systems Analyst*

Places of implementation

Place name	City	Address
ISMA University College	RĪGA	VALĒRIJAS SEILES IELA 1 k-6, RĪGA, LV-1019

Part time studies - 2 years, 5 months - english

Study type and form	*Part time studies*
Duration in full years	*2*
Duration in month	*5*
Language	*english*
Amount (CP)	*120*
Admission requirements (in English)	*- First-cycle higher education in the field of electrical engineering, electronics, information and communication technologies without professional qualification; - Bachelor's or Master's degree and / or sixth-level professional qualification in a specialisation in other fields of engineering and technology science. Entrance examination is mandatory to take; - second-level higher professional education and/or fifth-level professional qualification in other fields of engineering and technology science until October 1, 2022; - Bachelor's or Master's degree and / or a sixth-level professional qualification in a specialisation in other fields of science and at least 2 years of work experience in the field of electrical engineering, electronics, information and communication technologies. Entrance examination is mandatory to take. - Bachelor's or Master's degree and / or a fifth-level professional qualification in a specialisation in other fields of science and have at least 2 years of work experience in the field of electrical engineering, electronics, information and communication technologies until October 11, 2022. Entrance examination is mandatory to take. At least level B2 of the English language proficiency.*

Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional Master's degree in Computer and Information Science*
Qualification to be obtained (in english)	*Systems Analyst*

3.1. Indicators Describing the Study Programme

3.1.1. Description and analysis of changes in the parameters of the study programme made since the issuance of the previous accreditation form of the study field or issuance of the study programme license, if the study programme is not included on the accreditation form of the study field, including changes planned within the evaluation procedure of the study field evaluation procedure.

The following changes in the indicators describing the study programme have occurred since the issuance of the previous accreditation in the Master's study programme "Computer Systems", taking into account the comments and recommendations provided by the accreditation experts during the previous accreditation of the study direction, changes in the demand structure, by updating the study programme according to the needs of the labour market and trends of scientific development, namely, the aim and objectives of the study programme are corrected, the awarded degree, the programme code, the forms of implementation, the amount and duration of the study programme are specified. The name, awarded qualification and final examinations remain unchanged. The changes made and their analysis is presented in the table below.

The changes made in the Indicators describing the Master's study programme "Computer Systems"

Indicators describing the study programme	Changes made and their analysis
Amount of the study programme (ECTS)	In accordance with the requirements of the labour market and to ensure the competitiveness of the programme, it was decided to reduce the amount of the programme. The study programme will be implemented in the amount of 90 ECTS, if a qualification or 2nd level higher professional education in the field of electronics, information and communication technologies has been previously obtained, while in the amount of 120 ECTS - for students who have obtained a Bachelor's education or professional qualification in other branches of science (see admission requirements for details).
Form, type, and duration of the study programme	Due to the reasons mentioned in the previous paragraph, the study duration of 2.5 years (in full-time studies), which applied to the study programme in the amount of 180 ECTS, is no longer relevant. According to the changes in the Law on Higher Education Institutions studies are not conducted in Russian starting from January 1, 2019, only in Latvian and English. Studies are planned in the following forms and types:

Full-time intramural	1 year and 5 months (90 ECTS)	Latvian and English
Full-time intramural	2 years (120 ECTS)	English
Part-time intramural	2 years and 5 months (120 ECTS)	English
Part-time distance	2 years (90 ECTS) or 2 years and 5 months (120 ECTS)	English

Admission requirements	Clarified admission requirements in different variants of the study programme. Admission requirements for the second cycle higher education Master's programme "Computer Systems" with study duration of 1.5 ac.years. (full-time studies) or 2 ac.years. (part-time studies): - First-cycle higher education and sixth-level professional qualification in the field of electrical engineering, electronics, information and communication technologies or - 2nd-level professional higher education acquired until the 11th of October, 2022 or - Master’s degree in the field of electrical engineering, electronics, information and communication technologies. And for the studies implemented in English: at least level B2 of the English language proficiency. Admission requirements for second-level higher education programme “Computer Systems” with the duration of studies **2** ac. yrs. (full-time studies) and 2,5 ac.years. (part-time studies) is for persons: - First-cycle higher education and sixth-level professional qualification in the field of electrical engineering, electronics, information and communication technologies without professional qualification. - Bachelor's or Master's degree and/or a sixth-level professional qualification in other engineering and technology sectors. The entrance examination is mandatory to pass; - Bachelor's or Master's degree and/or a sixth-level professional qualification in other engineering and technology sectors acquired until the 11th of October, 2022. The entrance examination is mandatory to pass; - Bachelor's or Master's degree and/or a sixth-level professional qualification in other engineering and technology sectors and at least 2-year working experience in the field of electrical engineering, electronics, information and communication technologies. The entrance examination is mandatory to pass; - persons who have acquired Bachelor's or Master's degree and/or a fifth-level professional qualification in other fields of science until the 11th of October, 2022 and at least 2-year working experience in the field of electrical engineering, electronics, information and communication technologies. The entrance examination is mandatory to pass. And for the studies implemented in English: at least level B2 of the English language proficiency.

Degree, professional qualification to be awarded	The awarded degree has changed – upon the completion of the study programme, a Master's degree in computer science and informatics will be awarded. The qualification to be awarded has not changed – System Analyst.
Code of the study programme	In accordance with the regulations of the Cabinet of Ministers of June 13, 2017 No. 322 “Noteikumi par Latvijas izglītības klasifikāciju” (Regulations on Latvian education classification), the code of the study programme "Computer Systems" according to the group of educational programmes “Datorsistēmas, datubāzes un datortīkli” (Computer systems, databases and computer networks) has been changed to 47483 (or 0612 according to ISCED-F 2013).
The aim, objectives and learning outcomes of the study programme have been adjusted according to the comments and recommendations of accreditation experts, the structure of qualifications developed by NEP (Councils of industry experts), the Latvian National Development Plan for 2021-2027 (LNAP 2021-2027), as well as the needs of the labour market and science development trends, harmonizing them with ISMA strategy and the goal of the study direction.	

3.1.2. Analysis and assessment of the study programme compliance with the study field. Analysis of the interrelation between the code of the study programme, the degree, professional qualification/professional qualification requirements or the degree and professional qualification to be acquired, the aims, objectives, learning outcomes, and the admission requirements. Description of the duration and scope of the implementation of the study programme (including different options of the study programme implementation) and evaluation of its usefulness.

The Master's study programme "Computer Systems" fully corresponds to the study direction "Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science", including the acquisition of such skills and competencies as business process analysis, creation and re-planning of IT solutions, preparation of technical documentation according to ICT industry standards etc., while promoting the development of leadership skills, as well as the understanding of the importance of cooperation and lifelong learning in one's profession, which is fully in line with the aim of the study direction to prepare competent, self-improvement-oriented and innovative-thinking professionals in the field of computer science and informatics who are competitive in the global market.

The name of the study programme is the Master's study programme "Computer Systems", which combines the key words of the degree to be obtained - Master's degree in computer science and informatics and the qualification to be obtained - System Analyst. The study programme is coordinated with the requirements of the corresponding Occupational Standard "System Analyst" and the qualification structure of the Electronic and Optical Equipment Production, Information and Communication Technology sector agreed at the December 15, 2021 meeting of the Professional Education and Employment Tripartite Cooperation Sub-Council (PINTSA). In accordance with this

Standard and the labour market situation, the aim of the study programme has been formulated, emphasizing professionalism, systemic thinking, orientation to lifelong learning, as well as innovative approach to solving problems. The objectives of the programme are set to achieve the aim of the study programme and are oriented towards the coherence of such elements of the study process as curriculum, learning environment, cooperation with external partners and scientific research. The planned learning outcomes are aligned with the professional standards and the requirements of knowledge, skills and competencies corresponding to the 7th level of the Latvian Qualifications Framework (LKI), as well as reflect the fulfilment of the programme's aims and objectives.

In accordance with the regulations of the Cabinet of Ministers of June 13, 2017 No. 322 “Noteikumi par Latvijas izglītības klasifikāciju” (Regulations on Latvian education classification), the code of the study programme "Computer Systems" according to the group of educational programmes “Datorsistēmas, datubāzes un datortīkli” (Computer systems, databases and computer networks) has been changed to 47483 (or 0612 according to ISCED-F 2013).

The study programme has two implementation options - 90 ECTS and 120 ECTS. The 90 ECTS option allows one to learn the requirements mentioned in the Occupational Standard of System Analyst profession in the shortest possible time and to acquire the competencies which ensure the specialist's competitiveness in the labour market, provided the relevant higher education and professional qualification have been previously obtained. However, the programme option in the amount of 120 ECTS is offered taking into account the rapid development of the IT field and its impact on the most diverse spheres of activity, the demand for IT education is also increasing from the representatives of other industries.

In order to ensure the admission of students to the most appropriate option of the study programme to obtain the professional qualification and degree, which is 120 ECTS or 90 ECTS, different admission requirements have been formulated, which clearly define the requirements to previous education of students to be admitted to each option of the study programme. Only those persons who have obtained a higher education or a Master's degree and a professional qualification in the field of electrical engineering, electronics, information and communication technologies can be admitted to the programme with the amount of 90 ECTS, because this means that they have acquired basic knowledge in the essential areas of the industry and practical skills during the traineeship. On the other hand, if a Bachelor's degree was obtained in other branches of science and there is at least 2 years of work experience in the field of electrical engineering, electronics, information and communication technologies, a student is admitted to the 120 ECTS programme (with the duration of 2 years of full-time studies) and masters study courses that provide basic knowledge in the fields in theory and/or practice according to the Master's degree and professional qualification.

Those who have obtained an academic education can be admitted to the programme with the amount of 120 ECTS, which includes traineeship of 30 ECTS to acquire the practical skills necessary for obtaining the professional qualification.

Mastering the 90 ECTS option of the full-time study programme is offered in Latvian or English, the other forms and types of implementation in both programme options - in English only. This is based on the fact that the demand for studies in this programme in Latvian has always been lower, as well as Latvian residents speak English more and more fluently and want to improve their chances in the labour market, and thus they choose to study in English, especially in the IT field, where the working language is mostly English. Full-time studies are the only opportunity for students from third countries to obtain a residence permit in Latvia in order to get education here.

Part-time intramural studies are implemented for working people who want to use the opportunity

to communicate with lecturers in person, but classes can only be attended in the evenings and on weekends. It should be noted that this form has not been implemented yet due to the small number of interested parties, but it has been decided to keep it and offer it in the future.

So far, part-time studies have been implemented only in the form of extramural studies, but now the decision has been made to switch to part-time distance learning offer in English, creating the distance learning materials, based on documents developed in ISMA - Regulations on Distance Learning (https://www.isma.lv/images/2024/documents_en/ISMA_Tlmcbas_tudiju_nolikums_2023_ENG.pdf), as well as Methodological Guidelines for Lecturers on Distance Learning Studies (https://beta.moodle.isma.lv/course/view.php?id=816). The materials will allow one to fully acquire all the necessary skills and competences of System Analyst, and at the same time help students by maintaining of closer contacts in the distance learning environment as well as ensure the control of study works due to the growing risks of unfair use of artificial intelligence. In addition, only distance learning studies are available to the citizens of Ukraine, but the number of students at ISMA from this country is relatively large, especially in recent years.

The duration of studies in each of the programme's implementation options allows you to optimally learn in compliance with all the requirements of the programme. In accordance with the requirements of the Law on Higher Education Institutions, the full-time studies 90 ECTS programme option is implemented within 1 year and 5 months, or 3 full semesters, the 120 ECTS programme option – within 2 years (4 semesters), which provides for the acquisition of 30 ECTS in each study semester. On the other hand, in part-time studies, 2 years or 4 semesters are allocated for the implementation of 90 ECTS, and 2 years and 5 months, or 5 semesters, for 120 ECTS, arranging the number of credits to be acquired by semesters as evenly as possible. In all the options and methods of implementation of the programme the last study semester is dedicated to only to completion of qualification traineeship and Master's thesis.

3.1.3. Economic and/ or social substantiation of the study programme, analysis of graduates' employment.

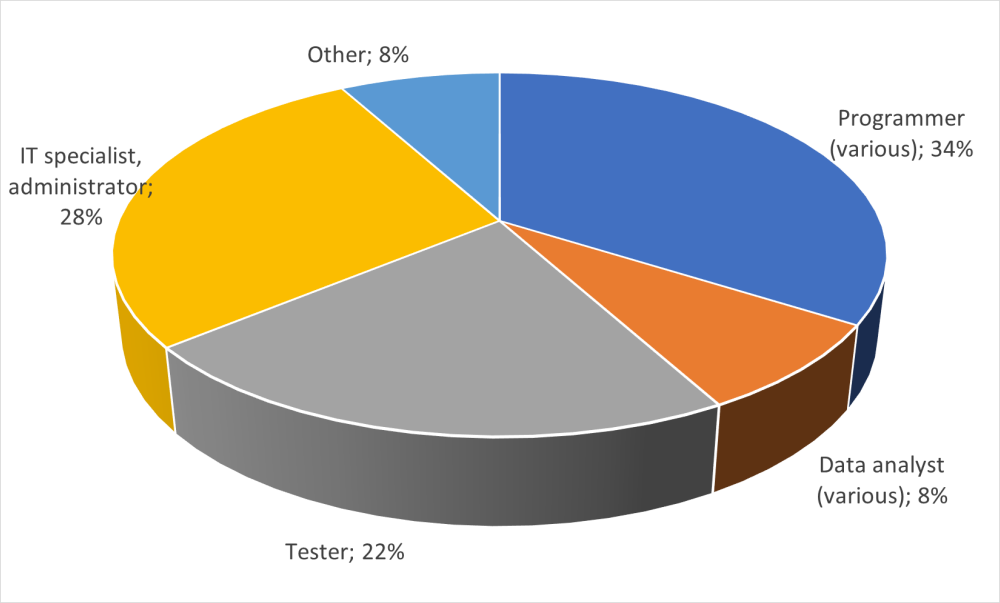
The study programme "Computer Systems" is relevant and important for the development of the national economy of Latvia. In accordance with the goals and directions of action defined in Latvia's National Development Plan for 2021-2027, the study programme prepares specialists who understand the importance of a rationally managed organizational and technological ecosystem and are able to create and implement it, as well as are oriented towards offering knowledge-intensive products and services. Specialists trained by ISMA are ready to not only purposefully realize their competences and accept the challenges of the modern labour market, but also to be responsible in their professional activities. In addition, the implementation of the programme is aimed at international cooperation and involvement in the world science and innovation developments, which “ir priekšnosacījums Latvijas zinātnes izcilībai, piekļuvei jaunām zināšanām un resursiem, kā arī Latvijas reputācijai kā valstij ar attīstītu ekonomiku un uzticamām, spējīgām pētniecības organizācijām un uzņēmumiem” ("is a prerequisite for the excellence of Latvian science, access to new knowledge and resources, as well as Latvia's reputation as a country with a developed economy and reliable, capable research organizations and companies") (LNDP 2021 -2027).

The study programme is designed in such a way that, after its graduation, students are oriented towards independent lifelong learning and are able to continue learning in doctoral studies.

ISMA regularly conducts graduate surveys so as to find out the progress of former students after graduation, including employment indicators, places of work and further studies. Since the surveys are conducted electronically, using the ISMA alumni database, those graduates went abroad from Latvia also participate in them.

Of the graduates who responded to the request to participate in the survey, all noted that they work successfully both in Latvia and abroad. Latvia, India, Czech Republic, United Kingdom, Nepal are mentioned as countries of employment.

The positions indicated by the graduates are mainly related to the education acquired in the field of IT - data analyst, system administrator, software tester, programmer in companies of various fields (see Fig.).



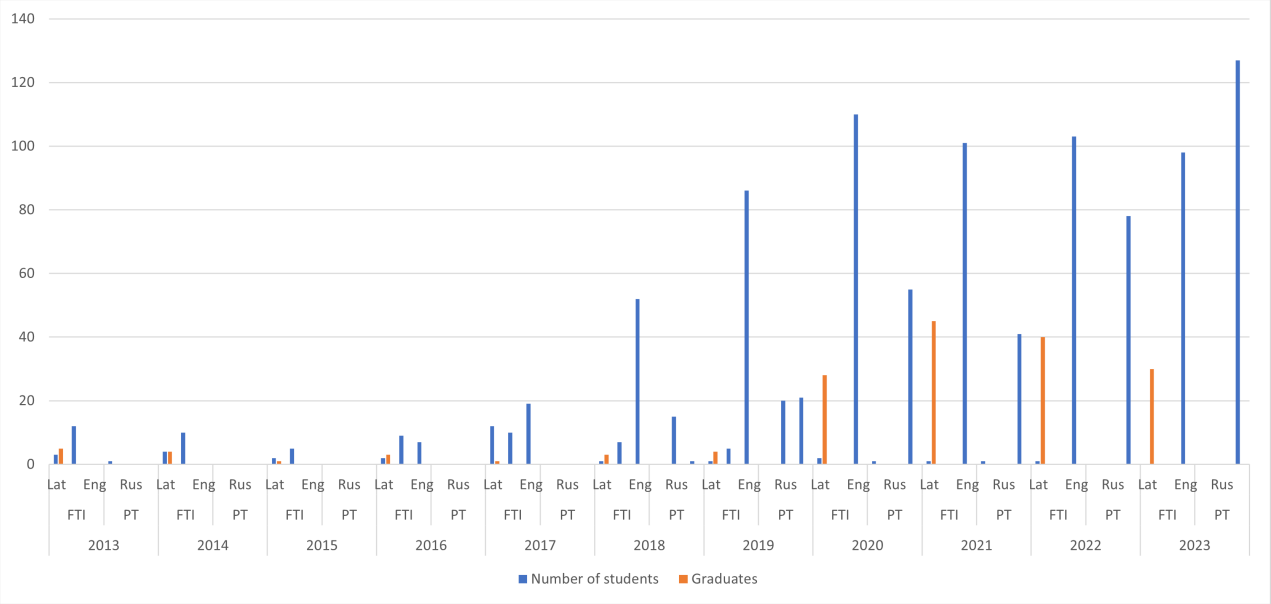
Graduates' employment by positions

Some of the respondents, and this is especially noticeable among the foreigners who have chosen to stay in Latvia after completing their studies, indicate that they are employed in a field not directly related to the profession they have acquired, taking a position such as travel expert, restaurant manager, but there are less than 10% of all graduates who have provided information about themselves.

3.1.4. Statistical data on the students of the respective study programme, the dynamics of the number of the students, and the factors affecting the changes to the number of the students. The analysis shall be broken down into different study forms, types, and languages.

Evaluating the number of students in the Master's study programme "Computer Systems" since the previous accreditation of the study direction, it can be seen that the number of students in the programme continues to increase every year. In 2013 the total number of students was only 16

students, but in 2022 this number increased more than 10 times to 182 students and there are already 225 students in 2023, mostly due to the increase in the number of foreign students. Obviously, the university's decision to develop cooperation with student agents from third countries and to take promotion measures to these markets was a correct and timely solution, which helped to maintain competitive positions both on the domestic and international markets. Logically, the largest increase in the number of students can be observed in studies in English.
All students in the study programme pay tuition fees by themselves, there are no state budget places in the programme. The graphic representation of the number of students is presented below, the tables show the number of students and graduates by year, years of studies, forms of studies, languages, and the distribution of full-time students by countries are attached in Annex 4.1.2. Statistics on the students in the reporting period.



Distribution of the number of students by study forms and languages in 2013-2023.

The statistical data show that the demand for the programme has started to grow significantly since 2018, and in 2022, when the impact of the pandemic has reduced the demand in other fields of study, the number of students in the IT field has continued to grow, although more slowly. This means that the programme is becoming known both on the Latvian and international markets, and it is positively evaluated by both university graduates and employers. Since the 2016/2017 academic year, the number of foreign students has started to increase significantly. One of the reasons for the programme's popularity in Uzbekistan is the low level of IT development and the high demand for specialists in this field. Additionally, the already established cooperation with companies in this region allows students to do traineeships in their home country, which increases their chances to successfully find a job after obtaining a diploma. On the other hand, those who spend the entire study period in Riga or use the Erasmus internship offer note the employers' assessment of the experience gained in European companies, which is highly appreciated in Uzbekistan and neighbouring countries.
The increase in the demand for the studies in English is related both to the fact that, according to the changes in the Law on Higher Education Institutions, since 2019 studies in Russian are no longer offered, and to the growing number of students from English-speaking countries (for example, India, Pakistan) and other countries. Also, along with the interest of the Uzbek government in the establishment of the ISMA Branch in Fergana and the support provided to it, information about the quality of studies offered by ISMA has spread both in Uzbekistan and in neighbouring countries, thus a rapid increase in the number of students from this region can be

observed. Along with the active operation of the representative office in Ukraine, the number of students from this country has also increased significantly. In addition, existing ISMA students are happy to share their feedback with their relatives and friends, who also choose to study in Riga under the influence of this information. Most foreigners, especially from countries outside the European Union, study full-time, which is related to obtaining a residence permit in Latvia, otherwise they would not be able to study here.

In the case of part-time studies, only the form of extramural studies has been implemented so far, however, as the interest in distance learning studies has increased, it is planned to start implementing the study programme also in this form from the next academic year.

Analysing the reasons for dropping out, it should be noted that many foreign students are not ready for the study process and requirements set by ISMA. Not being able to complete the tasks assigned within the study courses on time, some students decide to leave their studies on their own will, some are exmatriculated due to academic or financial debts.

3.1.5. Substantiation of the development of the joint study programme and description and evaluation of the choice of partner universities, including information on the development and implementation of the joint study programme (if applicable).

3.2. The Content of Studies and Implementation Thereof

3.2.1. Analysis of the content of the study programme. Assessment of the interrelation between the information included in the study courses/ modules, the intended learning outcomes, the set aims and other indicators with the aims of the study course/ module and the aims and intended outcomes of the study programme. Assessment of the relevance of the content of the study courses/ modules and compliance with the needs of the relevant industry, labour market and with the trends in science on how and whether the content of the study courses/ modules is updated in line with the development trends of the relevant industry, labour market, and science.

The content of the Master's study programme "Computer Systems" is designed to ensure the preparation of a professional who, by understanding the principles and models of business process analytics, is able to independently plan and implement IT solutions, as well as to build and supervise an effective team work. Therefore the programme includes the courses which develop knowledge, skills and competences in business process analysis, computer systems design, IT solution development and redesign (e.g., *Data Analysis, Business Intelligence, High-level analytics and knowledge technologies, System Approach to Computer System Design*, etc.), management of software projects (*Project Quality Management, Software Risk Analysis,* etc.) and information security topics *(Computer Security Principles and Technologies, Security of Computer Networks, Security and Privacy Compliance, Secure Development and DevSecOps etc.)*, and the study courses in the field of entrepreneurship and management (*Business Management*), and for the development

of general attitudes and competences (*Philosophy of Science Development and Approaches to Research, Environment, labour and civil protection*). In addition, the academic staff involved in the implementation of the study courses are professionals with considerable practical experience: data analysts, programmers, database developers and other highly-qualified specialists, so they introduce students to up-to-date latest developments, findings and methods in the field.

The study programme has been elaborated and updated based on the laws and regulations (the Law on Higher Education Institutions, education standard and Occupational Standard), instructions of the accreditation experts during the previous assessment of the study direction, results of student and graduate surveys, results of final theses, topical scientific research, including the research conducted by ISMA academic staff, recommendations of employers expressed in the references from traineeship placements, meetings at conferences, consulting on the development of Master's Theses, reviewing of Master's Theses, and participation in the state examination commissions (Master's Theses defence). Such a comprehensive and diverse approach to the improvement of the study content and process ensures that the content of the study programme corresponds to the requirements of the labour market and the development trends of the relevant industry.

In the development and implementation of the study programme, a logical sequence is followed: in compliance with the requirements defined in the Occupational Standard, labour market demand and the overall aim of the field of study, the aim of the programme and the tasks resulting from it are formulated. The content of the programme (distribution of the study courses) is based on the achievement of the aim and learning outcomes and the criteria defined in the educational standard; accordingly, the content of study courses is designed to implement the acquisition of knowledge, skills, and competences defined in the Occupational Standard, thus ensuring the implementation of the aim of the study programme.

The content of the study courses is discussed and approved cooperatively by the teaching staff involved in the study programme and the members of the Study Direction Council, thus ensuring cross-curricular coherence and harmonisation of common requirements for the achievement of learning outcomes, as well as eliminating unnecessary duplication of content.

According to ISMA internal regulations, a Council of respective study direction supervises the topicality of the study programme by making corrections to the study plan, the content of the study courses, traineeship assignments, etc. when necessary. The descriptions of the study courses are updated and reviewed in the respective departments at least once a year, usually before the beginning of academic year or more frequently if necessary. ISMA Senate approves the study plan at least once a year.

In the reporting period the most significant changes were made in accordance with the Senate Decision No 1-22 of 18 January 2022 to reduce the amount of the study programme in order to ensure its relevance to the demand and trends of the labour market, thereby increasing the competitiveness of the study programme. The revised programme has been adjusted to exclude narrowly specialised courses or the study courses which are no longer relevant in their current form (e.g. *Nanodevices for Computer Systems, Solid State Electronics Computational Methods and Software, Personal Wireless Communication Systems, E-Business Technologies Models and Efficiency* etc.); the content of some study courses has been recognised as more appropriate for undergraduate level, for example, *Operation Systems Conceptions, Programming for Data Science, Information Society.*

So as to improve the study programme, several study courses were merged, for example *Programming for Data Science* includes the previous courses *C++ and Java Object-Oriented Programming*, *WEB programming, 'Client-Server' Programming, Object-Oriented Analysis and*

Modelling, in turn the study course *System Approach to Computer System Design* includes highlights of the courses *System Approach to Computer System Design, Computer Systems Projecting and Diagnostics, Computer Systems Special Applications*.

Important study courses were introduced in accordance with the requirements of the labour market and current trends in the industry, mainly related to data processing, information and data security, machine learning. In order to offer students in-depth specialisation in the field of their interest, the study courses are divided into blocks in the elective courses section, which provides for the possibility of specialisation in information security management, data engineering or machine learning, so that after acquiring the basic knowledge, the future specialist can focus in depth on what he plans to do in the future. This gives the opportunity to acquire exactly those skills and competences on the final stage of the studies during qualification practice and Master's thesis development, thus being able to find and prove your place on the labour market.

Both options of the programme – 90 ECTS or 120 ECTS – provide for obtaining the qualification of System Analyst. As only those persons who have obtained a higher education or a Master's degree and a professional qualification in the field of electrical engineering, electronics, information and communication technologies can be admitted in the shortest version, it means that the basic knowledge, skills and competences in the essential areas of the industry have been acquired. Therefore, the requirements of the Occupational Standard of the System Analyst profession are met by studying in the study programme in the amount of 90 ECTS. On the other hand, if the Bachelor's degree was obtained in other branches of science, a student is enrolled in the 120 ECTS programme option and takes study courses in the amount of 30 ECTS, which provide basic knowledge and skills in the branch. Those who have obtained an academic education can be admitted to 120 ECTS programme, which includes traineeship in the amount of 30 ECTS in order to learn the practical skills necessary for obtaining professional qualification. Thus, students of all options of the programme have the opportunity to acquire all the necessary knowledge, skills and competences in the amount corresponding to the Occupational Standard of the profession and the requirements of the labour market.

3.2.2. In the case of master’s and doctoral study programmes, specify and provide the justification as to whether the degrees are awarded in view of the developments and findings in the field of science or artistic creation. In the case of a doctoral study programme, provide a description of the main research roadmaps and the impact of the study programme on research and other education levels (if applicable).

By mastering the Master’s study programme, a student both consolidates and improves the knowledge and qualifications of the previous education cycle (Bachelor’s or professional higher education) and also prepares for a higher education cycle such as doctoral studies. Therefore, a Master student should demonstrate not only their abilities and competence to develop and plan practical IT solutions, but also to conduct theoretical research and apply the latest achievements and knowledge of computer science and informatics in a Master’s thesis, which is an integral part of the study programme and one of the main forms of controlling the learning outcomes. As emphasised in the methodological guidelines for the development of Master’s thesis, the most important feature of Master’s thesis is that it is a scientifically practical study. The basic requirements for this type of work are as follows:

- it must be a study of a current problem of scientific practicality;

- one must base on the study of theoretical and specialised literature, evaluate and use the latest scientific research and publications on the particular problem;
- one must process published and unpublished data and information sources, materials, personal experiments, surveys, and observed facts by applying modern research and data processing techniques.
- it is recommended to review technological developments, new engineering and software solutions, market requirements, professional requirements in the field of information technology, existing standards, economic evaluations of technologies, potential risks of proposed solutions and implementation problems in the subject area.

In order to demonstrate their scientific research skills, Master students are invited to present their publications and speeches at conferences and workshops related to those studies in their Master's theses and to add expert reviews that have a significant impact on the assessment of the Master's thesis and the award of the Master's degree. When the student submits the completed Master's thesis, the supervisor verifies that it meets the above requirements and only then accepts the Thesis and promotes it for defence, approving that with a personal signature on the title page of the Master's thesis.

3.2.3. Assessment of the study programme including the study course/ module implementation methods by indicating what the methods are, and how they contribute to the achievement of the learning outcomes of the study courses and the aims of the study programme. In the case of a joint study programme, or in case the study programme is implemented in a foreign language or in the form of distance learning, describe in detail the methods used to deliver such a study programme. Provide an explanation of how the student-centred principles are taken into account in the implementation of the study process.

In the process of implementation of the Master's study programme "Computer Systems" various and diverse study methods and forms are used - lectures, seminars, analysis of practical situations, discussions, presentations, independent works individually and in groups, on-line lectures, video lectures, online tests, using various innovative tools and applications such as sli.do, Kahoot!, Socrative.com, etc. In addition to the contact hours, students carry out independent work as planned in the course. For example, the *Introduction to Quantum Computing* course uses Maxima Algebra, a computer algebra system written in Lisp with an emphasis on symbolic computing, while the Secure Software Development and DevSecOps course uses Hardened VM, SonarQube's open source platform for continuous code quality analysis and measurement. In the professional study courses, specific equipment and software are used to consolidate knowledge and complement theoretical material, such as Vensim PLE software *("Computer Experiments and Modelling Technologies*"), PostgreSQL database and PgAdmin ("*Databases and SQL*"), thus turning the theoretical material into practical.

Academic staff share their experience in using new and modern teaching methods, acquiring e-environment opportunities, development of creative thinking, and so on regularly, including the framework of annual conference "Open Learning and Distance Education" organised in January 2023 for the 21st time already.

In order to ensure the topicality of the study content, there are professionals of the specific industry also involved as guest lecturers in the implementation of the study process, who introduce the

topicalities of the sector, discuss and analyse particular examples in practical work, as well as consult students during their practical research (see also 3.4.Teaching Staff).

According to the ISMA Rector's order, 80 academic hours are provided for every 3 ECTS, of which in the Master's study programme for full-time intramural studies there are 24 contact hours in the audience, for part-time intramural studies 16 contact hours in the audience; for part-time distance learning or extramural studies – 1 consultation hour per week for each study course, remotely or in person, on a student's choice.

Lecturers motivate and support students to use various possibilities in planning and organising their independent learning, for example, to use study materials prepared by the lecturers of the respective study course in the electronic training system MOODLE

ISMA uses the Moodle automated testing tool for all types of student assessment, which enables objective and rapid assessment of the level of competence, set in the standards and greatly simplifies the assessment process. This is due to the reform of the education system and the need to improve the quality of student learning by using modern forms, technologies and teaching methods, as well as by introducing a competency-based approach to education.

Moodle was chosen for the testing of full-time and distance learning students because it organises an electronic learning environment. Moodle's technical capabilities allow for the development of tests comprising eleven question types, including open and closed questions, nested, computed, matching, etc.

An unlimited number of tests can be created from the test banks for all modules and topics of a study course. Depending on the discipline, it is possible to construct self-tests, intermediate tests per module and a final examination. LMS Moodle test settings are made according to their purpose. They allow you to use the assessment system not only to assess the level of mastery of the material, but also for self-study and self-monitoring. The Moodle system allows you to configure the testing period and time, number of attempts, assessment method, location, question properties, view, appearance, additional restrictions on attempts, final feedback in the form of a text description depending on the score, general module settings and access restrictions.

The Moodle e-learning system is used for the implementation of the study programme in the form of distance learning, which provides both convenient and visible uploading of materials and opportunities for self-monitoring and assessment of students' achievements. The organisation of distance learning studies, including the preparation of materials, the specifics of testing and practical work, etc., are described in the documents "ISMA Regulations on Distance Learning" (https://www.isma.lv/images/2024/documents_en/ISMA_Tlmcbas_tudiju_nolikums_2023_ENG.pdf) and "ISMA Methodological Guidelines for Lecturers on Distance Learning Studies" (https://beta.moodle.isma.lv/course/view.php?id=816), which are developed and operate in accordance with the ISMA Regulations on Studies.

The specifics of the Latvian and English language streams are of minor importance because, firstly, the Latvian stream is still in relatively low demand and, secondly, the working language in the IT field is English, so the reference materials, terminology and the platforms and tools used are mainly available and used in English.

The teaching staff choose study methods and forms in accordance with the specificity of their study course and its role in the study programme, practical activities within the study process, as well as the principles of student-centred education, the observance of which at the higher education institution gives students additional powers and imposes additional duties and responsibilities. By supporting students to influence their own study process, ISMA's faculty embraces the challenge of creating a modern, open and supportive study process.

When starting work with a particular group of students, a lecturer introduces the planned learning outcomes to the students and discusses the topicality of the study course. Then, taking into account the interests and needs of the students as well as the specifics of the study course, the lecturer agrees with the students on a possible adaptation of the learning process and the assessment system. Before starting the mastering of the study course, students are informed about the conditions to be met during the course of study, how knowledge is assessed and how the final assessment is formed. This set of requirements is also included in the description of each study course.

3.2.4. If the study programme envisages an internship, describe the internship opportunities offered to students, provision and work organization, including whether the higher education institution/ college helps students to find an internship place. If the study programme is implemented in a foreign language, provide information on how internship opportunities are provided in a foreign language, including for foreign students. To provide analysis and evaluation of the connection of the tasks set for students during the internship included in the study programme with the learning outcomes of the study programme (if applicable).

The 90ECTS version of the Master's study programme "Computer Systems" provides for traineeship of 9 ECTS, while the 120ECTS version of the study programme provides for additional 30 ECTS traineeship (39 ECTS in total) for those students who come to the Master's study programme after completing an academic Bachelor's programme. The tasks, course and reporting requirements for each traineeship are reflected in the descriptions, they are the same for all forms and types of studies (see Annex 4.2.5. Descriptions of study courses). In mutual cooperation between a student and a supervisor of the Master's thesis, the tasks of the qualification traineeship may be supplemented or adjusted according to the topic of the Master's thesis, which is also defined in the description of the traineeship.

When developing and updating traineeship objectives, one calls for ISMA administrative staff and academic staff (Directors of study programmes, leading lecturers, representatives of the Career Centre, representatives of the International Relations Department, etc.), and local and foreign employers to collaborate to ensure the training of the professionals ready to enter the labour market. For example, N.Kņiga, Associate Data Scientist at CTCO and I.Babičs, Member of the Board at DEVNRISE, regularly participate in the discussions of traineeship tasks within the Computer Systems programme. Members of ISMA Students Self-government Body are also invited to cooperate, and they are also conducting a continuous survey among students about their wishes and opportunities for traineeships in different companies.

All traineeship objectives are related to the learning outcomes to be achieved within the study programme based on the knowledge, skills, and competences defined in the professional standard and acquired during the study courses. This interrelation and requirements are clearly defined in the descriptions of traineeships (annex No.4.2.5. Descriptions of study courses).

The professional traineeship, which is to be carried out only for academic Bachelor degree holders, should include the application of basic theoretical knowledge of ICT in practice, for example, the ability to evaluate the methods of designing, implementing and maintaining ICT solutions in accordance with customer requirements and ICT industry standards, to study and analyse the processes of receiving and processing information obtained through information systems at an

enterprise, to evaluate the procedures for testing software and information systems developed at an enterprise, etc. On the other hand, the qualification traineeship should consolidate and demonstrate the practical skills, which have been acquired during the studies, in the development of specific ICT solutions, such as formulating a problem specification and selecting the tools, methods, programmes, software development tools and software language that best meet the needs of the customer.

Before going to traineeship, traineeship workshops – meetings are organised for all the students, where the process of the traineeship, the necessity of traineeship objectives, and preparation of traineeship documents are explained. Students are informed about cooperation partners from Latvia and abroad with whom ISMA cooperates within the traineeship and employment. Students are introduced with the Traineeship section in Moodle, where they can find the information they need about the traineeship, and find information on current vacancies.

Every year at the end of November, ISMA organises the international conference “Internship and Employment”, where students get acquainted with potential employers from Latvia and abroad, gain additional knowledge in the field of IT solutions, programming and other latest technologies, the development trends and demand on the Latvian and foreign labour market. At the end of the conference, each student has the opportunity to talk to company representatives, ask any questions they might have, and apply for traineeship. Experience has shown that this conference is very useful as many students gain traineeships in Latvia (in companies like Accenture Latvia, Telus International, Evolution Gaming Latvia, etc.) and in foreign companies (JobTrust in Greece, Aysel-Invest in Uzbekistan, and Clio in Bulgaria).

There is a wide range of traineeship opportunities offered to the students of the Master’s study programme “Computer Systems”. Traineeship objectives are sent out to companies so they can understand exactly what a student must do during the traineeship. Regular surveys of the companies are conducted, student demand is determined during the traineeship workshops, and relevant interrelation is ensured. Companies also offer permanent jobs to final-year students if they can demonstrate their skills during the traineeship, which proves that students have sufficient theoretical and practical training for the labour market

Due to the significant support of the Uzbek state to promote the education offered by ISMA, close and successful cooperation with employers in Uzbekistan, such as Fergana Golden Valley Service, Aysel-Invest, Shoirabegim Adras, Matxalikov Abdunabi Fayzi, etc., has been established, which allows students from Uzbekistan and from nearby countries to undertake traineeships closer to their home country. It should be noted that Uzbekistan's state policy is largely focused on attracting foreign capital, introducing European standards in various areas, and therefore companies often already have a well-established international environment and communication in English.

When concluding agreements for the provision of traineeships in the English language stream, the placement site is informed of the need to provide the internship in English, which does not pose any particular problems given the specific nature of the programme in the ICT field, where English is the main language of communication and work. During the internship, the representatives of the Career Centre follow up and communicate with the representative of the traineeship placement and the trainee, solve the situations that arise. There have been cases when a new traineeship placement is sought during traineeship, to offer all the conditions for the full and successful completion of the traineeship tasks and for the full benefit of the student.

ISMA is continuously developing career opportunities for its students and is looking for new traineeship placements to enable all students to enter the Latvian labour market. For example, in 2022-2023 new cooperation agreements were signed with SIA “Devnrise”, SIA “Komlain” etc., have started cooperation with TELUS International, Apollo Group, SEB Group, AirBaltic. The Head of the

Career Centre meets with representatives of local and foreign employers regularly by encouraging them to offer paid traineeships as well. Students are invited to meetings where representatives of the Career Centre and the International Relations Department report on traineeship opportunities regularly, and this information is disseminated through the website, social media, and informative boards on campus premises. The representatives of Students' Self-government Body are also involved in the dissemination of information.

3.2.5. Evaluation and description of the promotion opportunities and the promotion process provided to the students of the doctoral study programme (if applicable).

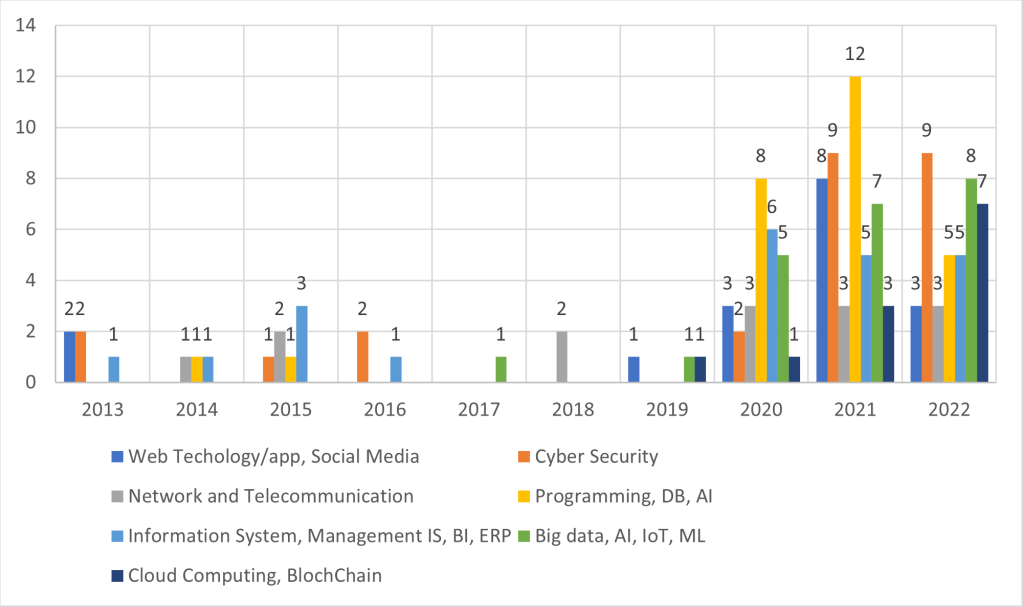
3.2.6. Analysis and assessment of the topics of the final theses of the students, their relevance in the respective field, including the labour market, and the marks of the final theses.

At the end of the Master's study programme "Computer Systems", in order to obtain the Master's degree and professional qualification, students develop and defend Master's theses. Evaluating the themes of the students' final theses 2013-2022 and their relevance to the labour market, it should be noted that all defended theses are related to topical issues of information technologies, for example:

- Development of a security and authentication system for a wireless local area network;
- Development of an efficient data flow distribution system in the information computer system of the heating company "AAA" Ltd. based on Mikrotik router;
- Corporate computer network security solution based on "freezing" of the operating system kernel;
- Development of a security system based on pattern recognition;
- Improved machine learning algorithms for automated security/vulnerability assessment analysis;

Estimating the labour intensity of software development.

By dividing the Master's thesis topics into blocks, we can follow the trends in students' interests over time (see Figure).

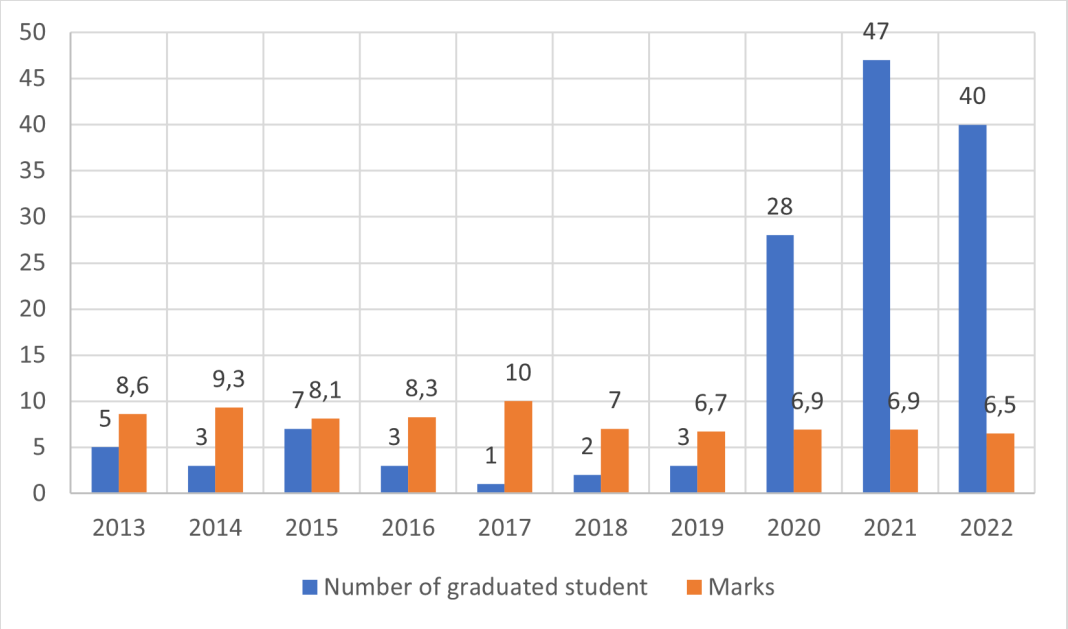


Master's thesis topics by blocks 2013-2022

As it can be seen, topics related to big data technologies and cloud computing are becoming more and more popular, while software development and information security issues have always caused students' interest.

A large part of the research carried out within the Master's theses and the resulting recommendations are appreciated and actually used in the activities of specific companies, as evidenced by the feedback provided by employers, which is attached to the submitted final theses. Therefore, it is possible to state that ISMA students, choosing the final topic and research objects, are based not only on theoretical knowledge acquired during their studies, but also on practical skills, and are competent to formulate current problems of the ICT industry and to choose the most appropriate tools, methods, programs, software development tools and software language to meet the needs of customers.

In most cases, the interrelation between the chosen topics of the final theses and a current employer or the chosen traineeship placement is assured, however, a student does not always have the opportunity to draft a Master's thesis based on the company where the undergraduate traineeship was completed. This problem is urgent, and ISMA Career Centre tries to assist students in solving this issue by addressing employers to enable students to complete traineeships and meet the objectives set by the supervisor to draft the Master's thesis. Unfortunately, employers are not always forthcoming and willing to provide the necessary information or to allow trainees to work independently, making it difficult for students to see the big picture, which can even lead to changing the topic of the Master's thesis.



Dynamics of average Master's thesis grades in 2013-2022.

Analysing the Master's thesis average evaluations in the period of 2013-2022, it should be noted that all final theses were successfully defended during this period and the majority of theses were evaluated with grades above 6 (out of 10 maximum possible points), which is considered to be a relatively good indicator.

3.3. Resources and Provision of the Study Programme

3.3.1. Assessment of the compliance of the resources and provision (study provision, scientific support (if applicable), informative provision (including libraries), material and technical provision, and financial provision) with the conditions for the implementation of the study programme and the learning outcomes to be achieved by providing the respective examples.

The "Computer Systems" study programme is implemented in modernly equipped premises in Lomonosova Street 1, where the building has been completely renovated with comfortable, bright, heated and ventilated auditoriums, a library and a cafe. The lecture rooms are equipped with everything necessary for the implementation of modern learning process - computers, projectors, televisions, interactive whiteboards, specialized software, constructors and platforms (for example, Keyestudio constructor, Raspberry-pi, Keyestudio designer kits, Arduino platform, etc.) - which are useful both as aids in conducting lectures and also for evaluating of the learning outcomes. For example, students' presentation skills are trained and tested by presenting group and individual works in many study courses, where projectors and appropriate presentation software are used, as well as specific tools or software, such as the online platform Google Collab or Jupyter Notebooks / Jupyter Lab, etc. On the other hand, to supplement the theoretical material of the professional study courses, specific equipment and software are used to consolidate knowledge, such as Vensim

PLE software ("Computer Experiments and Modeling Technologies"), PostgreSQL database and PgAdmin ("Databases and SQL"). Therefore, the theoretical material turns into practical.

In order to provide students with a suitable environment for achieving high study results, appropriate lecture rooms are used for different lecture, for example, in several auditoriums there are easily movable chairs with attached small tables for notes, thus, if necessary, it is easy to organize pair work, larger or smaller groups; there are 4 available lecture rooms with a total of 73 computers, each student has access to a computer during a lecture.

ISMA lecturers and students have the opportunity to use the following resources:

- An ISMA library in a total area of 286 m ² with a wide range of books and scientific articles which is regularly updated;
- International Monetary Fund publications;
- EBSCO – leading provider of research databases, e-magazines, magazine subscriptions, e-book services for libraries of all kinds;
- www.scopus.com – ISMA computers in the library
- Open Access scientific databases and platforms:

• arxiv.org • ASCE Library • CiteSeerx • Civil Engineering Database • CogPrints • Collection of Computer Science Bibliographies • Dimensions • The Directory of Open Access Journals (DOAJ) • EconBiz	• Google Scholar • HCI Bibliography • Index Copernicus • Information Bridge: Department of Energy Scientific and Technical Information • JSTOR Open Content • Mendeley • Microsoft Academic • MyScienceWork	• NBER: National Bureau of Economic Research • OAIster • Open Research Library • Paperity • Research Papers in Economics • Russian Science Citation Index • Science.gov • WorldWideScience

ISMA is the official partner of the publishing house “Baltija Publishing” http://www.baltijapublishing.lv/

4 times a year ISMA publishes the International Scientific Journal “Economics & Education”, which is indexed in Copernicus, as well as in other popular scientific databases (see http://www.baltijapublishing.lv/index.php/econedu/indexed).

The range of literature available in the university library, which most directly relates to the needs of the "Computer Systems" study programme, is presented in the table below.

Available literature for the study programme "Computer Systems"

Field	Name	Number of items	By languages		
			Latvian	English	Other
Computers. Computing systems. Informatics. Cryptography	66	145	11	58	76

Computer architecture and operating systems	18	34	14	0	20
Programming	142	258	36	11	211
Databases. Data structures and algorithms	58	127	7	0	120
Networks and systems	61	107	15	9	83
Artificial Intelligence	28	42	0	1	41
Mathematics and statistics	117	186	32	11	143
Management science	538	688	135	95	458
Business	304	406	190	28	188
Law	284	519	127	12	380
Social Sciences	417	564	195	42	327
Scientific research	27	33	2	5	26
Total:	2060	3109	764	272	2073

More information about the infrastructure and material and technical provision can be found in 2.3. Resources and Provision of the Study Field.

3.3.2. Assessment of the study provision and scientific base support, including the resources provided within the framework of cooperation with other science institutes and higher education institutions (applicable to doctoral study programmes) (if applicable).

3.3.3. Indicate data on the available funding for the corresponding study programme, its funding sources and their use for the development of the study programme. Provide information on the costs per one student within this study programme, indicating the items included in the cost calculation and the percentage distribution of funding between the specified items. The minimum number of students in the study programme in order to ensure the profitability of the study programme (indicating separately the information on each language, type and form of the study programme implementation).

ISMA is a private HEI founded by a legal entity; therefore the tuition fees paid by students are the main source of funding for the implementation of the study process. As a private higher education institution, ISMA does not receive state funding for its activities, and study programmes are

financed from the obtained tuition fees. Funding from projects, including international ones, and funding from promoting mobility within the Erasmus+ programme can be mentioned as additional activity-promoting assets. Also, the academic staff and students, who are involved in ISMA activities, carry out research commissioned by the private business sector, provide consultations, and organize trainings within the framework of informal education, including international ones; the ISMA Career Centre offers various study courses apart from formal studies. The obtained savings are used to ensure the operation of the university, including the implementation of study programmes.

Permanent sources of own revenue of the university are:

- revenues from tuition fees (75%);
- revenues from training courses (6%);
- revenues from contract research (5%);
- revenues from other scientific activity (11%);
- revenues from renting premises, utilities and other services (3%).

On the other hand, the tuition fee is covered from the funds of natural and/or legal entities, it consists of: personal funds of the student, funds of the student's employer, study loan with a guarantee provided on behalf of the state, commercial credit, funds of sponsors.

When planning the distribution of funding for study programmes, the ISMA Board takes into account certain parameters: ensuring administrative-economic activity, the functionality of the used premises; ensuring the study process with teaching aids; ensuring the social life of the university (student events, student involvement, Freshman party, traineeship conferences, ISMA festival, etc.); social benefits for students (discounts, budget places, etc.), renewal and replenishment of teaching equipment (computer security, computer software, etc.), promotion measures (promotion of study programmes, including in social networks, Olympiads, laboratory days, etc.), the necessary funds are planned in the accounting department in accordance with study directions, study programmes and ensuring the operation of the university in general; and financial support is distributed according to the order of the Rector.

Analysing the distribution approach to calculations and planning, it can be said that a mixed approach is applied when savings are planned based on planned income, on the number of students and the projected number of enrolled freshmen before the start of enrolment. Later, these data are compared with the actual number of students in the program, and the distributed funding for the study direction and the programmes is adjusted. Taking into account the strategic development plans, savings are made, amounting to 10% of the total revenue

Information about the costs in the study programme, indicating the items included in the cost calculation, is summarized in the Tables ....

Costs for a full-time student group (7 students) for the 90 ECTS study programme

Type of costs	Units	Amount	Payment per unit	Total costs (EUR)	%

Permanent	Contact hours (51 ECTS)	ac.hour.	408	20 EUR/ac.h	8160	32,2
	Methodological work	piece	14	4 ac.h. per 1 study course	1120	4,4
	Administration and infrastructure costs	piece	7	1125,2 EUR per year per 1 stud.	11814,6	46,6
Variables	Testing of study courses	piece	14	0,25 ac.h. per 1 stud.	700	2,8
	Traineeship assessment	piece	7	0,5 ac.h. per 1 stud.	70	0,3
	Master's thesis supervision, reviewing, defence	piece	7	25 ac.h. per 1 stud.	3500	13,8
	Total for a group of 7 students for the entire study period				**25364,6**	100,0
	Per 1 student per 1 semester				**1207,84**	

Costs for a full-time student group (7 students) for the 120 ECTS study programme

Type of costs		**Units**	**Amount**	**Payment per unit**	**Total costs (EUR)**	**%**
Permanent	Contact hours (81 ECTS)	ac.hour.	648	20 EUR/ac.h	12960	37,4
	Methodological work	piece	18	4 ac.h. per 1 study course	1440	4,2
	Administration and infrastructure costs	piece	7	1125,2 EUR per year per 1 stud.	15752,8	45,5
Variables	Testing of study courses	piece	18	0,25 ac.h. per 1 stud.	900	2,6
	Traineeship assessment	piece	7	0,5 ac.h. per 1 stud.	70	0,2
	Master's thesis supervision, reviewing, defence	piece	7	25 ac.h. per 1 stud.	3500	10,1
	Total for a group of 7 students for the entire study period				**34622,8**	100,0
	Per 1 student per 1 semester				**1236,53**	

Costs for a group of part-time distance learning students (3 students) for the 90 ECTS study programme

Type of costs	Units	Amount	Payment per unit	Total costs (EUR)	%
Updating of study materials	ECTS	51	20 EUR/ak.st.	2040	16,3
Administration and infrastructure costs	EUR	3	Depending on the ISMA stud. number, based on the results of the previous academic year	3600	28,8
Consultations	piece	14	1 academic hour per week	4480	35,9
			Total permanent costs	10120	81,0
Testing of study courses	piece	56	0,25 ac.h. per 1 stud.	840	6,7
Traineeship assessment	piece	3	0,5 ac.h. per 1 stud.	30	0,2
Master's thesis supervision, reviewing, defence	piece	3	25 ac.h. per 1 stud.	1500	12,0
			Total variable costs	2370	19,0
Total for a group of 3 students				**12490**	
Per 1 student per 1 semester				**1040,83**	

Costs for a group of part-time distance learning students (3 students) for the 120 ECTS study programme

Type of costs	Units	Amount	Payment per unit	Total costs (EUR)	%
Updating of study materials	ECTS	81	20 EUR/ac.h.	3240	21,3

Administration and infrastructure costs	EUR	3	Depending on the ISMA stud. number, based on the results of the previous academic year	3600	23,7
Consultations	piece	18	1 academic hour per week	5760	37,9
			Total permanent costs	12600	82,8
Testing of study courses	piece	72	0,25 ac.h. per 1 stud.	1080	7,1
Traineeship assessment	piece	3	0,5 ac.h. per 1 stud.	30	0,2
Master's thesis supervision, reviewing, defence	piece	3	25 ac.h. per 1 stud.	1500	9,9
			Total variable costs	2610	17,2
Total for a group of 3 students				**15210**	
Per 1 student per 1 semester				**1014,00**	

To ensure the profitability of the programme the minimum number of students in the study programme, regardless of the language of studies, is 7 students in full-time studies and 3 students in distance learning studies.

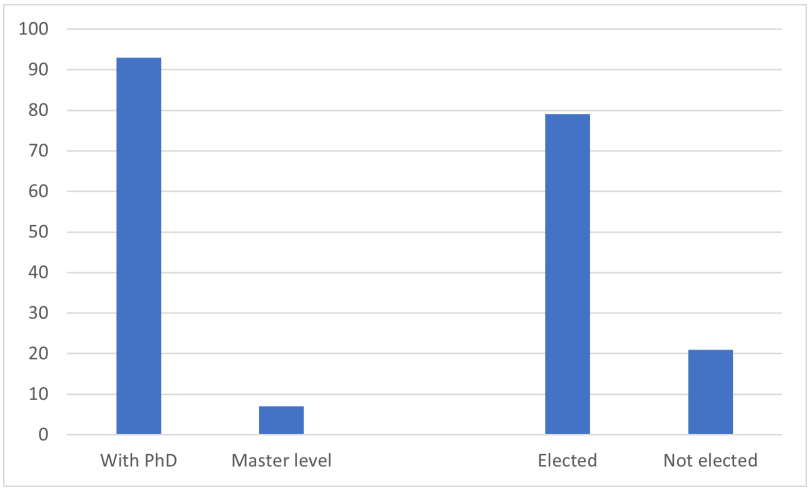
3.4. Teaching Staff

3.4.1. Assessment of the compliance of the qualification of the teaching staff members (academic staff members, visiting professors, visiting associate professors, visiting docents, visiting lecturers, and visiting assistants) involved in the implementation of the study programme with the conditions for the implementation of the study programme and the provisions set out in the respective regulatory enactments. Provide information on how the qualification of the teaching staff members contributes to the achievement of the learning outcomes.

In accordance with Article 27 of the “Law on Higher Education Institutions”, the academic staff of ISMA is composed of: professors, associate professors, docents, senior researchers, lecturers, researchers, assistants. ISMA academic positions are filled in accordance with the legislation of the Republic of Latvia, through the election procedure stipulated by ISMA’s “Regulations on election into academic positions”. The Regulations include the qualification and eligibility criteria for the teaching staff in accordance with Articles 28, 30, 32, 36, 37, 38, and 40 of the “Law on Higher Education Institutions”.

14 lecturers are involved in the implementation of the study programme, of which elected are 10 with Ph.D. and 1 with a Master's degre. 3 lecturers with a Ph.D. are not elected.

The ratio of lecturers with doctoral degrees is appropriate for the implementation of the Master's study programme; only lecturers with doctoral degrees are involved in the implementation of professional study courses. Only experienced and highly qualified lecturers who teach language courses have a Master's degree. The overall percentage distribution of the teaching staff involved in the implementation of the programme can be seen in Figure below.



Percentage distribution of the teaching staff in the Master's study programme 2023

3 experts of the LCS – V.Gopejenko, A.Bondarenko and V.Riashchenko are also involved in the implementation of the study programme.
As it can be seen from the CVs of the teaching staff in Annex 2.3.2, the teaching staff involved in the study programme read those courses in which they have significant practical experience. For example, A. Bondarenko is a data scientist and a leading Java developer; A. Berezhnojs is an experienced security testing engineer and Security/Privacy manager at the corporate level; R. Kopitov has been the Head of the analysis department in a manufacturing company. J.Chaiko regularly participates in and leads ICT research projects, such as "Future communications with higher-symmetric engineered artificial materials" (2019-2023), etc.

Involving practitioners in the learning process is one of the priorities of the study programme, as it is a significant competitive advantage that ISMA students appreciate. Therefore, guest lecturers are regularly invited, not only for learning a full study course, but also for discussing individual topics. Some of such lectures and seminars are organized for specific groups of students within a certain study course; some are widely available to anyone interested at ISMA. Important examples of the Master's study programme "Computer Systems" can be mentioned:

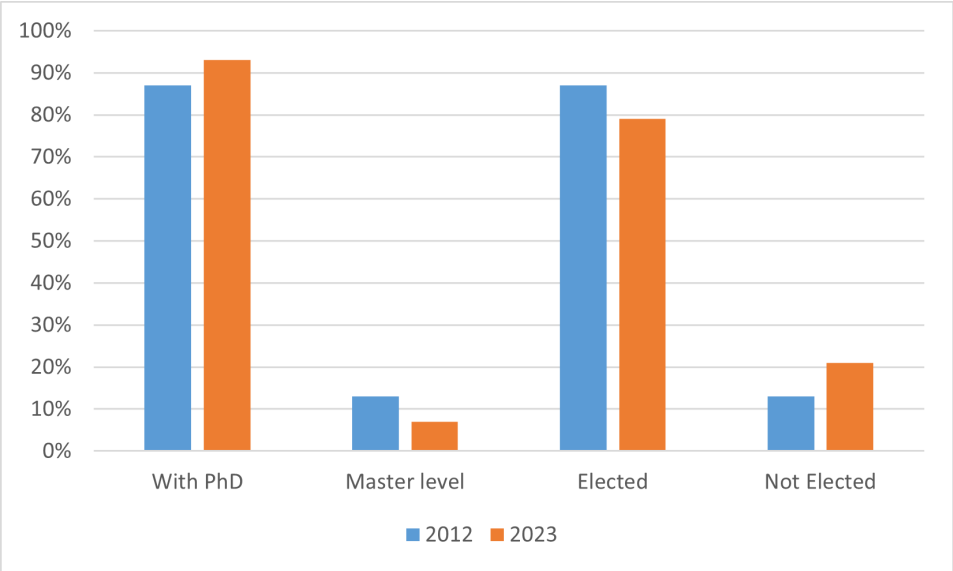
• N. Kņiga (Associated data scientist of SIA CTCO) "Neural network models for risk assessment of financial operations";
• I.Babičs (member of the board of SIA "DEVNRISE") "Custom WEB Development";
• M.Aleksandrovs (Cyberadviser OÜ Banking, Security consultant and Penetration Tester) regularly

informs about news in the security of computers, data, computer networks and applications;
• Regular seminars in collaboration with the machine learning excellence centre on big data processing, ML model development, Business rule processing for customer segmentation (DWH, R-studio, Power BI, SAP HANA).

The teaching staff takes an active role in the improvement of the study programme and the updating of study courses and methodological work, and are also continuing their own self-improvement through further education courses, seminars, further studies, participation in scientific research, conferences, and projects.
The results of scientific activity are incorporated into the study courses, introducing students to the latest trends in the industry (see also chapters 2.4.2 and 4.4.5). ISMA offers support for raising the qualification of the teaching staff, for example by providing financial support for participation in conferences and doctoral studies.

3.4.2. Analysis and assessment of the changes to the composition of the teaching staff over the reporting period and their impact on the study quality.

The composition of the teaching staff involved in the implementation of the study programme "Computer Systems" is generally relatively stable, but since the previous accreditation of the study direction, of course there have been changes in both the composition of the teaching staff and in the numerical indicators (see Figure below and the study plan in Annex 4.2.4.). In 2012, 15 lecturers were involved in the implementation of the study programme, 13 or 87% of them with a Ph.D. and 2 or 13% with a Master's degree, while in 2023 there are involved 14 lecturers, 13 of whom are with a Ph.D. The increase in the proportion of unelected teaching staff (from 2 or 13% in 2012 to 3 or 21% in 2023) is due to the involvement of professionals in the implementation of the programme, which has been repeatedly pointed out by students and graduates. It should be underlined that all non-elected teaching staff are with a Ph.D.



Percentage distribution of the teaching staff in the Master's study programme in the reporting period

Several ISMA academic staff members continue to work in the study programme for many years, for example, V.Gopejenko, J.Čaiko, R.Kopitovs, A.Mrochko. However, a number of teaching staff members with considerable experience in teaching and practical work have also been involved, for

example, A.Bondarenko, A.Berežnojs, J.R.Kalniņš, O.Pozdņakova.

Compared to 2012, the number of professors involved in the implementation of the programme has increased:

	Professors	Associated Professors	Assistant Professors
2012/2013	2	6	7
2023/2024	7	1	4

In order to ensure the highest possible quality of the study process and emphasize the students' orientation towards scientific research activities, only academic staff with a doctoral degree are involved in the implementation of the professional study courses of the study programme. This promotes the joint research of students and the teaching staff, as well as allows integrating the results of important research as quickly as possible into the content of the study programme, which is especially relevant in the field of IT, where changes and new discoveries take place constantly and rapidly.

3.4.3. Information on the number of the scientific publications of the academic staff members, involved in the implementation of doctoral study programme, as published during the reporting period by listing the most significant publications published in Scopus or WoS CC indexed journals. As for the social sciences, humanitarian sciences, and the science of art, the scientific publications published in ERIH+ indexed journals or peer-reviewed monographs may be additionally specified. Information on the teaching staff included in the database of experts of the Latvian Council of Science in the relevant field of science (total number, name of the lecturer, field of science in which the teaching staff has the status of an expert and expiration date of the Latvian Council of Science expert) (if applicable).

3.4.4. Information on the participation of the academic staff, involved in the implementation of the doctoral study programme, in scientific projects as project managers or prime contractors/ subproject managers/ leading researchers by specifying the name of the relevant project, as well as the source and the amount of the funding. Provide information on the reporting period (if applicable).

3.4.5. Assessment of the cooperation between the teaching staff members by specifying the mechanisms used to promote the cooperation and ensure the interrelation between the study programme and study courses/ modules. Specify also the proportion of the

number of the students and the teaching staff within the study programme (at the moment of the submission of the Self-Assessment Report).

Completely understanding the importance of teaching staff cooperation, ISMA implements this collaboration in three blocks:

1. Cooperation of the teaching staff in the development and updating of study programmes and study course descriptions.
2. Cooperation of the teaching staff in the improvement of methodological work.
3. Collaboration of the teaching staff in scientific research creativity.

To ensure interdisciplinary relation and harmonisation of common requirements for the achievement of learning outcomes, as well as to eliminate an unnecessary overlapping of the study content, the content of the study courses is regularly discussed and approved by the lecturers and the Study Direction Council members involved in the study programme. This is done at Council meetings, departmental meetings, and also during individual informal meetings of the teaching staff where lecturers share information and coordinate their work and study courses.

Teaching staff regularly shares their experience in using new, modern teaching methods, developing e-environment opportunities, developing creative thinking, and similar issues during the annual “Open Learning and Distance Education” conference, which was held for the 21st time in January 2023. During the conference one can learn about the latest research and discoveries from the presentations of the speakers, as well as meet in-person with colleagues from different Latvian and foreign educational institutions and other organizations.

Starting in April 2019, ISMA has launched a new initiative, which is also aimed at promoting the collaboration of lecturers in their pedagogical and methodological work. The first *Erasmus+ Staff Teaching and Training Week at ISMA University* took place in 2019. In an informal setting, participants had an opportunity to discuss current issues in higher education, develop recommendations for student mobility, and share their experience on the specificities of implementation of the study process in Ukraine, Lithuania, Portugal, and other countries. The ISMA initiative has received great response from the teaching staff. Unfortunately, the pandemic and the war in Ukraine temporarily forced exchange programs to be implemented remotely, but in 2023 this initiative is continued by inviting guest lecturers to Riga to conduct seminars and lectures for students and teachers on current topics in various sectors.

The cooperation of the academic staff in the field of scientific creativity is implemented in accordance with the relation of ISMA study programmes implemented in the study direction "Information technologies, computer engineering, electronics, telecommunications, computer management and computer science". Joint scientific research covers such areas as machine learning, big data technologies, cloud computing and cloud computing, ICT security, as well as other research related to the specifics of the study programmes implemented within the direction. Full information on the research conducted by the teaching staff can be found in the biographies of the lecturers (Annex 2.3.2) and in Annex 2.4.2, where information on the scientific research of the teaching staff is collected.

At the time of submission of the self-evaluation, in 2023 there are 225 students in the Master's study programme "Computer Systems" and 14 teaching staff members are involved in the implementation of the programme, therefore, there are 16 students for 1 lecturer, excluding the invited guest lecturers.

Annexes

III - Description of the Study Programme - 3.1. Indicators Describing the Study Programme		
Sample of the diploma and its supplement to be issued for completing the study programme	4.1.1.Diploma_CS_Eng.docx	4.1.1.Diploms_paraugs_MAG_IT_LV.docx
For academic study programmes - Opinion of the Council of Higher Education in accordance with Section 55, Paragraph two of the Law on Higher Education Institutions (if applicable)		
Compliance of the joint study programme with the provisions of the Law on Higher Education Institutions (table) (if applicable)		
Statistics on the students in the reporting period	4.1.2.Statistics_Students_DS.xlsx	4.1.2.Statistika par studējošajiem pārskata periodā_DS.xlsx
III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof		
Compliance with the study programme with the State Education Standard	4.2.1.Compliance_educ_stand_Mag.docx	4.2.1.Atbilstiba_izglitibas_stand_Mag.docx
Compliance of the qualification to be acquired upon completion of the study programme with the professional standard or the requirements for professional qualification (if applicable)	4.2.2.Compliance_occup_standard_CS.docx	4.2.2.Atbilstība_prof_standartam_DS.docx
Compliance of the study programme with the specific regulatory framework applicable to the relevant field (if applicable)		
Mapping of the study courses/ modules for the achievement of the learning outcomes of the study programme	4.2.3.Mapping_DS.docx	4.2.3.Kartejums_DS.docx
The curriculum of the study programme (for each type and form of the implementation of the study programme)	4.2.4.Studiju plans_Mag.xlsx	4.2.4.Studiju plans_Mag.xlsx
Descriptions of the study courses/ modules	4.2.5.Descriptions_study_courses_CS.docx	4.2.5.Kursu_apraksti_DS.docx
Description of the organisation of the internship of the students (if applicable)	3.2.6.Traineeship_regulations.doc	3.2.6.Prakses_nolikums.doc
III - Description of the Study Programme - 3.4. Teaching Staff		
Confirmation that the academic staff of the doctoral study programme includes not less than five doctors, of which at least three are experts approved by the Latvian Council of Science in the branch or sub-branch of science in which the study programme intends to award a scientific degree (if applicable)		
Confirmation that the academic staff of the academic study programme complies with the requirements specified in Section 55, Paragraph one, Clause 3 of the Law on Higher Education Institutions (if applicable)		

Information systems (42483)

Study field	*Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science*
ProcedureStudyProgram.Name	*Information systems*
Education classification code	*42483*
Type of the study programme	*Professional bachelor study programme*
Name of the study programme director	*Andrejs*
Surname of the study programme director	*Bondarenko*
E-mail of the study programme director	*andrejs.bondarenko@gmail.com*
Title of the study programme director	*Zinātnes doktora grāds (Ph.D.)*
Phone of the study programme director	*29713956*
Goal of the study programme	*To prepare highly qualified programming engineers who are able to develop software according to the terms of functionality, quality and resource intensity, contributing to the efficient operation of the company, and creative information systems that ensure their competitiveness in the global labour market.*
Tasks of the study programme	*1. To provide competitive higher education according to the sixth-level professional qualification "Programming engineer" and to prepare specialists with high productivity potential in both the Latvian and global labour markets.* *2. To provide students with knowledge in programme engineering, information systems, database technologies, computer networks, to develop practical skills and understanding of software architecture, development, implementation and maintenance in compliance with the Republic of Latvia and international standards and regulations.* *3. To create and constantly improve such a study environment that provides a systemic view of the current regularities and principles of information and computer system development, as well as a complex and creative approach to solving problems.* *4. To develop students' scientific research work skills, analytical thinking and communication skills, which will allow graduates to successfully find a place in the Latvian and global labour markets, and to promote students' understanding of the importance of lifelong learning, including encouraging them to study at a Master's degree programme.*

Results of the study programme	*1. Independently or in a team, to perform the development, implementation and maintenance of software and/or other ICT solutions in accordance with the ICT industry standards, the approved plan and the technical documentation of the specific solution, as well as to take responsibility for the results of own work and that of the team.* *2. To identify and analyse the needs of customers and develop modern and effective solutions to meet the needs.* *3. To choose, prepare and use programmes, software development tools, one or more programming languages according to technical documentation, as well as document own work process, test work results or intermediate results.* *4. To apply appropriate quality control and risk mitigation measures at the relevant stage of the process, understand and comply with the regulatory framework of the ICT industry, occupational safety, electrical safety, fire safety and ergonomics requirements.* *5. To demonstrate knowledge of several programming languages, work planning and management, understanding of the latest developments and standards in the ICT industry and the ability to adapt to change.*
Final examination upon the completion of the study programme	*Qualification exam and elaboration and defence of Bachelor Paper*

Study programme forms

Full time studies - 4 years - latvian

Study type and form	*Full time studies*
Duration in full years	*4*
Duration in month	*0*
Language	*latvian*
Amount (CP)	*240*
Admission requirements (in English)	*Secondary education*
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional Bachelor's degree in Computer and Information Science*
Qualification to be obtained (in english)	*Software Engineer*

Places of implementation

Place name	City	Address
ISMA University College	RĪGA	VALĒRIJAS SEILES IELA 1 k-6, RĪGA, LV-1019

Full time studies - 4 years - english

Study type and form	*Full time studies*
Duration in full years	*4*
Duration in month	*0*
Language	*english*
Amount (CP)	*240*
Admission requirements (in English)	*Secondary education and at least level B2 of the English language proficiency*
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional Bachelor's degree in Computer and Information Science*
Qualification to be obtained (in english)	*Software Engineer*

Places of implementation

Place name	City	Address
ISMA University College	RĪGA	VALĒRIJAS SEILES IELA 1 k-6, RĪGA, LV-1019

Part time extramural studies - 4 years, 5 months - latvian

Study type and form	*Part time extramural studies*
Duration in full years	*4*
Duration in month	*5*
Language	*latvian*
Amount (CP)	*240*
Admission requirements (in English)	*Secondary education*
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional Bachelor's degree in Computer and Information Science*
Qualification to be obtained (in english)	*Software Engineer*

Places of implementation

Place name	City	Address
ISMA University College	RĪGA	VALĒRIJAS SEILES IELA 1 k-6, RĪGA, LV-1019

Part time extramural studies distance education - 4 years, 5 months - english

Study type and form	*Part time extramural studies distance education*
Duration in full years	*4*
Duration in month	*5*
Language	*english*
Amount (CP)	*240*
Admission requirements (in English)	*Secondary education and at least level B2 of the English language proficiency*
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional Bachelor's degree in Computer and Information Science*
Qualification to be obtained (in english)	*Software Engineer*

Places of implementation

Place name	City	Address
ISMA University College	RĪGA	VALĒRIJAS SEILES IELA 1 k-6, RĪGA, LV-1019

Part time studies - 4 years, 5 months - english

Study type and form	*Part time studies*
Duration in full years	*4*
Duration in month	*5*
Language	*english*
Amount (CP)	*240*
Admission requirements (in English)	*Secondary education and at least level B2 of the English language proficiency*
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	*Professional Bachelor's degree in Computer and Information Science*
Qualification to be obtained (in english)	*Software Engineer*

Places of implementation

Place name	City	Address
ISMA University College	RĪGA	VALĒRIJAS SEILES IELA 1 k-6, RĪGA, LV-1019

3.1. Indicators Describing the Study Programme

3.1.1. Description and analysis of changes in the parameters of the study programme made since the issuance of the previous accreditation form of the study field or issuance of the study programme license, if the study programme is not included on the accreditation form of the study field, including changes planned within the evaluation procedure of the study field evaluation procedure.

The following changes in the indicators describing the study programme have occurred since the issuance of the previous accreditation in the Bachelor's study programme "Information Systems", taking into account the comments and recommendations provided by the accreditation experts during the previous accreditation of the study direction, changes in the demand structure, by updating the study programme according to the needs of the labour market and trends of scientific development, namely, the aim and objectives of the study programme are corrected, the awarded degree and qualification, the programme code, the forms of implementation of the study programme are specified. The name, the amount and duration of the study programme, admission requirements and final examinations remain unchanged. It is planned to start the implementation of the Bachelor's study programme at ISMA Ferghana branch in Uzbekistan. The changes made and their analysis is presented in the table below.

The changes made in the Indicators describing the study programme "Information Systems"

Indicators describing the study programme	Changes made and their analysis	
Form, type, and duration of the study programme	According to the changes in the Law on Higher Education Institutions studies are not conducted in Russian starting from January 1, 2019, only in Latvian and English. Studies are planned in the following forms and types:	
Full-time intramural	4 years, Riga	Latvian and English
Full-time intramural	4 years, Fergana	English
Part-time extramural	4 years and 5 months, Riga	Latvian

Part-time distance	4 years and 5 months, Riga	English
Degree, professional qualification to be awarded	The awarded degree has changed – upon the completion of the study programme, a professional Bachelor 's degree in computer science and informatics will be awarded. On April 5, 2023 PINTSA (Professional education and employment sub-council for tripartite cooperation) meeting approved the new structure of qualifications in the field of Electronic and optical equipment production, information and communication technology, as well as the profession map, according to which the System Analyst is no longer a Bachelor's profession, therefore the qualification to be awarded is Programming Engineer.	
Code of the study programme	In accordance with the regulations of the Cabinet of Ministers of June 13, 2017 No. 322 “Noteikumi par Latvijas izglītības klasifikāciju” (Regulations on Latvian education classification), the code of the study programme "Information Systems" according to the group of educational programmes “Datorsistēmas, datubāzes un datortīkli” (Computer systems, databases and computer networks) has been changed to 47483 (or 0612 according to ISCED-F 2013).	
The aim, objectives and learning outcomes of the study programme have been adjusted according to the comments and recommendations of accreditation experts, the structure of qualifications developed by NEP (Councils of industry experts), the Latvian National Development Plan for 2021-2027 (LNAP 2021-2027), as well as the needs of the labour market and science development trends, harmonizing them with ISMA strategy and the goal of the study direction.		

3.1.2. Analysis and assessment of the study programme compliance with the study field. Analysis of the interrelation between the code of the study programme, the degree, professional qualification/professional qualification requirements or the degree and professional qualification to be acquired, the aims, objectives, learning outcomes, and the admission requirements. Description of the duration and scope of the implementation of the study programme (including different options of the study programme implementation) and evaluation of its usefulness.

The Bachelor 's study programme "Information Systems" fully corresponds to the study direction "Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science", including the acquisition of such skills and competencies as

creative software development according to the terms of functionality, quality and resource intensity, software testing and analysis of results, software architecture design, implementation and maintenance etc., while fostering the development of analytical thinking and communication skills, as well as the understanding of the importance of cooperation and lifelong learning in one's profession, which is fully in line with the aim of the study direction to prepare competent, self-improvement-oriented and innovative-thinking professionals in the field of computer science and informatics who are competitive in the global market.

The name of the study programme is the Bachelor 's study programme "Information Systems", related to the specific activity to be acquired – working with information technologies, data processing and data systems. The study programme is coordinated with the requirements of the Occupational Standard "Software Engineer" (https://registri.visc.gov.lv/profizglitiba/dokumenti/standarti/2017/PS-250.pdf (latvian only)) and the qualification structure of the Electronic and Optical Equipment Production, Information and Communication Technology sector agreed at the December 15, 2021 meeting of the Professional Education and Employment Tripartite Cooperation Sub-Council (PINTSA). In accordance with this Standard and the labour market situation, the aim of the study programme has been formulated, emphasizing professionalism, competitiveness and creative approach to problem solving. The objectives of the programme are set to achieve the aim of the study programme and are oriented towards the coherence of such elements of the study process as curriculum, learning environment, cooperation and scientific research. The planned learning outcomes are aligned with the professional standards and the requirements of knowledge, skills and competencies corresponding to the 6th level of the Latvian Qualifications Framework (LKI), as well as reflect the fulfilment of the programme's aims and objectives.

In accordance with the regulations of the Cabinet of Ministers of June 13, 2017 No. 322 “Noteikumi par Latvijas izglītības klasifikāciju” (Regulations on Latvian education classification), the code of the study programme "Information Systems" according to the group of educational programmes “Datorsistēmas, datubāzes un datortīkli” (Computer systems, databases and computer networks) has been changed to 42483 (or 0612 according to ISCED-F 2013).

Admission of students to ISMA Bachelor’s study program “Information Systems” takes place in accordance with the ISMA Admission Regulations, which are approved annually by ISMA Senate and published on ISMA website www.isma.lv. Every Latvian citizen and non-citizen of the European Union, a citizen of the European Economic Area or a citizen of the Swiss Confederation and a resident of the European Community holding a valid residence permit is entitled to study at ISMA Bachelor’s study program “Information Systems”. The right of foreigners who have not been issued a permanent residence permit to study at ISMA is determined by Section 83. of the Law on Higher Education Institutions. The procedure of the admission of foreigners to ISMA is provided as a scheme in Annex 1.4 (in "Other Annexes").

To study at ISMA Bachelor’s study program “Information Systems”, one must present the document certifying recognized Latvian secondary education or secondary vocational education. As well as for those studying in the English stream, it is necessary to prove their proficiency in the English language which allows them to obtain higher education in Latvia (by presenting an internationally recognized certificate, such as IELTS, Pearson PLC, ETS, etc.).

The duration of studies allows you to optimally learn in compliance with all the requirements of the programme. In accordance with the requirements of the Law on Higher Education Institutions, the full-time studies the programme of amount 240 ECTS is implemented within 4 years or 8 full semesters, which provides for the acquisition of 30 ECTS in each study semester. On the other hand, in part-time studies, 4 years and 5 months or 9 semesters are allocated for the

implementation, arranging the number of credits to be acquired by semesters as evenly as possible. The last study semester is dedicated to only to completion of qualification traineeship and Bachelor’s thesis.

The acquisition of the programme in Latvian is offered in full-time intramural or part-time extramural studies. As the demand for the studies in Latvian is relatively small and sometimes only a few students remain in the student group, they are offered to switch to extramural studies if they wish to retain the Latvian language of studies or to the English language stream, where it will be possible to choose full-time intramural studies or part-time extramural studies. It should be noted that young people in Latvia speak English more and more freely and admit that they want to increase their chances in the labour market, so they often choose to study in English from the start, especially in the IT, where the working language is mostly English. Full-time studies in English are also suitable for foreigners, as it is the only possibility for third-country students to obtain a residence permit in Latvia in order to get education here.

Part-time intramural studies are for working people who want to use the opportunity to communicate with lecturers in person, but classes can only be attended in the evenings and on weekends. It should be noted that this form has not been implemented yet due to the small number of interested parties, but it has been decided to keep it and offer it in the future.

So far, part-time studies have been implemented only in the form of extramural studies, but now the decision has been made to switch to part-time distance learning offer in English, creating the distance learning materials, which will allow one to fully acquire all the necessary knowledge, skills and competences of Software Engineer, as well as will help students by maintaining closer contacts in the distance learning environment.

Studies at the ISMA branch in Fergana, are planned only in full-time intramural form in English in accordance with Uzbekistan's national education system (it does not provide any other forms and types of study). The management of ISMA has decided to add IT studies to the range of study programmes offered at the Fergana branch on the basis of a resolution issued by the President of Uzbekistan on the establishment of an ISMA branch in the city of Fergana, which mentions Informatics and Information Technologies as one of the main fields of Bachelor studies and training of specialists, reflecting the interest and support of the Uzbek government in expanding the ISMA offer.

3.1.3. Economic and/ or social substantiation of the study programme, analysis of graduates' employment.

The study programme "Information Systems" is relevant and important for the development of the national economy of Latvia. In accordance with the goals and directions of action defined in the Latvian National Development Plan for 2021-2027, the study programme offers high-quality and accessible education, preparing specialists who understand the importance of innovative solutions and the application of technologies, as well as the importance of a rationally managed organisational and technological ecosystem, and are able to create and implement such , are focused on offering knowledge-intensive products and services with high added value. Specialists trained by ISMA are ready not only to purposefully realize their competences and accept the challenges of the modern labour market, but also to be responsible in their professional activities. In addition, the implementation of the programme is aimed at international cooperation and involvement in the world science and innovation developments, which "is a precondition for Latvian

scientific excellence. It provides access to new knowledge and resources, and strengthens the country’s reputation for having reliable, capable research organizations and companies." (“ir priekšnosacījums Latvijas zinātnes izcilībai, piekļuvei jaunām zināšanām un resursiem, kā arī Latvijas reputācijai kā valstij ar attīstītu ekonomiku un uzticamām, spējīgām pētniecības organizācijām un uzņēmumiem”) (LNDP 2021 -2027).

The study programme is designed in such a way that, after its graduation, students are oriented towards independent lifelong learning and are able to continue studies at Master’s level.

ISMA regularly conducts graduate surveys so as to find out the progress of former students after graduation, including employment indicators, places of work and further studies. Since the surveys are conducted electronically, using the ISMA alumni database, those graduates went abroad from Latvia also participate in them.

The positions indicated by the graduates are mainly related to the education acquired in the field of ICT – data analyst, system administrator, software tester, IT Project manager, database administrator, programmer in companies of various fields, independent entrepreneurial activity as a systems analyst (previous qualification) is also indicated. Only about 15% of all respondents indicated that their current occupation was not directly related to ICT.

Companies such as Accenture Latvia, SIA “HelloIT”, AS “Latvenergo”, SIA “Construction supervision Bureau”, SIA Comlain, etc. have been mentioned as graduate jobs several times. Examples of graduate employment include:

M.P. – IT Manager, Communications and Information Systems Support Centre, Staff Battalion, National Armed Forces (graduate of 2020)

H.C. – IT specialist, SIA "Būvniecības uzraudzības birojs" (2020)

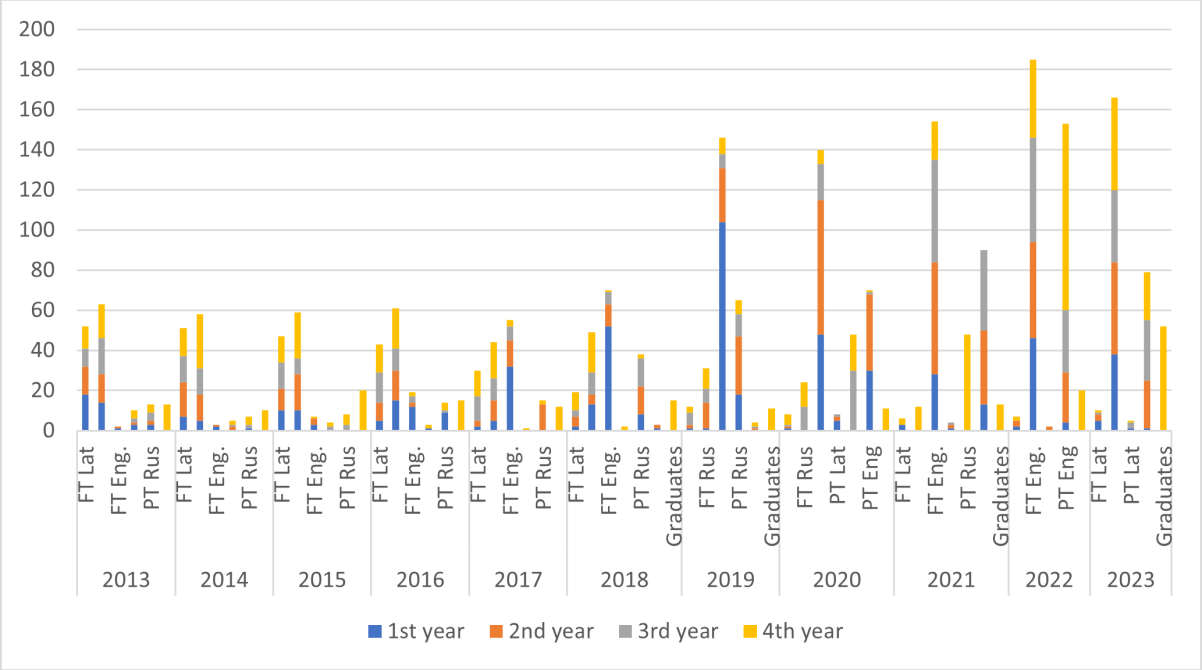
A.P. – ITT (IT un Telecommunications) engineer, AS “Latvenergo” (2022)

V.Z. – Software Specialist, The Information Centre of the Ministry of the Interior , Maintenance and Development Programming Unit

A.C. - IT systems administrator, Bonava Latvija (2023)

3.1.4. Statistical data on the students of the respective study programme, the dynamics of the number of the students, and the factors affecting the changes to the number of the students. The analysis shall be broken down into different study forms, types, and languages.

Evaluating the number of students in the Bachelor 's study programme "Information Systems", it can be seen that the number of students is steadily increasing. The graphic representation of the number of students is presented below, the tables show the number of students and graduates by year, years of studies, forms of studies, languages, and the distribution of full-time students by countries are attached in Annex 3.1.2. Statistics on the students in the reporting period. Full-time intramural studies have been requested throughout the reporting period, with more and more students also choosing part-time studies in recent years. The drop in the total number in 2023 is due to the fact that previous years' data also include winter enrolment students, so it can be said that the growth trend remains.



Dynamics of the number of students in the reporting period 2013-2023.

The number of foreign students has started to rise significantly since 2017-2018. The increase in the demand for the studies in English is related both to the specificity of the IT sector and the desire to be competitive in the labour market, as well as to the fact that according to changes in the Law on Higher Education Institutions, since 2019 studies in Russian are no longer offered, and to the growing number of students from English-speaking countries (for example, India, Pakistan) and other countries. Also, young people in Latvia speak English more and more fluently, so they choose to study in English, especially in the field of IT, where the working language is mostly English.

One of the reasons for the programme's popularity in Uzbekistan is the low level of IT development and the high demand for specialists in this field. Additionally, the already established cooperation with companies in this region allows students to do traineeships in their home country, which increases their chances to successfully find a job after obtaining a diploma. On the other hand, those who spend the entire study period in Riga or use the Erasmus internship offer note the employers' assessment of the experience gained in European companies, which is highly appreciated in Uzbekistan and neighbouring countries.

Also, along with the interest of the Uzbek government in the establishment of the ISMA Branch in Fergana and the support provided to it, information about the quality of studies offered by ISMA has spread both in Uzbekistan and in neighbouring countries, thus a rapid increase in the number of students from this region can be observed. Along with the active operation of the representative office in Ukraine, the number of students from this country has also increased significantly. In addition, existing ISMA students are happy to share their feedback with their relatives and friends, who also choose to study in Riga under the influence of this information. Most foreigners, especially from countries outside the European Union, study full-time, which is related to obtaining a residence permit in Latvia, otherwise they would not be able to study here.

The increase in demand for extramural studies (which was the only implemented part-time studies form so far), in both Latvian and English, can be explained by several factors. Given that this is particularly evident after 2019, when educational institutions and companies switched remotely to many processes as a result of the pandemic, it can be concluded that, as a result, people were assured of the effectiveness of such a form of activity. In addition, the limited activity or even

downtime during the pandemic led to a decline in personal income, so students also looked for additional job opportunities to cover both tuition fees and other expenses. The lack of graduates is also often associated with taking up a job. It should be acknowledged that the possibility of finding a well-paid job without a university degree if there are sufficient professional skills is a clear feature of the IT sector.

Overall, it can be concluded that the bachelor's programme "Information Systems" is quite promising for further development and promotion both in the capital of Latvia and in the Fergana Branch in Uzbekistan, as well as in distance learning. There is demand and the statistics show its stability.

Analysing the reasons for dropping out, it should be noted that many foreign students are not ready for the study process and requirements set by ISMA. Not being able to complete the tasks assigned within the study courses on time, some students decide to leave their studies on their own will, some are exmatriculated due to academic or financial debts.

3.1.5. Substantiation of the development of the joint study programme and description and evaluation of the choice of partner universities, including information on the development and implementation of the joint study programme (if applicable).

3.2. The Content of Studies and Implementation Thereof

3.2.1. Analysis of the content of the study programme. Assessment of the interrelation between the information included in the study courses/ modules, the intended learning outcomes, the set aims and other indicators with the aims of the study course/ module and the aims and intended outcomes of the study programme. Assessment of the relevance of the content of the study courses/ modules and compliance with the needs of the relevant industry, labour market and with the trends in science on how and whether the content of the study courses/ modules is updated in line with the development trends of the relevant industry, labour market, and science.

In accordance with the aim and objectives of the study programme, the content of study courses of the bachelor study programme "Information Systems" has been designed to ensure the preparation of competitive, creative specialists who are able to ensure efficient operation of enterprises by offering functional software solutions, and are oriented towards an independent and continuous process of self-improvement and professional development.

Therefore, the programme includes the courses which develop knowledge, skills and competences in programming, software engineering, computer network architecture, IT project management, information security issues etc. (theoretical and specialisation study courses of professional field), the study courses in the field of entrepreneurship and management (*Business Management*), and for the development of general attitudes and competences (*Critical Thinking, Business Communication etc.*). In addition, the academic staff involved in the implementation of the study

courses are professionals with considerable practical experience: data analysts, programmers, database developers and other highly qualified specialists, so they introduce students to up-to-date latest developments, findings and methods in the field.

The study programme has been elaborated and updated based on the laws and regulations (the Law on Higher Education Institutions, education standard and Occupational Standard), instructions of the accreditation experts during the previous assessment of the study direction, results of student and graduate surveys, results of final theses, topical scientific research, including the research conducted by ISMA academic staff, recommendations of employers expressed in the references from traineeship placements, meetings at conferences, consulting on the development of Bachelor's Theses, reviewing of Bachelor's Theses, and participation in the state examination commissions (Bachelor's Theses defence). Such a comprehensive and diverse approach to the improvement of the study content and process ensures that the content of the study programme corresponds to the requirements of the labour market and the development trends of the relevant industry.

In the development and implementation of the study programme, a logical sequence is followed: in compliance with the requirements defined in the Occupational Standard, labour market demand and the overall aim of the field of study, the aim of the programme and the tasks resulting from it are formulated. The content of the programme (distribution of the study courses) is based on the achievement of the aim and learning outcomes and the criteria defined in the educational standard; accordingly, the content of study courses is designed to implement the acquisition of knowledge, skills, and competences defined in the Occupational Standard, thus ensuring the implementation of the aim of the study programme.

From the first semester of study, students begin to acquire knowledge, skills and competences in accordance with the aim, objectives and learning outcomes of the study programme. For example, the study course "Introduction to programming using Python" lays the foundations for understanding and applying the basic principles of algorithm design and programming, the course "Internet and WEB Basics" develops problem-solving, communication, collaboration and analytical competences in addition to knowledge of how to design, develop and maintain websites in order to achieve the learning outcomes of the programme, including "to identify and analyse the needs of customers and develop modern and effective solutions to meet the needs". Such linkage and subordination are followed in all study courses (see Annex 3.2.5 "Course descriptions").

The content of the study courses is discussed and approved cooperatively by the teaching staff involved in the study programme and the members of the Study Direction Council, thus ensuring cross-curricular coherence and harmonisation of common requirements for the achievement of learning outcomes, as well as eliminating unnecessary duplication of content.

According to ISMA internal regulations, a Council of respective study direction supervises the topicality of the study programme by making corrections to the study plan, the content of the study courses, traineeship assignments, etc. when necessary. The descriptions of the study courses are updated and reviewed in the respective departments at least once a year, usually before the beginning of academic year or more frequently if necessary. ISMA Senate approves the study plan at least once a year.

So as to improve the study programme, several study courses were merged, for example *Mathematical Foundations for Software Engineering* includes the previous courses *Mathematics* and *Discrete Mathematics, Business English and Business Communication* are merged to *Business Communication in English*, but the course *System and Object Oriented Programming* is now being implemented within one rather than two courses and moved from semester 4-5 to semester 3. The latter is also related to one of the main motivations for making changes to the programme – to

ensure that students acquire basic programming skills as soon as possible. Consequently, the basic courses were moved to an earlier study period. Some secondary or advanced courses have been moved closer to the end of the programme, while courses that are essential for developing basic algorithm writing and programming skills have been moved to the early semesters. Advanced courses in programming and courses indirectly related to programming start in the middle of the programme.

Important study courses were introduced in accordance with the requirements of the labour market and current trends in the industry such as *Automata, Computability, and Complexity; API foundations; IT Software project management*. In order to offer students in-depth specialisation in the field of their interest, the study courses are divided into blocks in the elective courses section, so that after acquiring the basic knowledge, the future specialist can focus in depth on what he plans to do in the future. This gives the opportunity to acquire exactly those skills and competences on the final stage of the studies during qualification practice and bachelor's thesis development, thus being able to find and prove your place on the labour market.

3.2.2. In the case of master's and doctoral study programmes, specify and provide the justification as to whether the degrees are awarded in view of the developments and findings in the field of science or artistic creation. In the case of a doctoral study programme, provide a description of the main research roadmaps and the impact of the study programme on research and other education levels (if applicable).

3.2.3. Assessment of the study programme including the study course/ module implementation methods by indicating what the methods are, and how they contribute to the achievement of the learning outcomes of the study courses and the aims of the study programme. In the case of a joint study programme, or in case the study programme is implemented in a foreign language or in the form of distance learning, describe in detail the methods used to deliver such a study programme. Provide an explanation of how the student-centred principles are taken into account in the implementation of the study process.

In the process of implementation of the study programme "Information Systems" various and diverse study methods and forms are used – lectures, seminars, analysis of practical situations, discussions, presentations, independent works individually and in groups, on-line lectures, video lectures, online tests, using various innovative tools and applications such as sli.do, Kahoot!, Socrative.com, etc. In addition to the contact hours, students carry out independent work as planned in the course. It should be noted that in this study programme, according to the qualification to be obtained, practical and self-study tasks focusing on the application of theoretical knowledge in practice, the performance of specific work assignments, the search for solutions are of particular importance. In the professional study courses, specific equipment and software are used to consolidate knowledge and complement theoretical material, thus turning the theoretical material into practical (see Chapter 3.3.1 for details).

Academic staff share their experience in using new and modern teaching methods, acquiring e-

environment opportunities, development of creative thinking, and so on regularly, including the framework of annual conference “Open Learning and Distance Education” organised in January 2023 for the 21st time already.

In order to ensure the topicality of the study content, there are professionals of the specific industry also involved as guest lecturers in the implementation of the study process, who introduce the topicalities of the sector, discuss and analyse particular examples in practical work, as well as consult students during their practical research (see also 3.4.1.).

According to ISMA Rector's order, both in Riga and Fergana 80 academic hours are provided for every 3 ECTS, of which in full-time intramural studies 32 are contact hours on-site, in part-time intramural studies there are 16 contact hours on-site; in part-time distance learning or extramural studies – 1 consultation hour per week for each study course, remote or face-to-face depending on a student's choice.

Lecturers motivate and support students to use various possibilities in planning and organising their independent learning, for example, to use study materials prepared by the lecturers of the respective study course in the electronic training system MOODLE, to use tools and platforms recommended by teaching staff.

ISMA uses the Moodle automated testing tool for all types of student assessment, which enables objective and rapid assessment of the level of competence, set in the standards and greatly simplifies the assessment process. This is due to the reform of the education system and the need to improve the quality of student learning by using modern forms, technologies and teaching methods, as well as by introducing a competency-based approach to education.

The Moodle e-learning system is used for the implementation of the study programme in the form of distance learning, which provides both convenient and visible uploading of materials and opportunities for self-monitoring and assessment of students' achievements. Distance learning studies are conducted in accordance with the ISMA Regulations on Studies (https://www.isma.lv/images/FILES/ISMA_Studiju_nolikums_2020_EN.pdf) and Regulations on Distance Learning (https://www.isma.lv/images/2024/documents_en/ISMA_Tlmcbas_tudiju_nolikums_2023_ENG.pdf), as well as Methodological Guidelines for Lecturers on Distance Learning Studies (https://beta.moodle.isma.lv/course/view.php?id=816) are developed, describing requirements for preparation and improvement of distance learning materials, the specifics of practical work as well as procedures for organisation and evaluation of testing.

The specifics of the Latvian and English language streams are of minor importance because, firstly, the Latvian stream is in relatively low demand and, secondly, the working language in the IT field is English, so the reference materials, terminology and the platforms and tools used are mainly available and used in English.

The content of the study process is planned to be the same in the main location of the programme in Riga and the Fergana branch. In ISMA Fergana Branch the study programme is planned to be implemented in the form of intramural studies, the type of study is full-time, the language of study is English. The content and planning of the study programmes in terms of study semesters are planned to be completely identical to the content and planning of the study programme in Riga. The only difference is that the lecturer of the relevant study course will go to Fergana Branch on a two-week business trip, during which all contact hours will take place in accordance with Clause 20 of the Cabinet of Ministers Regulation No. 305 of June 13, 2023 "Regulations on the State Standard of Professional Higher Education", in which it is determined that in full-time studies, no less than 40 percent of the volume of Bachelor's study programme (excluding the volume intended for

traineeship and the development of Bachelor's paper) consists of contact hours. The management of the study programmes both at the basic study centre in Riga and at the Fergana Branch, is carried out from Riga, and there are no significant differences in the relevant processes.

The teaching staff choose study methods and forms in accordance with the specificity of their study course and its role in the study programme, practical activities within the study process, as well as the principles of student-centred education, the observance of which at the higher education institution gives students additional powers and imposes additional duties and responsibilities. By supporting students to influence their own study process, ISMA's faculty embraces the challenge of creating a modern, open and supportive study process.

When starting work with a particular group of students, a lecturer introduces the planned learning outcomes to the students and discusses the topicality of the study course. Then, taking into account the interests and needs of the students as well as the specifics of the study course, the lecturer agrees with the students on a possible adaptation of the learning process and the assessment system. Before starting the mastering of the study course, students are informed about the conditions to be met during the course of study, how knowledge is assessed and how the final assessment is formed. This set of requirements is also included in the description of each study course.

3.2.4. If the study programme envisages an internship, describe the internship opportunities offered to students, provision and work organization, including whether the higher education institution/ college helps students to find an internship place. If the study programme is implemented in a foreign language, provide information on how internship opportunities are provided in a foreign language, including for foreign students. To provide analysis and evaluation of the connection of the tasks set for students during the internship included in the study programme with the learning outcomes of the study programme (if applicable).

The framework of the study programme “Information Systems” includes traineeship in the amount of 30 ECTS divided into three periods: Semesters 4, 6 and 8 for full time studies; semesters 4-9 for part time extramural or distance learning studies. The tasks, course and reporting requirements are reflected in the traineeship descriptions, they are no different for full time and part time students (see Annex 3.2.4 Descriptions of Study courses). In the mutual cooperation between a student and the chosen supervisor of the bachelor's thesis, the assignments of the qualification traineeship may be supplemented or corrected according to the topic of the Bachelor's Paper to be developed. All traineeship tasks are related to the learning outcomes of the study programme, based on the knowledge, skills and competences specified in the occupational standard and acquired during the study courses. This interrelation and requirements are clearly defined in the traineeship descriptions.

When developing and updating traineeship objectives, one calls for ISMA administrative staff and academic staff (Directors of study programmes, leading lecturers, representatives of the Career Centre, representatives of the International Relations Department, etc.), and local and foreign employers to collaborate to ensure the training of the professionals ready to enter the labour market. For example, N.K., Associate Data Scientist at CTCO and I.B., Member of the Board at DEVNRISE, regularly participate in the discussions of traineeship tasks within the Computer Systems programme. Members of ISMA Students Self-government Body are also invited to

cooperate, and they are also conducting a continuous survey among students about their wishes and opportunities for traineeships in different companies.

The internship tasks involve the gradual acquisition of the knowledge, skills and competences required for the qualification of software engineer, starting with a more general analysis of the company's IT infrastructure and technology in the second year internship, then assessing more specific issues in the third year internship, such as DevOps approaches used, quality assurance processes, and software and architecture design and processes, while the qualification traineeship (4th year) is based on the analysis of IT project management in a company, which requires the broadest and deepest understanding of the effective use of ICT to support business processes. In addition, the tasks of the 4th year internship are specified by the bachelor thesis supervisor in relation to the student's chosen bachelor thesis topic and the specifics of the company's operations.

Before going to traineeship, traineeship workshops – meetings are organised for all the students, where the process of the traineeship, the necessity of traineeship objectives, and preparation of traineeship documents are explained. Students are informed about cooperation partners from Latvia and abroad with whom ISMA cooperates within the traineeship and employment. Students are introduced with the Traineeship section in Moodle, where they can find the information they need about the traineeship and find information on current vacancies.

Every year at the end of November, ISMA organises the international conference “Internship and Employment”, where students get acquainted with potential employers from Latvia and abroad, gain additional knowledge in the field of IT solutions, programming and other latest technologies, the development trends and demand on the Latvian and foreign labour market. At the end of the conference, each student has the opportunity to talk to company representatives, ask any questions they might have, and apply for traineeship. Experience has shown that this conference is very useful as many students gain traineeships in Latvia (in companies like Accenture Latvia, Telus International, Evolution Gaming Latvia, etc.) and in foreign companies (JobTrust in Greece, Aysel-Invest in Uzbekistan, and Clio in Bulgaria).

There is a wide range of traineeship opportunities offered to the students of the study programme “Information Systems”. Traineeship objectives are sent out to companies so they can understand exactly what a student must do during the traineeship. Regular surveys of the companies are conducted, student demand is determined during the traineeship workshops, and relevant interrelation is ensured. Companies also offer permanent jobs to final-year students if they can demonstrate their skills during the traineeship, which proves that students have sufficient theoretical and practical training for the labour market.

Due to the significant support of the Uzbek state to promote the education offered by ISMA, close and successful cooperation with employers in Uzbekistan, such as Fergana Golden Valley Service, Aysel-Invest, Shoirabegim Adras, Matxalikov Abdunabi Fayzi, etc., has been established, which allows students from Uzbekistan and from nearby countries to undertake traineeships closer to their home country. It should be noted that Uzbekistan's state policy is largely focused on attracting foreign capital, introducing European standards in various areas, and therefore companies often already have a well-established international environment and communication in English.

When concluding agreements for the provision of traineeships in the English language stream, the placement site is informed of the need to provide the internship in English, which does not pose any particular problems given the specific nature of the programme in the ICT field, where English is the main language of communication and work. During the internship, the representatives of the Career Centre follow up and communicate with the representative of the traineeship placement and the trainee, solve the situations that arise. There have been cases when a new traineeship placement is sought during traineeship, to offer all the conditions for the full and successful completion of the

traineeship tasks and for the full benefit of the student.

ISMA is continuously developing career opportunities for its students and is looking for new traineeship placements to enable all students to enter the Latvian labour market. For example, in 2022-2023 new cooperation agreements were signed with SIA “Devnrise”, SIA “Komlain” etc., have started cooperation with TELUS International, Apollo Group, SEB Group, Air Baltic. The Head of the Career Centre meets with representatives of local and foreign employers regularly by encouraging them to offer paid traineeships as well. Students are invited to meetings where representatives of the Career Centre and the International Relations Department report on traineeship opportunities regularly, and this information is disseminated through the website, social media, and informative boards on campus premises. The representatives of Students’ Self-government Body are also involved in the dissemination of information.

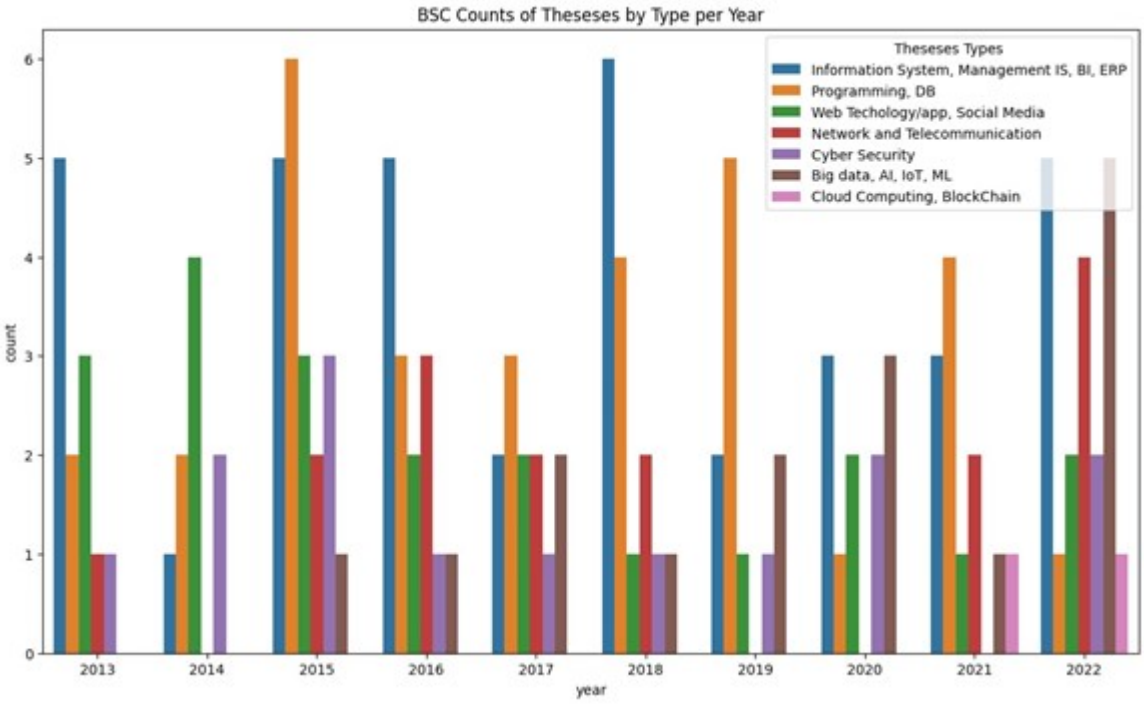
3.2.5. Evaluation and description of the promotion opportunities and the promotion process provided to the students of the doctoral study programme (if applicable).

3.2.6. Analysis and assessment of the topics of the final theses of the students, their relevance in the respective field, including the labour market, and the marks of the final theses.

At the end of the Bachelor's study programme "Information Systems", in order to obtain the Bachelor's degree and professional qualification, students develop and defend Bachelor's theses. Analysing the topics of the students' final theses 2013-2022 and their relevance to the labour market, it should be noted that all defended theses are related to topical issues of information technologies. The topics of the bachelor’s theses can be divided into blocks such as:

- Information systems, management IS, BI, ERP;
- Programming, DB;
- Web technology/app, Social Media;
- Network and Telecommunication;
- Cyber Security;
- Big data, AI, IoT, ML;
- Cloud Computing, Blockchain.

The share of each block by year can be seen in the figure below.



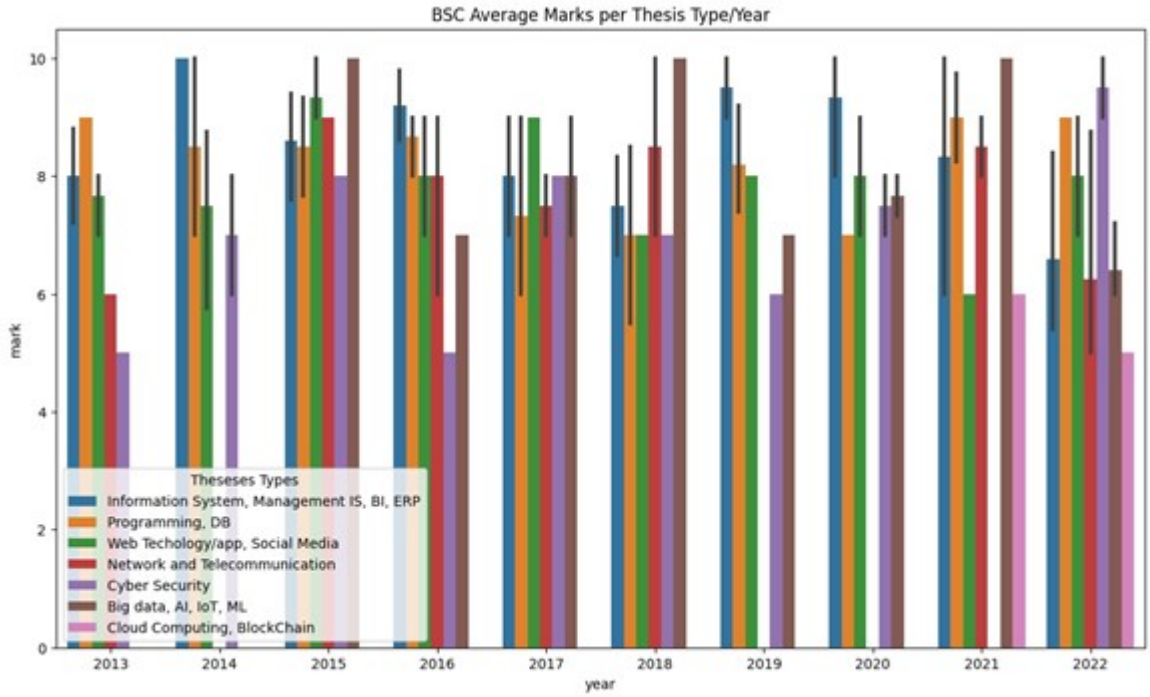
Number of bachelor theses by type per year

As can be seen, students' research interests have changed relatively little over time, with a slight decline in interest in web technologies and social media application development, and increasing popularity in networking, telecommunications and big data.

A large part of the research carried out within the Bachelor's theses and the resulting recommendations are appreciated and actually used in the activities of specific companies, as evidenced by the feedback provided by employers, which is attached to the submitted final theses. Therefore, it is possible to state that ISMA students, choosing the final topic and research objects, are based not only on theoretical knowledge acquired during their studies, but also on practical skills, and are competent to formulate current problems of the ICT industry and to choose the most appropriate tools, methods, programs, software development tools and software language to meet the needs of customers.

In most cases, the interrelation between the chosen topics of the final theses and a current employer or the chosen traineeship placement is assured, however, a student does not always have the opportunity to draft a Bachelor’s thesis based on the company where the qualification traineeship was completed. This problem is urgent, and ISMA Career Centre tries to assist students in solving this issue by addressing employers to enable students to complete traineeships and meet the objectives set by the supervisor to draft the final thesis. Unfortunately, employers are not always forthcoming and willing to provide the necessary information or to allow trainees to work independently, making it difficult for students to see the big picture, which can even lead to changing the topic of the Bachelor's thesis.

However, despite these difficulties, the grades of the defended bachelor theses in the reporting period 2013-2022 can be considered as relatively good (see Fig.).



Dynamics of average Bachelor's thesis grades by themes in 2013-2022.

It should be noted that all submitted final theses were successfully defended during this period and the majority of theses were evaluated with grades 7 and above (out of 10 maximum possible points). As can be seen, the evaluations are fluctuating, and it is not possible to judge the prominence of a block of topics in terms of grades. This allows us to conclude that the students' preparedness in all topics and subjects is equal, and the final result rather depends on the efforts made by each of them and also on the successful choice of the topic related to the specifics of the company's activity, to which the bachelor thesis is dedicated.

3.3. Resources and Provision of the Study Programme

3.3.1. Assessment of the compliance of the resources and provision (study provision, scientific support (if applicable), informative provision (including libraries), material and technical provision, and financial provision) with the conditions for the implementation of the study programme and the learning outcomes to be achieved by providing the respective examples.

The "Information Systems" study programme is implemented in modernly equipped premises in Lomonosova Street 1, where the building has been completely renovated with comfortable, bright, heated and ventilated auditoriums, a library and a cafe. The lecture rooms are equipped with everything necessary for the implementation of modern learning process – computers, projectors, televisions, interactive whiteboards, specialized software, constructors and platforms (for example, Keyestudio constructor, Raspberry-pi, Keyestudio designer kits, Arduino platform, etc.) - which are useful both as aids in conducting lectures and also for evaluating of the learning outcomes. For example, students' presentation skills are trained and tested by presenting group and individual works in many study courses, where projectors and appropriate presentation software are used, as

well as specific tools or software, such as the online platform Google Collab or Jupyter Notebooks / Jupyter Lab, etc. On the other hand, to supplement the theoretical material of the professional study courses, specific equipment and software are used to consolidate knowledge, such as Vensim PLE software in the course "*Mathematic Modelling*"; in the course "*Robotics*" full-time and distance-learning students are introduced to the principles and methods of control electronics design, construction and programming based on the Arduino computing platform; the Keyestudio constructor is used in full-time studies. Therefore, the theoretical material turns into practical.

To provide students with an appropriate environment for high learning outcomes, appropriate facilities are used for different classes; for example, several classrooms are equipped with easy-to-move chairs with attached small desks, making it easy to organize work in pairs or in larger or smaller groups as necessary. There are 4 auditoriums in Riga where every student has access to a computer during the lecture; they have a total of 73 computers.

At Fergana Branch lectures are planned to take place in the renovated historic building – former Fergana Officers' House. This building has been allocated by Fergana City Council for ISMA Fergana Branch, and the repairs have been carried out by ISMA itself. The building has been completely renovated, it is equipped with 11 auditoriums, including 2 computer classes with 21 computers.

ISMA lecturers and students have the opportunity to use the following resources:

- An ISMA library in a total area of 286 m² with a wide range of books and scientific articles which is regularly updated;
- ISMA electronic library contains digital books;
- ISMA cloud service Moodle contains lecture materials, assignments, recorded video lectures;
- International Monetary Fund publications;
- EBSCO – leading provider of research databases, e-magazines, magazine subscriptions, e-book services for libraries of all kinds;
- scopus.com – ISMA computers in the library;
- Students and lecturers are encouraged to use online scientific publication resources, such as Academia. Edu, Research Gate and various other Open Access scientific databases and platforms such as Google Scholar, Index Copernicus, Open Research Library, etc.
- ISMA students have the opportunity to familiarize themselves with the regular online editions of the ISMA scientific magazine "Economics and Education", as well as theses and abstracts of ISMA conferences "Information Technologies and Management" and "Open learning and education". Also, ISMA website provides links to publications and monographs of partner institutions where the works of ISMA faculty members and students are published, for example, a link to the international monograph "Intellectual Challenges to Economic Globalism" and others.
- ISMA is the official partner of the publishing house "Baltija Publishing" http://www.baltijapublishing.lv/ 4 times a year ISMA publishes the International Scientific Journal "Economics&Education", which is indexed in Copernicus, as well as in other popular databases of scientific articles (see http://www.baltijapublishing.lv/index.php/econedu/indexed). One free publication per academic year is available to all ISMA faculty and students.

The range of literature available in the university library, which most directly relates to the needs of the "Information Systems" study programme, is presented in the table below.

Available literature for the study programme "Information Systems"

Field	Name	Number of items	By languages		
			Latvian	English	Other
Computers. Computing systems. Informatics. Cryptography	66	145	11	58	76
Computer architecture and operating systems	18	34	14	0	20
Programming	142	258	36	11	211
Databases. Data structures and algorithms	58	127	7	0	120
Networks and systems	61	107	15	9	83
Artificial Intelligence	28	42	0	1	41
Mathematics and statistics	117	186	32	11	143
Management science	538	688	135	95	458
Business	304	406	190	28	188
Law	284	519	127	12	380
Social Sciences	417	564	195	42	327
Scientific research	27	33	2	5	26
Total:	2060	3109	764	272	2073

More information about the infrastructure and material and technical provision can be found in 2.3. Resources and Provision of the Study direction.

3.3.2. Assessment of the study provision and scientific base support, including the resources provided within the framework of cooperation with other science institutes and higher education institutions (applicable to doctoral study programmes) (if applicable).

3.3.3. Indicate data on the available funding for the corresponding study programme, its funding sources and their use for the development of the study programme. Provide information on the costs per one student within this study programme, indicating the items included in the cost calculation and the percentage distribution of funding between

the specified items. The minimum number of students in the study programme in order to ensure the profitability of the study programme (indicating separately the information on each language, type and form of the study programme implementation).

ISMA is a private HEI founded by a legal entity; therefore the tuition fees paid by students are the main source of funding for the implementation of the study process. As a private higher education institution, ISMA does not receive state funding for its activities, and study programmes are financed from the obtained tuition fees. Funding from projects, including international ones, and funding from promoting mobility within the Erasmus+ programme can be mentioned as additional activity-promoting assets. Also, the academic staff and students, who are involved in ISMA activities, carry out research commissioned by the private business sector, provide consultations, and organize trainings within the framework of informal education, including international ones; the ISMA Career Centre offers various study courses apart from formal studies. The obtained savings are used to ensure the operation of the university, including the implementation of study programmes.

Permanent sources of own revenue of the university are:

- revenues from tuition fees (75%);
- revenues from training courses (6%);
- revenues from contract research (5%);
- revenues from other scientific activity (11%);
- revenues from renting premises, utilities and other services (3%).

On the other hand, the tuition fee is covered from the funds of natural and/or legal entities, it consists of: personal funds of the student, funds of the student's employer, study loan with a guarantee provided on behalf of the state, commercial credit, funds of sponsors.

When planning the distribution of funding for study programmes, the ISMA Board takes into account certain parameters: ensuring administrative-economic activity, the functionality of the used premises; ensuring the study process with teaching aids; ensuring the social life of the university (student events, student involvement, Freshman party, traineeship conferences, ISMA festival, etc.); social benefits for students (discounts, budget places, etc.), renewal and replenishment of teaching equipment (computer security, computer software, etc.), promotion measures (promotion of study programmes, including in social networks, Olympiads, laboratory days, etc.), the necessary funds are planned in the accounting department in accordance with study directions, study programmes and ensuring the operation of the university in general; and financial support is distributed according to the order of the Rector.

Analysing the distribution approach to calculations and planning, it can be said that a mixed approach is applied when savings are planned based on planned income, on the number of students and the projected number of enrolled freshmen before the start of enrolment. Later, these data are compared with the actual number of students in the program, and the distributed funding for the study direction and the programmes is adjusted. Taking into account the strategic development plans, savings are made, amounting to 10% of the total revenue

Information about the costs in the study programme, indicating the items included in the cost calculation, is summarized in the Tables ....

Costs for a full-time student group (8 students) in Riga for the study programme “Information

Systems”

Type of costs	Units	Amount	Payment per unit	Total costs (EUR)	%
Contact hours (118 ECTS)	ac.hour	1888	20 EUR/ac.h.	37760	48,1
Testing of study courses	piece	35	0,35 ac.h.per 1 stud.	1225	1,6
Traineeship defence	piece	24	0,35 ac.h. per 1 stud., 2 commission members	336	0,4
Supervisory of coursework	piece	24	2 ac.h. per 1 stud.	960	1,2
Defence of coursework	piece	24	0,35 ac.h. per 1 stud., 2 commission members	336	0,4
Supervisory of bachelor thesis	piece	8	8 ac.h. per 1 stud.	1280	1,6
Bachelor thesis review	piece	8	1 ac.h. per 1 stud.	160	0,2
Bachelor thesis defense	piece	8	0,5 ac.h. per 1 stud., 5 commission members	400	0,5
Administration and infrastructure costs	piece	8	Depending on the ISMA stud. number, based on the results of the previous academic year	36006,4	45,9
Total for a group of 8 students for the entire study period				**78463,4**	100,0
Per 1 student, total study period				**9807,93**	

Planned costs for a full-time student group (20 students) at ISMA Fergana Branch for the study programme "Information Systems"

Type of costs	Units	Amount	Payment per unit	Total costs (EUR)	%
Contact hours (118 ECTS)	ac.hour	1888	20 EUR/ac.h.	37760	15,7

Testing of study courses	piece	35	0,35 ac.h. per 1 stud.	4900	2,0
Traineeship defence	piece	60	0,35 ac.h. per 1 stud., 2 comission members	840	0,3
Supervisory of coursework	piece	60	2 ac.h. per 1 stud.	2400	1,0
Defence of coursework	piece	60	0,35 ac.h. per 1 stud., 2 comission members	840	0,3
Supervisory of bachelor thesis	piece	20	8 ac.h. per 1 stud.	3200	1,3
Bachelor thesis review	piece	20	1 ac.h. per 1 stud.	400	0,2
Bachelor thesis defense	piece	20	0,5 ac.h. per 1 stud., 5 commission members	1000	0,4
Transportation costs	person	37	1500 EUR	55500	23,1
Business trip costs	day	498	40 EUR	19920	8,3
Administration and infrastructure costs	piece	20	Depending on the ISMA stud. number, based on the results of the previous academic year	113840	47,3
Total for a group of 20 students for the entire study period				**240600**	100,0
Per 1 student, total study period				**12030**	

Costs for a part-time extramural student group (3 students) at ISMA bachelor study programme "Information Systems"

Type of costs	**Units**	**Amount**	**Payment per unit**	**Total costs (EUR)**	**%**
Consultations	piece	35	0,25 ac.h.per 1 stud.	11200	38,1
Testing of study courses	piece	153	0,25 ak.st. uz 1 stud.	2295	7,8

Traineeship defence	piece	9	0,35 ac.h. per 1 stud., 2 comission members	126	0,4
Supervisory of coursework	piece	9	2 ac.h. per 1 stud.	360	1,2
Defence of coursework	piece	9	0,35 ac.h. per 1 stud., 2 comission members	126	0,4
Supervisory of bachelor thesis	piece	3	8 ac.h. per 1 stud.	480	1,6
Bachelor thesis review	piece	3	1 ac.h. per 1 stud.	60	0,2
Bachelor thesis defense	piece	3	0,5 ac.h. per 1 stud., 5 comission members	150	0,5
Administration and infrastructure costs	piece	3	Depending on the ISMA stud. number, based on the results of the previous academic year	14634	49,7
Total for a group of 3 students for the entire study period				**29431**	100,0
Per 1 student, total study period				**9810,33**	

Costs for a part-time distance learning student group (5 students) at ISMA bachelor study program "Information Systems"

Type of costs	**Units**	**Amount**	**Payment per unit**	**Total costs (EUR)**	**%**
Updating of study materials	ECTS	177	20 EUR/ac.h.	9440	19,1
Administration and infrastructure costs	stud.	5	Depending on the ISMA stud. number, based on the results of the previous academic year	24390	49,3
Consultations	piece	35	1 academic hour per week	11200	22,6
			Total permanent costs	45030	91,0

Testing of study courses	piece	153	0,25 ac.h.per 1 stud.	2295	4,6
Supervisory of coursework	piece	15	2 ac.h. per 1 stud.	600	2,0
Defence of coursework	piece	15	0,35 ac.h. per 1 stud., 2 comission members	210	0,7
Traineeship defence	piece	15	0,35 ac.h. per 1 stud., 2 comission members	210	0,4
Supervisory of bachelor thesis	piece	5	8 ac.h. per 1 stud.	800	1,6
Bachelor thesis review	piece	5	1 ac.h. per 1 stud.	100	0,2
Bachelor thesis defense	piece	5	0,5 ac.h. per 1 stud., 5 comission members	250	0,5
			Total variable costs	4465	9,0
Total for a group of 5 students				**49495**	
Per 1 student, total study period				**9899,00**	

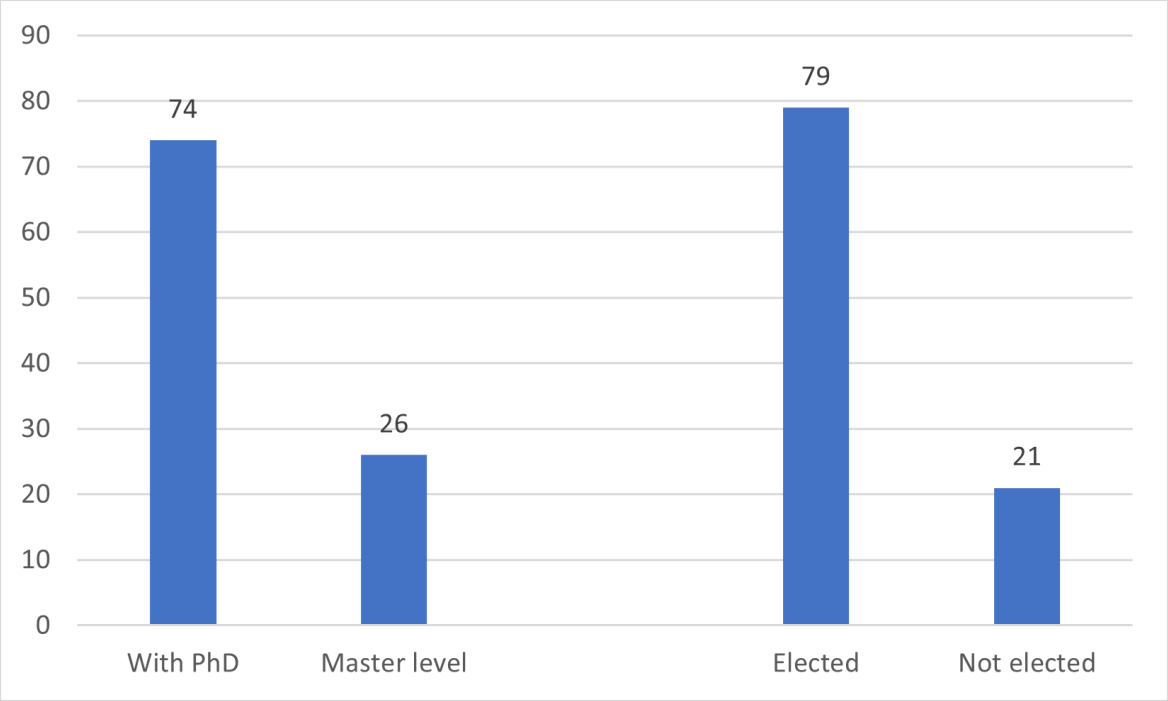
To ensure the profitability of the programme the minimum number of students in the study programme, regardless of the language of studies, is 8 students in full-time studies in Riga and 20 students in Fergana, 3 students in part-time extramural studies, and 5 students in distance learning studies.

3.4. Teaching Staff

3.4.1. Assessment of the compliance of the qualification of the teaching staff members (academic staff members, visiting professors, visiting associate professors, visiting docents, visiting lecturers, and visiting assistants) involved in the implementation of the study programme with the conditions for the implementation of the study programme and the provisions set out in the respective regulatory enactments. Provide information on how the qualification of the teaching staff members contributes to the achievement of the learning outcomes.

In accordance with Article 27 of the “Law on Higher Education Institutions”, the academic staff of ISMA is composed of: professors, associate professors, docents, senior researchers, lecturers, researchers, assistants. ISMA academic positions are filled in accordance with the legislation of the

Republic of Latvia, through the election procedure stipulated by ISMA's "Regulations on election into academic positions". The Regulations include the qualification and eligibility criteria for the teaching staff in accordance with Articles 28, 30, 32, 36, 37, 38, and 40 of the "Law on Higher Education Institutions".
The ratio of lecturers with doctoral degrees is appropriate for the implementation of the study programme, 74% of all involved teaching staff have a PhD, 26% have a Master's degree. The overall percentage distribution of the teaching staff involved in the implementation of the programme can be seen in Figure below.



Percentage distribution of the teaching staff in the programme

3 experts of the LCS – V.Gopejenko, A.Bondarenko and V.Riashchenko are also involved in the implementation of the study programme.
As it can be seen from the CVs of the teaching staff in Annex 2.3.2, the teaching staff involved in the study programme read those courses in which they have significant practical experience. For example, A. Bondarenko is a data scientist and a leading Java developer; J.Čižovs is a computer systems designer, scientific engineer, editorial board member; J.Shamshin is the CEO of IT Academy and has provided computer and information systems maintenance in various companies; R. Kopitov has been the Head of the analysis department in a manufacturing company. J.Chaiko regularly participates in and leads ICT research projects, such as "Future communications with higher-symmetric engineered artificial materials" (2019-2023), etc.
Involving practitioners in the learning process is one of the priorities of the study programme, as it is a significant competitive advantage that ISMA students appreciate. Therefore, guest lecturers are regularly invited, not only for learning a full study course, but also for discussing individual topics. Some of such lectures and seminars are organized for specific groups of students within a certain study course; some are widely available to anyone interested at ISMA. Important examples for the study programme "Information Systems" can be mentioned:

- N. Kņiga (Associated data scientist of SIA CTCO) "Neural network models for risk assessment of financial operations";
- Amit Joshi - IT Project Manager and iOS Developer with significant experience, regularly attends relevant study classes;
- V. Zeliksone (Programmer of the Software Maintenance and Development Department of the IeM Information Center) "Preparation of statistical information based on data in information

systems";

- M. Krasikovs (Scala developer, OnAir Entertainment) "Building Data-Intensive, Distributed Applications and Systems";
- I.Babičs (member of the board of SIA "DEVNRISE") "Custom WEB Development";
- M.Aleksandrovs (Cyberadviser OÜ Banking, Security consultant and Penetration Tester) regularly informs about news in the security of computers, data, computer networks and applications;
- Regular seminars in collaboration with the machine learning excellence centre on big data processing, ML model development, Business rule processing for customer segmentation (DWH, R-studio, Power BI, SAP HANA).

The teaching staff takes an active role in the improvement of the study programme and the updating of study courses and methodological work, and are also continuing their own self-improvement through further education courses, seminars, further studies, participation in scientific research, conferences, and projects.

The results of scientific activity are incorporated into the study courses, introducing students to the latest trends in the industry. ISMA offers support for raising the qualification of the teaching staff, for example by providing financial support for participation in conferences and doctoral studies, organising courses and seminars for staff on-the-spot, at ISMA.

3.4.2. Analysis and assessment of the changes to the composition of the teaching staff over the reporting period and their impact on the study quality.

The composition of the leading teaching staff involved in the implementation of the study programme "Information Systems" is generally relatively stable, but since the previous accreditation of the study direction, of course there have been changes in both the composition of the teaching staff and in the numerical indicators (see the study plan in Annex 3.2.4.). The proportion of unelected teaching staff involved in the programme has increased slightly compared to 2012, due to the increasing demand from students and employers for stable practical work skills and competences that can best be provided by industry professionals. However, the programme also has a strong academic base, thanks to the fact that of the 19 faculty, 14 have a PhD, which can support students in their scientific research activities.

Several ISMA academic staff members continue to work in the study programme for many years, for example, V.Gopejenko, J.Čaiko, R.Kopitovs, A.Mrochko. However, a number of teaching staff members with considerable experience in teaching and practical work have also been involved, for example, A.Bondarenko, A.Berežnojs, J.R.Kalniņš, O.Pozdņakova.

Overall, the changes in the composition of the teaching staff are positive and have been made in order to ensure the improvement of the quality and competitiveness of the study programme.

3.4.3. Information on the number of the scientific publications of the academic staff members, involved in the implementation of doctoral study programme, as published during the reporting period by listing the most significant publications published in Scopus or WoS CC indexed journals. As for the social sciences, humanitarian sciences, and the science of art, the scientific publications published in ERIH+ indexed journals or peer-reviewed monographs may be additionally specified. Information on the teaching staff

included in the database of experts of the Latvian Council of Science in the relevant field of science (total number, name of the lecturer, field of science in which the teaching staff has the status of an expert and expiration date of the Latvian Council of Science expert) (if applicable).

3.4.4. Information on the participation of the academic staff, involved in the implementation of the doctoral study programme, in scientific projects as project managers or prime contractors/ subproject managers/ leading researchers by specifying the name of the relevant project, as well as the source and the amount of the funding. Provide information on the reporting period (if applicable).

3.4.5. Assessment of the cooperation between the teaching staff members by specifying the mechanisms used to promote the cooperation and ensure the interrelation between the study programme and study courses/ modules. Specify also the proportion of the number of the students and the teaching staff within the study programme (at the moment of the submission of the Self-Assessment Report).

Completely understanding the importance of teaching staff cooperation, ISMA implements this collaboration in three blocks:

1. Cooperation of the teaching staff in the development and updating of study programmes and study course descriptions.
2. Cooperation of the teaching staff in the improvement of methodological work.
3. Collaboration of the teaching staff in scientific research creativity.

To ensure interdisciplinary relation and harmonisation of common requirements for the achievement of learning outcomes, as well as to eliminate an unnecessary overlapping of the study content, the content of the study courses is regularly discussed and approved by the lecturers and the Study Direction Council members involved in the study programme. This is done at Council meetings, departmental meetings, and also during individual informal meetings of the teaching staff where lecturers share information and coordinate their work and study courses. Within the framework of the study programme, the sequence and continuity of study subjects in the study process shall be evaluated so that the knowledge and skills acquired by students are successfully strengthened and expanded.

Teaching staff regularly shares their experience in using new, modern teaching methods, developing e-environment opportunities, developing creative thinking, and similar issues during the annual “Open Learning and Distance Education” conference, which was held for the 21st time in January 2023. During the conference one can learn about the latest research and discoveries from the presentations of the speakers, as well as meet in-person with colleagues from different Latvian and foreign educational institutions and other organizations.

Starting in April 2019, ISMA has launched a new initiative, which is also aimed at promoting the

collaboration of lecturers in their pedagogical and methodological work. The first *Erasmus+ Staff Teaching and Training Week at ISMA University* took place in 2019. In an informal setting, participants had an opportunity to discuss current issues in higher education, develop recommendations for student mobility, and share their experience on the specificities of implementation of the study process in Ukraine, Lithuania, Portugal, and other countries. The ISMA initiative has received great response from the teaching staff. Unfortunately, the pandemic and the war in Ukraine temporarily forced exchange programs to be implemented remotely, but in 2023 this initiative is continued by inviting guest lecturers to Riga to conduct seminars and lectures for students and teachers on current topics in various sectors.

The cooperation of the academic staff in the field of scientific creativity is implemented in accordance with the relation of ISMA study programmes implemented in the study direction "Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science". Joint scientific research covers such areas as machine learning, big data technologies, cloud computing, ICT security, as well as other research related to the specifics of the study programmes implemented within the direction. Full information on the research conducted by the teaching staff can be found in the biographies of the lecturers (Annex 2.3.2) and in Annex 2.4.2, where information on the scientific research of the teaching staff is collected.

At the time of submission of the self-evaluation, in 2023 there are 260 students in the Bachelor's study programme "Information Systems" and 19 teaching staff members are involved in the implementation of the programme, therefore, there are 14 students for 1 lecturer, excluding the invited guest lecturers.

Annexes

III - Description of the Study Programme - 3.1. Indicators Describing the Study Programme		
Sample of the diploma and its supplement to be issued for completing the study programme	3.1.1.Diploma_IS_Eng.docx	3.1.1.Diploms_paraugs_IS_LV.docx
For academic study programmes - Opinion of the Council of Higher Education in accordance with Section 55, Paragraph two of the Law on Higher Education Institutions (if applicable)		
Compliance of the joint study programme with the provisions of the Law on Higher Education Institutions (table) (if applicable)		
Statistics on the students in the reporting period	3.1.2.Statistics_Students_IS.xlsx	3.1.2.Studejoso_statistika_IT_Bak.xlsx
III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof		
Compliance with the study programme with the State Education Standard	3.2.1.Compliance_Education_Standard_IS.docx	3.2.1.Atbilstiba_izglītibas_standartam_Bak_IT.docx
Compliance of the qualification to be acquired upon completion of the study programme with the professional standard or the requirements for professional qualification (if applicable)	3.2.2.Compliance_occup_standard_IS_2024.xlsx	3.2.2.Atbilstība_prof_standartam_IS_2024.xlsx
Compliance of the study programme with the specific regulatory framework applicable to the relevant field (if applicable)		
Mapping of the study courses/ modules for the achievement of the learning outcomes of the study programme	3.2.3.Mapping_IS.docx	3.2.3.Kartejums_IS.docx
The curriculum of the study programme (for each type and form of the implementation of the study programme)	3.2.4.Studiju_plans_Bak_IS.xlsx	3.2.4.Studiju_plans_Bak_IS.xlsx
Descriptions of the study courses/ modules	3.2.5.Descriptions_study_courses_IS.docx	3.2.5.Studiju_kursu_apraksti_IS.docx
Description of the organisation of the internship of the students (if applicable)	3.2.6.Traineeship_regulations.doc	3.2.6.Prakses_nolikums.doc
III - Description of the Study Programme - 3.4. Teaching Staff		
Confirmation that the academic staff of the doctoral study programme includes not less than five doctors, of which at least three are experts approved by the Latvian Council of Science in the branch or sub-branch of science in which the study programme intends to award a scientific degree (if applicable)		
Confirmation that the academic staff of the academic study programme complies with the requirements specified in Section 55, Paragraph one, Clause 3 of the Law on Higher Education Institutions (if applicable)		