Expert group joint opinion

Evaluation Procedure: Assessment of Study Field

Higher Education Institution: Vidzeme University of Applied Sciences

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

Experts:

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Summary of the Assessment of the Study Field and the Relevant Study Programmes

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The study field of Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science (study field) and the relevant study programmes (Information Technologies 42484; Mechatronics 42523; Cybersecurity Engineering 47482; Virtual reality and smart technologies 47484 and Socio-technical systems engineering 51482 joint with Rēzekne Academy of Technologies) fully comply with the main directions of the strategic development of the higher education institution and meet the needs and the development trends of the society and national as well as local economy. Notably, Vidzeme University of Applied Sciences (ViA) is cooperating closely with the local governmental bodies, local and international companies that offer up-to-date content and industry trends that meet labor market needs.

ViA has successfully implemented a development strategy, including a thorough quality assurance mechanism, as well as thoroughly performed SWOT analysis of the study field from several points of view. Most importantly, all of the findings are planned to be incorporated into the strategic development plan of the institution, although it was under construction at the time of the assessment visit. The management structure of the study field and the corresponding study programmes is oriented towards the development of the study field, decision-making takes place efficiently, the support provided by the administrative and technical staff ensures all the needs of the study programmes corresponding to the study field.

The teaching staff is elected in accordance with state and university regulations.

The informative bases provision is met by the library which offers physical books. The most important items within each course are renewed on a cyclic basis, while the most current items of additional literature are purchased on a regular basis. Books are purchased in accordance with ViA Library book ordering and usage procedure.

There are two main information systems used to access the information necessary for the study process, i.e. Moodle used as the primary platform for learning content management and LAIS used for study administration system.

The financial support is strictly planned by expenses per each student. Specific funds for development are allocated to the Faculty of Engineering . A fair amount of funding of research is brought from research projects.

Experts have identified many strengths.

- ViA has an appropriate environment, necessary resources, equipment that are offered for students, and are sufficient for studies.
- ViA provides a user friendly atmosphere, inclusive community, and staff are open to questions and discussions.
-ViA provides an inclusive environment adapted for people with physical disabilities.
- ViA academic staff are motivated, committed to their work, follow field and direction trends, update content regularly, and apply different teaching methods for full-fledged course studies.
- ViA has established a strong cooperation network with Latvian and international partners ensuring compliance of study programs objectives with job market requirements and research level compliance with ICT industry trends.
- Most of the ViA study programs are professional and include students internship in partners companies and organizations thus ensuring compliance with job market requirements.
- ViA joined the EUDRES initiative of the European University model thus enabling joint study courses and programs, additional mobility of students and lecturers and joint research opportunities.
- Academic integrity is in the forefront of the strategy of the institution.
- High proportion of students working in the industry.

Experts also identified several weaknesses.
- Dropout rate is very high and the study field needs a more aggressive and pro-active strategy to reduce it.
- The graduation rate is low.
- There is a low proportion of elected academic staff.
- Study programmes have large amounts of small credit point study courses within study semesters applying broadness approach instead of deepness, especially in master programmes.
- There is a low involvement of students and teaching staff in Erasmus+ mobility programmes.
- There are rather big differences in the research activity of individual academic staff members.
- There is missing cooperation within the joint programme, which would ensure continuous active involvement of doctoral students, mostly the study courses are divided and meetings once a month organized.
- Doctoral study programme lacks proactive management and universal procedure of checking progress of students.

Professional bachelor’s study programme “Mechatronics” 42523 was licensed in 2017. The program’s accreditation is valid till 31.12.2023. Students have been admitted to the programme since 2018. 40 students were admitted to the programme for studies in latvian. Studies in English were not implemented during the reporting period. Duration of the study is 4 years. Graduates of study program receive Professional bachelor's degree in mechatronics and qualification - Mechatronics Engineer.
Professional bachelor’s study programme “Information Technologies” 42484 was licensed in 2015. The program’s accreditation is valid till 31.12.2023. During the reporting period, 580 students were admitted to the programme. During the reporting period, 211 students have graduated from the programme. Duration of the study is 4 years in full-time studies and 5 years in part-time studies. Graduates of study program receive a professional bachelor's degree in information technology and qualification - Software Engineer.
Professional master study programme “Cybersecurity Engineering” was licensed in 2018. The program’s accreditation is valid till 31.12.2023. Students have been admitted to the programme since 2018. During the reporting period, 40 students were admitted to the programme. During the reporting period, the first students graduated from the programme in June 2020. In the last three years, 11 students have graduated from the programme. Duration of the study is 2 years. Graduates of study programme receive a professional master's degree in information technology.
Professional master study programme “Virtual reality and smart technologies” 47482 was licensed in 2018. The program’s accreditation is valid till 31.12.2023. Students have been admitted to the programme since 2018. During the reporting period, 26 students were admitted to the programme. During the reporting period, the first students graduated from the programme in June 2020. In the last three years, 15 students have graduated from the programme. Duration of the study is 1 year. Graduates of study programme receive a professional master's degree in virtual reality and smart technologies.
Doctoral study programme “Socio-technical systems engineering” 51482 are joint with Rēzekne Academy of Technologies and was licensed in 2011. The program’s accreditation is valid till 31.12.2023. During the reporting period, studies were conducted only in Latvian. During the reporting period, the average number of students enrolled per year is 2, the average number of students in the programme - 6. In total 3 students have obtained the degree of Doctor of Science, successfully defending their doctoral theses. Duration of the study is 3 years. Graduates of study programme receive a doctor of science (Ph.D.) in Engineering and Technology.

I - Assessment of the Study Field

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1.1 Management of the Study Field

Analysis

1.1.1.

ViA offers 17 study programmes at undergraduate, postgraduate and doctoral level. ViA study programmes are implemented in five study fields which are combined in two faculties – the Faculty of Engineering and the Faculty of Society and Sciences (c.f. Annex 1 of the SAR).

According to the 2022 declaration of the Cabinet of Ministers on strategic specialization of universities, the areas of strategic specialization of the institution are engineering and technology (thematic area of education - computer science), and social sciences (thematic areas of education - information and communication sciences, business and administration, personal services) (SAR p.6). Therefore the study field and study programmes subject to evaluate in this report are fully in line with the governmental expectations. The interconnection of the study programmes included in the study field is clear and logical.

The study field of Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science and the relevant study programmes fully comply with the main directions of the strategic development of the higher education institution and meet the needs and the development trends of the society and national as well as local economy. Notably, ViA is cooperating closely with the local governmental bodies: Valmiera Municipality and Valmiera Development Agency, and participated in Valmiera's strategic development planning for 2030, taking into account ViA's study and research offer and development opportunities. The crucial fields of this strategy are, among others, circular economy, sustainable development and IT fields. These areas are all included in the Valmiera Industrial Territories Development Plan, and ViA is developed study programmes in this study field to fulfill the relevant tasks of preparation of a highly qualified workforce, provision of lifelong learning and retraining of the workforce, and support the development of new companies by innovations. Therefore the overall aims concerning local needs are very well defined and they are also very clearly explained in SAR (p.6).

1.1.2.

It is well evidenced in the SWOT analysis provided in the Self-assessment Report (SAR pp.17-18), that the ViAthoroughly studied and evaluated the strengths, weaknesses, opportunities and threats of the study field from several points of view. Major strengths include the high demand for graduates in the labor market and the fact that study programmes well reflects these needs. The involvement of industry professionals in the study process and the development of the study programmes are also of great importance. A recent advantage is that ViA is involved in the European University Alliance programme, which is the flagship programme of the European Education Area. Although the number of students greatly varies among the study programmes, for several programmes it is a clear strength that small groups of students can receive individual attention and educational approach.
The same data of low level of enrolment and high drop-out rate, however, indicate a weakness as well: the number of students is not increasing and remains at a borderline of existence in case of some study programmes.Further weaknesses arise from the financial circumstances, such as low remuneration for academic staff, making it difficult to attract high-level professionals and make them stay, as well as it can cause a risk of “burnout” of lecturers; high workload of industry

professionals in their basic work, and limited financial opportunities for the involvement of international lecturers and local highly qualified specialists in the study process. The restricted financial support also yields outdated IT infrastructure, which can be of great importance in a few years.
Overall the study is realistic and the drawbacks are also realistically reported. Most importantly, all of the findings are planned to be incorporated into the strategic development plan of the institution, although it was under construction at the time of the site visit. Having that said, the efforts to mitigate the very high drop-out rate need further elaboration.

1.1.3.

Since ViA is a governmental institution, it follows the regulations of the derived person status (SAR pp.6-7.) The legal operation is regulated by the ViA Constitution. The high level principles of management are democracy and collegiality, and these are well reflected in the decision making procedures provided in detail in SAR (pp.7-8). The decision making mechanism is clear for every participant of the study process, as experts have learned from the documentation and the assessment visit.
ViA established a classical, yet solid management structure of this study field, where the roles and responsibilities are well defined and the workflow is effective. This is adequately described in SAR (pp.7-8) and in Annex 3 of the SAR.
The highest management body of the ViA is the Constitutional Assembly, which, among other tasks, approves the Constitution of ViA, elects and can initiate the removal of the Rector, approves the annual reports on the performance of the ViA. elects the members and approves the regulations of the Senate, forms and elects the Audit Commission, and the Academic Arbitration Court, and makes decisions on strategic questions. The Constitutional Assembly is elected for three years. The Constitutional Assembly consists of 40 persons, of whom 24 representatives are elected from the academic staff, 8 representatives are elected from the general staff, and 8 representatives are elected from among the students.
Another, more operational managerial body is the ViA Council - a collegial highest decision-making body of the ViA, consisting of 5 members of the Council, which is responsible for the sustainable development, strategic and financial supervision, also at operational level. The operation of the ViA Council is defined by the ViA Constitution, taking into account the regulatory enactments of the Republic of Latvia and the corresponding regulations of the ViA Council.
The classical decision-making body is the Senate, responsible for the excellence, development and compliance with internationally recognized quality standards of higher education, research and creative activities. The Senate regulates and supervises ViA's academic, creative and scientific activities. The Senate is elected for three years, and the election and operation are determined in accordance with the Law on Higher Education Institutions, as well as the regulations of the Senate, which are approved by the Constitutional Assembly. The Senate consists of 15 senators: 11 representatives of the academic staff (73%), three representatives of the students (20%) and administrative staff (rector) - (7%). Although the composition is adequate - as it is based on the governmental law - it is worth mentioning that the administrative staff of the university is insufficiently represented in this decision making body, therefore their specific needs must be taken into account indirectly in the Senate.
The highest official person of the ViA, as in every higher education institution, is the Rector, who implements the general administrative management of the institution and also represents the ViA. In accordance with the goals set in the ViA Development Strategy, the Rector appoints and removes Vice-Rectors, as well as determines their areas of competence, roles and responsibilities. The appointment and removal of ViA Vice-Rectors are approved by the ViA Council and Senate. Vice-rectors are appointed by the rector for no longer than their term of office.

At Faculty level, the Dean is the highest ranking official. In accordance with the goals set in the ViA development strategy, the Faculty Council nominates and the Rector appoints and dismisses the Deans, as well as determines their areas of competence, roles and responsibilities. The nomination of the Dean by the Faculty is definitely a good practice.
One of the most important body among the lower level decision making and management bodies is the Academic Arbitration Court, a permanent ViA institution that reviews applications of students and academic staff regarding restrictions or violations of academic freedom and rights specified in the Constitution of the ViA, disputes between ViA officials, as well as in cases specified in the Law on Higher Education contesting an act or actual action and taking relevant decisions regarding them, as well as performing other tasks provided for in the Constitution. The Arbitration Court consists of 3 (three) members, of whom 2 (two) are elected by secret ballot by the Constitutional Assembly for two years from among the academic staff elected to academic positions (67%), and 1 (one) is elected by the student self-government from among full-time students (33%).
The Assembly of the Faculty, works as the “senate of the faculty”, a collegiate decision-making institutions for academic, scientific and research activities of the faculties. The Assembly of the Faculty of Society and Sciences consists of 13 (thirteen) members: 10 (ten) representatives of the academic staff (77%), 3 (three) representatives of students (23%). The Assembly of the Faculty of Engineering consists of 8 (eight) members: 6 (six) representatives of the academic or research staff (75%), 2 (two) representatives of the students (25%).
The management structure of the study field and the corresponding study programmes is oriented towards the development of the study field, decision-making takes place efficiently, the support provided by the administrative and technical staff ensures all the needs of the study programmes corresponding to the study field. Here, again, it is worth noting that although this composition is fully in line with the governmental regulations, the European standard is that beside the academic and student representatives, the administrative workers are also represented in the Assembly. With this composition, the needs of this group can and must be represented indirectly in the Assembly.

1.1.4.

The admission of the students and the recognition of the study period and previous experience follows a clear and standard procedure, which is well established and well functioning. It is described in detail in SAR (pp 23-27), and it was also clearly explained during the on-site accreditation visit.
Admission criteria to ViA study programmes are approved by ViA Senate which, in accordance with the Law on Higher Education Institutions of the Republic of Latvia, approves these criteria to all of the ViA undergraduate and postgraduate programmes by November 30, each year.
The application procedure is well defined, and details provided in SAR (p.23). When applying for admission to the undergraduate programmes, the applicant or his/her authorized representative should complete an application and present a passport or ID card, a certificate of secondary education, certificates of centralized examinations specified in the admission regulations, documents permitting admission beyond competition if a specific criterion is laid down in the regulations, which have been adequately described in SAR Annex 9.
In case of postgraduate programmes and doctoral programmes, analogous regulations are adequately defined in the Annex 9 and 10 of the SAR.
For international applicants, additional requirements are prescribed: they have to present a certificate of English proficiency in internationally recognized examinations TOEFL (minimum 500 points for the test taken on-the-spot and 70 points for the online test), IELTS (minimum 6.0 points) or other evidence of English language proficiency. If previous education is acquired in English, evidence of English language proficiency is not required. In addition, a statement from the Latvian Academic Information Centre on the compliance of the education obtained abroad with the requirements of the admission regulations should be submitted. These are all well defined and

adequate.
It is a best practice that application is possible fully electronically, through the Information System of Unified Admission to Undergraduate Programmes (VUPP IS) through the e-service on the portal www.latvija.lv, and also for the postgraduate study programmes, using ViA's electronic questionnaire va.dreamapply.com.
In accordance with the Cabinet Regulation No. 932, it is possible to start studies at ViA at a later study stages, subject to the requirements of the regulation regarding the mandatory amount of credit points, which is equalized to the content of ViA study programmes.
Recognition of learning outcomes obtained in previous education is very well established in the institution, following a regular procedure. The equalization of learning outcomes is performed by the Director of the respective study programme when the student has submitted supporting documents (an academic statement or diploma with a diploma supplement for previously obtained higher education). The equalization of learning outcomes with learning outcomes obtained within the framework of the international exchange programme is performed on the basis of the higher education institution cooperation agreement, the tripartite study agreement (Erasmus learning agreement) and the certificate of the study courses acquired.
In terms of knowledge obtained in formal education, in accordance with the Cabinet Regulation No. 505, every person has the right to submit an application to ViA for recognition of knowledge, skills and competences acquired in previous education or professional experience in the study programme implemented by the higher education institution or part thereof.
Efforts are also made towards the standardization of recognition of non-formal study outcomes and working experience, but there is a room for improvement in this regard, just as in almost every HEI of the European Education Area. Some information on the possibilities of recognizing non-formal education or professional experience is available on the ViA website. Learning outcomes achieved by the person while studying (a student has been matriculated) in the study programme are recognized in accordance with the Cabinet Regulation No. 932 "Procedure for Starting Studies in Later Studies" of 16 November 2004. However, the recognition and accreditation of previously gained skills and competences from non-formal and working settings is not fully elaborated and not automated.
Vidzeme University of Applied Sciences has developed a procedure for the recognition of non-formal education and professional experience (https://va.lv/sites/default/files/Studiju-rezultatu-atzisanas-nolikums-APST-28082019.pdf) according to the Minister cabinet regulations No 505 "Ārpus formālās izglītības apgūto vai profesionālajā pieredzē iegūto kompetenču un iepriekšējā izglītībā sasniegtu studiju rezultātu atzīšanas noteikumi" that is available on the VIA website
https://va.lv/lv/studijas/arpus-formalas-izglitibas-un-profesionalas-pieredzes-atzisana and approved it.
A decision on the recognition of knowledge, skills and competencies acquired outside formal education or acquired through professional experience, as well as a decision on the recognition of learning outcomes achieved in previous education is made by the Learning Outcome Recognition Commission established by ViA. In accordance with the Regulations on the recognition of competences acquired outside formal education or through professional experience and on the recognition of learning outcomes achieved in previous education (Annex 11 of the SAR), a person must submit an application for recognition of knowledge, skills and competences. The procedure for the recognition of learning outcomes is described in the above-mentioned regulations.
Information of ViA study fields and study programmes is published on ViA website www.va.lv. The Administrative Department of ViA (Marketing Group and Study Administration Group) is responsible for publishing the information.

1.1.5.

The relevance, methods and principles of assessment methods and procedures for achieving the aims of study programmes and the needs of students is well described in the SAR (pp. 25-26, and Annex 12-13).
ViA Senate has approved the Study Regulations which lay down the rules of organizing State examinations, as well as criteria, forms and terms for the assessment of students' knowledge, conditions regarding academic debts, and other requirements for achieving learning outcomes.
Descriptions of the study courses and other programme components separately define requirements for the commencement of studies, goals and planned learning outcomes, outline the content necessary for achieving learning outcomes, a study calendar, compulsory and additional literature, and other sources of information, describe the organization and tasks of students' independent work, define criteria for assessing learning outcomes.
Academic progress of students is assessed in accordance with criteria, conditions and methods specified in these course descriptions, and these are applied consistently. To provide guidelines for the procedure of writing and defending annual projects and graduation papers, the following document is prepared and approved: Guide for Preparation and Defence of Study Projects and Graduation Papers. The composition of the State Examination Commission is approved by the Assembly of the Faculty; specialists/experts of the field are included in the commission and they follow methodological guidelines for the preparation of graduation papers. Internships within the study programmes are regulated by the Internship Regulations which lay down the procedure of internship, conditions for writing and defending reports.
The diversity of student needs is respected in the evaluation methods as well. Lecturers involved in the implementation of the programme have a good knowledge of the methods of assessing learning outcomes and receive support for the development of their skills in this area; assessment criteria and methods, as well as evaluation criteria are made public in advance; evaluation provides for a possibility to show the extent to which students have achieved learning outcomes; students receive feedback from lecturers who provide advice on the studies and research process, if necessary; assessment is consistent, fair to all students and is carried out in accordance with the approved course descriptions.
Adequate and well defined procedures – ViA Study Regulations and the Regulations of Ethics – are in place for resolving student complaints. The learning environment moodle.va.lv provides students with an opportunity to get to know academic progress evaluation criteria, conditions and binding procedures.
As it has been learned from the interviews of the on site visit, each stakeholder group is fully aware of the regulations and possibilities of these assessment procedures.

1.1.6.

Academic integrity is at the forefront of the strategy of the institution, and the management makes clear efforts to disseminate and promote the principles and practices of this aspect. This is convincingly described in SAR (pp.26-27, and Annex 13).
Principles of academic integrity are laid down in ViA Regulations of Ethics approved on 26 April 2017 at ViA Senate meeting.
The Regulations of Ethics define basic principles and norms that ViA personnel (students, academic and general staff) must observe in their attitude towards ViA, in their work, in their relations with other ViA representatives and society.
The Regulations of Ethics also include a section on academic and research ethics stating that ViA staff treats the study and research process and personnel involved therein with integrity. In academic and scientific research, the staff complies with copyright, respects intellectual property, honours work results of others, and guarantees the truthfulness of the data used and analysis performed in research.

The Regulations of Ethics list the principles and also the types of violations of academic and research ethics indicating that plagiarism, falsification, the use of unauthorized sources and ways of obtaining information during examinations (exams, tests), re-submission of one's own work to another study course without a prior agreement with the lecturer, as well as any other deliberate engagement in the activities that hinder or interfere with the study process and academic work at the institution of higher education, including participation in or concealment of violations of academic ethics shall be deemed to be a violation of academic ethics. Furthermore, the following is considered to be a violation of research ethics: violations of requirements of research ethics specified in the professional codes; allowing conflicts of interest; data falsification; tendentious data analysis and interpretation; discrimination of research participants; disregard of voluntary participation in research; disregard of participant anonymity or confidentiality (as appropriate), except the cases when these issues are harmonized with research participants or data are collected in public environment (for example, observation in public environment); violation of informed consent, unless it is a simple observation in a public place and the audio or video recording is not used in a way allowing identification of or harm to a person; misleading or failure to inform the subjects of the research on the purposes or significant aspects of research, unless it is not possible to use other effective alternative methods; misleadingsociety without providing complete information; plagiarism and self-plagiarism, i.e., failure to refer to previously published data or discoveries; use of data collected by other researchers without a reference to the contribution of other authors.

The regulations also clearly define sanctions for ethical violations, as well as the procedure for identifying violations and imposing sanctions. Sanctions for the violations of research ethics may be initiated by the Academic Ethics Commission. Sanctions for the violation of the norms of academic ethics may be imposed on students by a lecturer or the Rector in accordance with the decision of the Academic Ethics Commission. Sanctions for the violations of the norms of academic ethics may be imposed on academic and general staff by the Rector in accordance with the decision of the Academic Commission. Sanctions for the violations of general ethical principles may be imposed on the general staff (including academic staff if the violation is not related to academic work) by the employee's immediate supervisor or the Rector.

Starting from 2017, ViA has entered into the agreement with the University of Latvia on the use of the Unified Computerized Plagiarism Control System, one of the most essential anti-plagiarism tools at ViA. In accordance with the order which is issued every semester regarding submission of the graduation papers (including the Qualification papers), students have to upload their papers to the study information system LAIS which is synchronized with the plagiarism control system. This is a best practice, and seems to be effective, since in 2018, by the help of this system, a case of plagiarism of the Qualification paper was detected, as a result of which the student re-wrote the paper in the following academic year. This is a clear message to every stakeholder.

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions :

The study field and the relevant study programmes fully comply with the main directions of the strategic development of ViA and meet the needs and the development trends of the society and national as well as local economy.ViA established a solid management structure to manage this study field, where the procedures and responsibilities are well defined and clear for each stakeholder. ViA makes clear efforts to promote and supervise academic integrity. There is a room for improvement in terms of mitigation of drop-out rate.

Strengths

1. ViA established a classical, yet solid management structure of this study field.

2.The roles and responsibilities are well defined and the management workflow is effective and clear for every stakeholder, notably for the students.
3. The admission of the students and the recognition of the study period and previous experience follows a clear and standard procedure, which is well established and well functioning.
4. Academic integrity is in the forefront of the strategy of ViA.

Weaknesses.
1.The high drop-out rate of these study field needs more aggressive and pro-active strategy.

1.2. Efficiency of the Internal Quality Assurance System

Analysis

1.2.1.

ViA has developed and maintains a quality assurance system, which contributes to the achievement of the aims and learning outcomes of the study field and the relevant study programmes. This is well described in pp.28-34 of the SAR.
The system for the quality management of internal processes has been developed and implemented several years ago. Its purpose is declared as to describe, assess and improve administrative and study-related processes. Administrative processes are monitored in weekly meetings attended by the Directors of programmes and study specialists. If necessary, other administrative employees such as representatives of the study administration group are involved, and they help solve problems related to the study process. Furthermore, the meetings of the Directors of the study programmes are held once a month where current issues related to studies are discussed. The processes related to the provision of studies are summarized, structured and made available to employees on the MS SharePoint website created by the faculty.
The planning of administrative tasks and tasks for the implementation of the study programmes takes place in the MS Planner environment, which allows to promptly monitor the list of tasks to be performed, the deadlines for the various parties involved, and responsible persons.
The quality of the study process and content is assessed at several levels: 1. evaluation of the course descriptions and assessment of their compliance with the Occupational Standard; 2. course assessment questionnaires filled in by students regarding the lecturer’s performance and course content; 3. discussions with students several times per semester; 4. discussions with industry representatives – internship providers and employers.
Course descriptions are also assessed in accordance with the requirements of the Occupational Standard for each study programme. Course descriptions are placed on moodle.va.lv under the relevant course section, thus they automatically become available to students as soon as they have registered for the relevant course – in this way, information on the course content, topics and assessment criteria is available to students.
After examining course assessment questionnaires, a decision is taken to discuss possibilities of improving the study content or the quality of the study course implementation with the relevant lecturer. The Director of the study programme, Dean and study specialist participate in the assessment. During discussions, the lecturer is expected to provide an oral explanation of the poor assessment, possible causes and the planned measures for the implementation of remedial actions.
The Administrative Department of ViA is responsible for making information publicly available (on the homepage – the Marketing group; on other websites – the Study administration group). Information about ViA study fields and study programmes offered, including quality evaluation and monitoring mechanisms, is published on the ViA website www.va.lv. The system ensures continuous improvement, development, and efficient performance of the study field and the relevant study programmes.

1.2.2.

ViA has successfully implemented a development strategy for 2016-2020, including a thorough quality assurance mechanism, which has been further developed and improved in the past couple of years. In this mechanism the effective feedback mechanism plays a central role, which is in line with the European standards. This is well summarized in pp.29-30 of the SAR.
ViA has developed the procedure for study programme developing (ViA Study Quality Assurance Policy, Annex 2 - see Part I, Section 1.3), approving and monitoring. This procedure lays down guidelines for the development, approval, monitoring and updating of the study programmes, lifelong learning courses and other curricula and components thereof. The programmes and components thereof are elaborated to meet the objectives set, which, in turn, are in line with the ViA strategy. Programmes are developed using the vision of external stakeholders in such a way to meet the study results defined and to ensure compliance of the learning outcomes with the Latvian and European Qualifications Framework, and to promote higher education goals – to promote personal growth and employment, the formation of civil society and the expanded knowledge base.
As a further improvement since 2018 the Advisory Council has also been involved in the quality assurance mechanism.
The information obtained is passed on to the teaching staff of the faculty, as well as to the members of the Advisory Council, calling them to a discussion on the possible/necessary changes to the study programmes. For example, improvements were made to the Information Technologies Bachelor's programme based on the labor market demand and pursuant to the results of discussions with employers. Another example is that during the development of the Mechatronics Bachelor's programme in 2017, the labor market demand and professional study programmes in the field of mechatronics implemented in Latvian higher education institutions were analyzed.
It is a good practice that all stakeholders are involved in this feedback mechanism. Even more importantly, as the experts have learned from the onsite meetings, all stakeholders are fully aware of this framework and they actively use it as a quality feedback mechanism.

1.2.3.

Based on the SAR (pp.30-31) and the interviews conducted during the site visit, it is entirely clear that the implementation of the quality assurance mechanism is successful, and all the stakeholders are active in providing and receiving feedback.
In general, the rights and interests of ViA students are represented by the Student Union of ViA – an independent, elected institution whose representatives participate in improving the quality of studies and internal processes of ViA, as well as in planning and implementing future progress. The Student Union representatives are involved in the work of the Assembly of the Faculty, Senate, Senate commissions, the Constitutional Assembly, as well as in the Development Commission. Besides, students are also represented in the Advisory Councils of each study programme.
The procedure is as follows. Students can file claims and complaints individually to the study programme secretary or study specialist, who then passes them on to the Director of the study programme, or the claims and complaints can be directly submitted to the Director of the study programme, who assesses the complaint received and provides feedback to the claimant about the further actions regarding the complaint/application. Complaints can also be forwarded through the Student Union, which then files them for consideration at the meeting of the Assembly of the Faculty.
The Director of the study programme, after examining the content of the complaint, promptly responds to it and calls the parties involved to a conversation in order to find a solution to a specific problem. Students receive information on complaints and proposals filed from the head of the particular student group and/or representatives of specific fields.

Within the framework of the study field, at the end of each semester, the Directors of the study programmes organize discussions with the students about the study process quality – in this way students provide feedback on the study process as a whole, make suggestions for process improvement, as well as point out shortcomings. The Director of the study programme summarizes things discussed and provides information to the Dean of the faculty and, if necessary, also to the teaching staff involved in the study field. Problems are analyzed, solutions are prepared, persons responsible for the implementation of the solution are appointed, and then feedback on the solution, problem solving status and progress is given to the students.
Apart from the end-of-semester discussions, student discussions with the Dean are organized once or twice a semester within the framework of the study field – the purpose of discussion is to find out the opinion of students, to listen to it, to obtain information about the processes that need improvement in a timely manner.
The quality of the study process and content is assessed at several levels: 1. evaluation of the course descriptions and their compliance with the professional standard; 2. course evaluation questionnaires filled in by students on the performance of the lecturer and the course content; 3. end-of-semester discussions with students, which are held at the end of each semester and are convened as needed if students indicate a need; 4. discussions with industry representatives - both companies that provide internships and employers.
In the event of a complaint about academic work or an assessment, the student has the right to appeal (to request a reassessment). The procedure for submitting an appeal is laid down in the ViA Study Regulations.
Students are especially encouraged to use these channels, although, as it was clear from the interviews, the activity of this group is not so high, further efforts can be made to encourage them to fulfill the questionnaire in order to obtain statistically relevant feedback.

1.2.4.

Types of statistical data collected and reports compiled are adequately listed in Table 2 of SAR (p.32). Analysis of these results can be found in Annex 14 of SAR.
The mechanism for obtaining and providing feedback, including from students, graduates and employers, is effective and focused on the improvement of the study field. To make decisions about the development and improvement of the study field programmes, various student profile data and student number statistics are taken into account.
Statistical reports are compiled as necessary, distinguishing between mandatory (in accordance with the Cabinet Regulations) and optional statistics (as needed); the information to be collected is analyzed according to the purpose stated in the decision.
Statistical data reports on applicants, the number of students and graduates are prepared on a regular basis. Student surveys at the end of each study course allow the lecturer to assess the course and results achieved, as well as student satisfaction. The questionnaire includes questions about the course topics and their relevance to the particular course, the usefulness of acquired skills and knowledge, assessment of the importance of lectures, practical assignments and independent work, availability of the lecturer (consultations, responsiveness), assessment of technical support, as well as a possibility to freely submit one’s recommendations for the course improvement. In the section on the assessment of the lecturer’s work, students assess the lecturer in terms of their professional competence, ability to arouse interest in the course, ability to connect theory with practice, work organization skills, attitude towards students.
Directors of the study programmes regularly monitor the progress of study courses and, if necessary, initiate changes (for example, to change the course lecturer, to clarify the course content, to change the amount of credits for a particular course, to change the placement of the course in the study programme plan, etc.). Problem issues are discussed at the stages intended for

ensuring the study programme quality. As we have learned from the SAP and the on-site visit, based on the students' assessment, lecturers were changed in the Cybersecurity Engineering courses of the Master's programme.
In general, the overall evaluation of study courses ranges from 3.5 to 5 points (the maximum number of 5 points). The average rating for all courses as a whole is 4.3, which indicates high student satisfaction with the overall quality of studies.
In order to improve the quality of studies, in 2021, the content of the course assessment questionnaire for students was completely revised, and we started working on a new student registration procedure, namely, students can complete registration for the next study semester by filling out all the study course assessment questionnaires of the relevant semester. In order to implement the new procedure, the Study Information System (LAIS) was improved and programming has been carried out to ensure student feedback.
ViA also regularly conducts graduate surveys (9 months after graduation). As it is clear from the SAR and the interviews, the involvement of graduates in filling out surveys is not very successful – in 2021, answers were received from only 21% of VIA graduates surveyed of which 36% were directly from the graduates of the study field programmes. 80% of the respondents indicated that they work full-time – 53% in the private sector, 40% in the governmental and municipal institutions and 7% in the public sector. The vast majority of respondents (87%) stated that they use the knowledge gained during their studies in their professional work. This could be one of the indicators that show that the knowledge provided by the study programmes is of sufficient quality and practically relevant to the labor market.

1.2.5.

The information available in ViA website www.va.lv is timely and relevant. The Administrative Department of ViA is responsible for making information publicly available.
Individual homepages of the study programmes:
Information Technology:
https://va.lv/en/study-here/bachelors-degree/information-technologies/about-programme
Mechatronics (Latvian only): https://va.lv/lv/studijas/bakalaurs/mehatronika/par-programmu
Cybersecurity Engineering:
https://va.lv/en/study-here/masters-degree/cybersecurity-engineering/about-programme
Virtual Reality and Smart Technologies:
https://va.lv/en/study-here/masters-degree/virtual-reality-and-smart-technologies/about-programme
Sociotechnical Systems Modelling (Socio-technical Systems Engineering):
https://va.lv/en/study-here/phd-degree/sociotechnical-systems-modelling/about-programme
Although the structure of the website is not very simple, all the necessary and required information and data are available for the students and other stakeholders. The online tools are regularly and effectively used throughout the quality assurance mechanism as well.

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions :
ViA has successfully implemented a development strategy for 2016-2020, including a thorough quality assurance mechanism, which has been further developed and improved in the past couple of years. In this mechanism the effective feedback mechanism plays a central role, which is in line with the European standards.
All stakeholders are involved in this feedback mechanism. Even more importantly, as the experts have learned from the onsite meetings, all stakeholders are fully aware of this framework and they actively use it as a quality feedback mechanism. One issue is the lack of statistically relevant

amount of feedback from students - further efforts must need to be done in this regard.
Strengths:
1.ViA has successfully implemented a development strategy, including a thorough quality assurance mechanism.
2.All stakeholders are involved in this feedback mechanism, and they are fully aware of the existence and importance of this framework.

Weaknesses:
1.The calculation of dropout methodology is not transparent.
2.The activity of students in fulfilling the questionnaires is not so high, further efforts should be made to encourage them in order to obtain statistically relevant feedback.

Assessment of the requirement [1]

1 R1 - Pursuant to Section 5, Paragraph 2.1 of the Law on Higher Education Institutions, the higher education institution/ college shall ensure continuous improvement, development, and efficient performance of the study field whilst implementing its internal quality assurance system:

Assessment of compliance: Fully compliant

The ViA complies with all the requirements of the criteria since it ensures continuous improvement, development, and efficient performance of the study field whilst implementing its internal quality assurance system, as justified in the sub-criteria below. Improvements can still be made in the way of clearly defining calculation of dropout methodology and further efforts should be made to encourage students and graduates to fulfill the questionnaires. (See comments above, and SAR pages 27-33.)

2 1.1 - The higher education institution/ college has established a policy and procedures for assuring the quality of higher education.

Assessment of compliance: Fully compliant

ViA has developed and maintains a quality assurance system, which contributes to the achievement of the aims and learning outcomes of the study field and the relevant study programmes. This is well described in pp.28-34 of the SAR.

3 1.2 - A mechanism for the development 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.

Assessment of compliance: Fully compliant

ViA has successfully implemented a development strategy for 2016-2020, including a thorough quality assurance mechanism, which has been further developed and improved in the past couple of years. In this mechanism the effective feedback mechanism plays a central role, which is in line with the European standards. This is well summarized in pp.29-30 of the SAR.

4 1.3 - 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 published.

Assessment of compliance: Fully compliant

Based on the SAR (pp.30-31) and the interviews conducted during the site visit, it is entirely clear that the implementation of the quality assurance mechanism is successful, and all the stakeholders are active in providing and receiving feedback.

5 1.4 - Internal procedures and mechanisms for assuring the qualifications of the academic staff and the work quality have been developed.

Assessment of compliance: Fully compliant

Internal procedures and mechanisms for assuring the qualifications of the academic staff and the work quality are developed and written down in the study quality assurance policy https://va.lv/sites/default/files/5P-ViA_Studiju-kvalitates-nodrosinasanas-politika-APST-31012020-ENG.pdf

6 1.5 - 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.

Assessment of compliance: Fully compliant

ViA collects and analyses the information on the study achievements of the students, employment of the graduates (both from graduates and employers), satisfaction of the students with the study programmes, efficiency of the work of the academic staff, the study funds available and the disbursements. This process is described in written down in the study quality assurance policy
https://va.lv/sites/default/files/5P-ViA_Studiju-kvalitates-nodrosinasanas-politika-APST-31012020-ENG.pdf
Also see comments above, and SAR pages 32-33 and annex 14 (14P_Studējošo_darba dev viedoklis_LV_red.zip)

7 1.6 - The higher education institution/ college ensures continuous improvement, development, and efficient performance of the study field whilst implementing its quality assurance systems.

Assessment of compliance: Fully compliant

The quality assurance procedure in the ViA is thorough. Everything is written down in the ViA Study Quality Assurance Policy which are available to everyone to read publicly.
https://va.lv/sites/default/files/5P-ViA_Studiju-kvalitates-nodrosinasanas-politika-APST-31012020-ENG.pdf

1.3. Resources and Provision of the Study Field

Analysis

1.3.1.

The ViA has established a way for calculating expenses per student, therefore planning the expenses. When calculated the expenses, direct expenses (academic staff salaries, study materials), semi-direct costs (salaries for other staff members (scientific, administrative etc), development expenses etc) and indirect costs that are applied to all study programmes, f.e., building management costs, capital expenditure, salaries for the general staff. (SAR p. 37-39)
From the provided SAR, the majority of expenditures are direct (direct+semidirect) and make up to 58.9% (in 2021), including 40.9% (of all expenses) for cost of academic and scientific work (related to the study process). The indirect expenses make up to 41.1% (in 2021), where the largest proportion goes to remuneration (23.9%) and costs of building management (7.7%).
Specific funds are allocated for the development of the study field and respective study programmes. A grant from ViA budget is allocated to the Faculty of Engineering in the amount of 10 000 EUR/per year, in addition for the purchase of teaching aids in the amount of EUR 2,500 and

financing for field trips in the amount of EUR 300 per year. (SAR p.40)
Control and sustainability of the use of financial resources are laid down in the procedure for development, approval, execution and control of the budget of Vidzeme University of Applied Sciences (approved on 26 October 2011 at the ViA Senate meeting, decision No. 10/7.1)
Research is funded from different resources:
Base funding for science;
Funding for the State research programmes;
Funding for research grants allocated by Valmiera city municipality;
EU Structural Funds;
Grants and programmes of the Latvian Council of Science;
Other income for science from the State budget (including research commissioned by the State administration institutions);
Funding for the development of scientific activity;
Income from contracts with legal entities of the Republic of Latvia;
Income from foreign financial assistance;
Other income for research activities. (SAR p.36)
During the assessment visit, it was discussed that the funding for science is not sufficient, however it is a national level issue, therefore ViA is involved in projects/cooperations/grants to fulfill their scientific activities.
The experts believe that there is a system on determining and redistributing the financial support required for the implementation of the study field. A system for research funding is effective.

1.3.2.

A unified system and procedures have been established for the improvement and purchase of material, methodological, informative, etc. provision.
ViA has two buildings – at Cēsu Street 4 and Tērbatas Street 10 – for the study process, research and administrative activities. The current study base consists of 38 lecture-rooms, including 3 computer classrooms with 90 workstations and the Internet connection, as well as a projector, loudspeakers and a multifunctional remote control for presentations. Interactive boards are available in two lecture rooms. All staff workplaces are equipped with desktop computers; there are 10 laptops available for on-site use upon request. There are 5 laboratories available for the implementation of the study process – Computer Network Laboratory, VR/AR Laboratory, Electronics and Electrical Engineering Laboratory, Mechatronics Laboratory, and Mobile Technology Laboratory. Students are provided with access to the following specialty software used in training programmes – Blender, Android Studio, CocoaPods, CodeBlocks, Eclipse EE, Enterprise Architect, Python, Nodejs, PSPP, Unity, Visual Studio. (SAR p.40-41)
In the meeting with university staff, it was clarified that laboratories are available during classes as well outside them, for group/individual work, homework, research and others. It is asked for the students to book their times with the responsible person of the classroom or laboratory.
As seen in the previous indicators analysis, there is funding allocated to replenishing materials, books etc, as well as for larger equipment, however the experts were informed by the study programme directors and the dean that mostly larger and more expensive equipment is bought within research projects.
The material technical basis is sufficient and available to both teaching staff and students. There is a system and procedure on replenishment.

1.3.3.

Library resources and databases are available to students and meet the needs of the study field.

The library of ViA is part of the Valmiera Integrated Library, and it is open following their work-hours, however the databases and electronic catalog is accessible online with personal logins. All processes of ViA library are automated by means of the library information system ALISE, The library offers resources on two floors divided by sections. There are available spaces for individual and group workspaces.
To provide high quality support to ViA education and scientific process, the library offers individual consultations, tours and group training to students, academic staff and other interested parties. In the academic year of 2019/2020, the first year students had 15 introductory lectures on the library and its services, students got acquainted with electronic catalogs and information search in the databases available. (SAR p.42)
ViA has subscribed to various databases. Full-text databases: EBSCO, ScienceDirect, Scopus, Web of Science. Besides, Travelnews.lv, Lursoft, i-finanses and i-law are also available. In collaboration with Valmiera Library, readers have access to the following databases: Britannica Online Library Edition, EBSCO eBook Public Library Collection, LETA Archive, nozare.lv, Letonika, "Lursoft" newspaper archive, as well as a collection of DVDs. Mostly, databases are available from all computers operating in ViA data transmission network. Individual databases may be accessed only on-site at the library with a special permission (Lursoft, i-finanses, i-law). (SAR p.43)
Funding for ViA library collection is not divided by the study fields because during the study process the library resources are often used by students of several study fields. The most important items within each course are renewed on a cyclic basis, while the most current items of additional literature are purchased on a regular basis. (SAR p.42) Books published in Latvia are purchased, in cooperation with Valmiera Library, in small quantities each month. Books published outside Latvia are purchased at the request of the academic staff in accordance with ViA Library book ordering and usage procedure. In 2022, there were purchased 4 titles of 4 copies in IT and 4 titles of 7 copies in Mechatronics. (SAR p.44)
During the assessment visit, the experts had the possibility to visit the library and discuss the manner on how book collection is replenished. It was explained that the academic staff has the possibility to ask for the needed books and they can choose the format of the resource (physical book or e-book). Individual e-books are rarely purchased, rather databases or collections are chosen. The experts believe that more emphasis should be put on digital resources, especially since the study field is fast developing and e-books are much easier to use from any place of students preference.

1.3.4.

Moodle is the primary platform for learning content management – for storing lecture materials, methodological instructions, various forms and information useful to the student. A single structure has been developed for study programme content. Moodle contains all the needed information on study courses, information for students about university, travel, application forms, registrations for next semester etc. and a platform for uploading thesis, internships reports. During the presentation of Moodle, it could be seen that the english version of it is not very overlooked and hard to use. LAIS is a study administration system in which students register for courses and keep track of their study progress; this system is administered by the Study Administration Group of ViA. MS 365 software is fully used in the study process – MS Teams is used to conduct remote lectures; it is also used as a quick communication site with students – each study programme group has its own MS Teams channel for communication with the Director of the study programme and study specialists. (SAR p.46-47)

1.3.5.
ViA election process is regulated by the Regulations "On Election to Academic Positions" (updated

on 26 January 2022). Vacancies are advertised by announcing a competition on the official website of “Latvijas Vēstnesis”, as well as by publishing information on the ViA website. Scientific, pedagogical and organizational qualifications of an applicant for the position of a professor or an associate professor are assessed by the Council of Professors in accordance with the procedures specified by the Ministers Cabinet. The scientific and pedagogical qualifications of the applicant for the position of an assistant professor, lecturer or assistant are assessed by the Council of the study field referring the matter to the relevant assembly of the faculty. (SAR p.47-48)
During the meeting, the management of the study field clarified that mostly new staff are attracted personally. They involve stakeholders in events and use it as a platform to inform more about the vacancies.

1.3.6.

The improvement of the qualification is laid down in the job description of the teaching staff of ViA. The needs for improving the qualification of the lecturers are discussed at the level of study fields, funding is sought accordingly within the framework of faculty and projects. Erasmus+ mobility also provides the possibility to improve teachers' qualifications. The European Social Fund project “Development of Academic Staff and Human Resources of Vidzeme University of Applied Sciences” (SAM 8.2.2) provided professional development lectures from 2018 to 2021. Within this, there was the possibility to increase knowledge in digital technologies and academic leadership, to learn English, as well as to do internships in industry companies. (SAR p.49)
Once per academic year a seminar for lecturers is organized on the study quality assurance issues in which they discuss their experience/observations gained during the lectures. The Director of the study field organizes additional meetings if any topic is needed to discuss further. Once per academic year (in October), the lecturer has to submit to the Dean of the faculty a report on his or her achievements in scientific work, experience gained in projects, seminars and conferences, if any. (SAR p.50)
During the assessment period, the experts were informed that there is a questionnaire made for teachers to gather information on needed courses, after that lectures are provided as needed. It was also discussed with the dean and study programme directors that there is no exact control mechanism that follows how often the teacher attends courses (only CV replenishment). The experts believe that such a mechanism could be beneficial to track the development and help ensure that the qualification is sufficient.

1.3.7.

In order to optimize the workload of the teaching staff, individual study courses are taught in combined groups, for example, the study courses “Research Methodology and Scientific Publications”, “Innovations and Project Management” of the Master’s programmes are taught to student groups combining both Master’s programmes together. Workload is organized in accordance with ViA Remuneration Regulations. (SAR p.51)
The workload is balanced.

1.3.8.

Career and psychological support provided by ViA is available to all students free of charge. Individual career counseling is available to students throughout the year and can be used for many reasons, f.e., To identify their professional goals and move towards their achievement, To improve their CVs, covering letters and to help prepare for a job interview, To gain structured support for starting a business, To plan further education.

An informative journal “Student’s Journey” is available for the convenience of students. It depicts the processes/stages related to studies at ViA in a laconic and structured manner, with an indication of the contact persons and main activities of each specific stage.
Support for first year students is provided by course godparents appointed by ViA Student Union – senior year students who willingly undertake and fulfill this role – to provide informative support to first year students in matters related to the study process. Furthermore, “buddies” are assigned to international students, who introduce them to the study process, are the contact persons in case of confusion, and also introduce the culture of ViA, Latvian traditions and help them settle into the student environment.
The premises used for the implementation of the study field are located at Tērbatas Street 10, and they are adjusted for students with invalidity. In case of students with invalidity, the management of the study field is informed about them, the needed adjustments and their assistants. The teaching staff involved in the implementation of the study field applies an individual approach when working with these students, for example, students with reduced mobility carry out practical assignments involving fine motor skills by the help of VR devices. (SAR p.51-52)
There is sufficient support available for students.

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions :
The financial support is strictly planned by expenses per each student. Specific funds for development are allocated to the faculty. Funding for research is available, a fair amount of funding is brought into the field from research projects.
The infrastructure of ViA is sufficient. There are 5 laboratories available to teachers and students that offer all the needed equipment. Methodological and informative provision is met by the Valmiera Integrated library, which offers both physical books and e-resources. Replenishing the collection is regulated by inner regulations. The library doesn’t have a policy on the format of the resource (physical or e-resource). The experts believe that more emphasis should be put on digital resources, especially since the study field is fast developing and e-books are much easier to use from any place of students preference.
Moodle is used as the main portal to access the necessary information for the study process. The english version is not easily used in english. The interface of Moodle is in latvian language. All the information in latvian and english is placed in one place, and is hard to find and use for foreign students. MS 365 software is fully used in the study process.
Teaching staff is elected in accordance with state and university regulations. The stakeholders are informed about available positions. Professional and didactic development is mostly organized by the demand of the academic staff. The attendance of courses/lectures is tracked by replenishment of CV’s. A more unified mechanism could be beneficial that this should not be tracked only by the dean individually . Workload of academic staff is balanced.
There are support systems in place for students, such as Career consultations and Psychological help. Both buildings are accessible for individuals with mobility impairments.
Strengths:
1.The finances are transparently planned, there are funds allocated each year for development.
2. There are various (5) laboratories available for teachers and students. (including for individual and group work, research activities etc)
3. Students are provided with access to software needed to prepare for the industry.
4. The library provides introductory lectures on various aspects, as well as individual consultations per request.
5. MS 365 has an important role in the study process and is easily used as a communication platform.

6. There are different development courses offered tailoring to the needs of teachers.
7. There are support systems in place for students, such as Career consultations and Psychological help.
Weaknesses:
1. Library doesn't have a policy for the format of resources, when replenishing the informative basis.
2. Moodle is not easily used in english.
3. Development of didactic, professional, language etc. skills are tracked individually by the dean every year.

1.4. Scientific Research and Artistic Creation

Analysis

1.4.1.

ViA formulates its long-term research goals, as „to create and apply new technologies of the next generation knowledge society“, with medium-term goal „to promote the national and regional development of smart specialization areas“ (SAR chapter 2.4.Scientific Research and Artistic Creation). Accordingly, the common research direction of ViA is formulated as „digital solutions for social challenges“, its sub-directions being „virtual-reality technologies and visualisation“, „modelling and imitations of sociotechnical systems and security“, „e-study management and technologies“ and „smart technologies of the national economy and eco-buildings“ (SAR chapter 2.4.Scientific Research and Artistic Creation). The research sub-directions are well aligned with the ViA vision of being an „internationally recognized regional platform“, involved in interdisciplinary research, and proactively responding to societal changes.
The provided lists of publications and research projects prove the correspondence of ViA research in the study field with the development goals of the institution. A total of 119 publications are listed for the review period of 2014-2021 (SAR Annex 21P_ Publikācijas_Publications.xls), and all of them can be attributed to ViA research sub-directions in the field. All of the research sub-directions are covered by corresponding publications and projects, most of them are interdisciplinary, combining engineering, information technology, social science, educational science disciplines. The provided list of research projects (SAR Annex 21P_ Publikācijas_Publications.xls) includes international, Baltic Sea Region, national and regional research topics. Research topics are relevant to the research field addressing important issues of regional and national development.
Summarizing, the directions of scientific and applied research correspond to the development goals of ViA and are relevant for the study field and industry.

1.4.2.

Scientific and Applied Research, carried out in ViA is closely related with the study process. First of all, this is implemented via the involvement of all-level students in the research activities. The topics of doctoral thesis are related to the research sub-directions of ViA. Problems related to system modeling, virtual reality and smart solution design-related topics are investigated (SAR Chapter 2.4.Scientific Research and Artistic Creation, expert meetings with ViA staff and students). Doctoral students often combine their doctoral thesis research with participation in research projects in the same topical area (information given during meetings with ViA students). Master and bachelor students are also participating in research projects, and relate their final thesis research with corresponding projects (information given during meetings with ViA teaching staff and students).
Study programmes involve courses that are developing students’ research skills - introducing students to the research process and techniques. The Professional Bachelor study programme Information Technologies has a course “Research development and presentation skills” (SAR Annex

59P), Master study programmes Cybersecurity Engineering and Virtual Reality and Smart Technologies both include a course “Research methodologies and scientific publications” (SAR Annexes 36P and 50P).
Also, ViA demonstrates good practice in implementing the research outcomes into the study process. According to the information provided by ViA (SAR Chapter 2.4.Scientific Research and Artistic Creation), research project results were used to revise and improve the Bachelor Study Programmes Information Technologies and Mechatronics, to develop a comprehensive, science based, interdisciplinary assessment framework for Cybersecurity Engineering. Also, innovative education solutions and initiatives were introduced in the study process as a result of a number of research projects. Examples of such innovations are active classroom, virtual reality system, interactive, fully inclusive 3D environment solutions, being integrated into Bachelor study programmes.
The connection of scientific and applied research of the study field with the study process is logical and justified. Research outcomes are integrated in the study process in the study programmes of all levels.

1.4.3.

ViA is involved in international research projects with a wide geography of project partners from Greece, Czech Republic, Israel, Spain, Switzerland, Austria, Poland, Germany, Norway, Belgium, Romania, Hungary, Portugal, Denmark, Sweden, Estonia, Norway, Liechtenstein, Lithuania, France, Italy, Netherlands, Cyprus, Finland (SAR Chapter 2.4.Scientific Research and Artistic Creation; SAR Appendix 21P). More than research projects with international partners were carried out in the review period of 2014-2021, some of them still ongoing. Research projects cover main research sub-directions of ViA - virtual-reality technologies and visualisation, modeling and imitations of sociotechnical systems, e-study management and technologies and smart technologies.
International research projects are related to all ViA study programs of the field - doctoral study programme Sociotechnical Systems Modelling, Master study programmes programmes Cybersecurity Engineering and Virtual Reality and Smart Technologies, Bachelor study programmes Information technologies and Mechatronics (SAR Chapter 2.4.Scientific Research and Artistic Creation; information from meetings with ViA students and staff). Relationship with study programmes is ensured through the involvement of students in research and solution development, via student participation in hackathons, I-Labs and other activities.
There is big potential of international research dimension through ViA participation in the Erasmus+ initiative “European Universities” – EUDRES (input from expert meeting with ViA executive management). In this alliance, higher education institutions from Austria, Hungary, Netherlands, Portugal, Romania, Germany, Finland and Latvia combine their resources and execute joint education and research activities. In the scope of this alliance, students have been involved in international hackathons, bootcamps, Living Labs, and other research-related activities.
International cooperation in the field of scientific and applied research within the study field and the relevant study programmes is ensured and is being purposefully developed.

1.4.4.

Scientific research in the study field is carried out at the Socio-Technical Systems Engineering Institute (SSII). Lecturers of the study field are participating in the research activities and research projects of SSII, three of them are elected to the scientific council of SSII (SAR Chapter 2.4.Scientific Research and Artistic Creation; information from expert meetings with ViA staff). Postdoctoral projects are a good opportunity to involve lecturers in scientific research. 4 postdoctoral projects during the review period of 2014-2021 are indicated in the SAR (SAR Chapter 2.4).

Lecturers are encouraged to participate in doctoral study research. During the review period, two lecturers have obtained a doctoral degree in the areas representing ViA research direction, and relevant to the study courses taught (SAR Chapter 2.4). Currently, six lecturers of the study field are studying in ViA Doctoral programme “Sociotechnical Systems Modelling” and are writing their doctoral theses (SAR Chapter 2.4).
There are some mechanisms in place for motivating lecturers to take part in research activities (SAR Chapter 2.4; information from expert meetings with ViA staff). Lecturers of the Faculty of Engineering (FE) are informed about the possibilities of joining research projects. Also, publication costs can be covered from the ViA budget.
However, research and publication activities are very much varying between lecturers in the field. The publication list (SAR Annex 21P) shows 14 lecturers, but 5 out of them (35%) have only 1-3 publications during the review period. 5 lecturers have 6-9 publications, 3 – 12-13, and 1 – 36 publications over this period. 8 lecturers were involved in research projects over the review period, and only 2 participated in scientific conferences.
Summarizing, ViA has certain mechanisms for the involvement of the teaching staff in scientific and applied research, however, they are not sufficient and efficient enough for motivating academical staff to do active research.
Scientific research activities overall show acceptable results, also, research is integrated into the study process at all levels. However, there are big differences in the research activity level, with around 35% members of academic staff publishing insufficiently.

1.4.5.
Doctoral students are naturally doing research on the selected topic of their thesis. Topic selection is done from one of ViA research subdirections. Majority of doctoral students from the Doctoral study programme Sociotechnical Systems Modelling are involved in related research projects at ViA (information from expert meetings with students).
Master programme students are also involved in scientific projects, mostly for the development of solutions or simulation models, and they are also encouraged to prepare publications. SAR presents a list of 11 publications with participation of Master programme students (SAR Chapter 2.4). Also proof of Master Thesis topics, related to scientific research projects is given.
Undergraduate students are also involved in scientific and applied research, mainly through the development of various systems (SAR Chapter 2.4; information from the expert meeting with students and staff). There are examples of Bachelor Thesis topics, related to scientific research projects, where undergraduate students are participating (SAR Chapter 2.4).
ViA has introduced one more instrument for involving undergraduate students in research. This is done via student participation in specialized laboratories - Student Practice Laboratory (S-LAB), Innovation Laboratory (I-LAB), and Business Trial Laboratory (B-LAB) (SAR, Chapter 2.4). The S-LAB or Student Practice Laboratory offers an opportunity for students to do internship or to gain practical experience while working in one of the ViA’s laboratories and developing products and services for various institutions and organizations. The goal of the B-LAB is to promote an interest in entrepreneurship and the development of one’s own business ideas, providing the necessary advisory support. The I-LAB provides for an opportunity to work on real and innovative products/services for the needs of a specific company.
Summarizing, ViA has mechanisms in place to promote the involvement of the students of all levels in scientific and/or applied research. and/or artistic creation. They are well-functioning and efficient.

1.4.6.

ViA is developing and introducing various innovations into the study process by utilizing the outcomes of different research projects they are participating in. Examples include solutions based

on Active Learning Classroom (ALC) approach, Living Laboratories, etc. (SAR Chapter 2.4).
Participation in the European university alliance in accordance with Erasmus+ initiative “European Universities”, also enables the integration of innovative study methods into the study process, promoting entrepreneurship and creativity. Students participate in hackathons, Bootcamps and Living Laboratories, forming international student teams, learning interdisciplinary and future skills demanded by the labor market (SAR Chapter 2.4).
ViA also has an Innovation Program for Students (VIPs), aimed at introducing a complex and versatile mechanism for promoting and strengthening mutual cooperation between students, the industry and the municipality, providing the opportunity to engage in different activities (Innovation Laboratory and Business Laboratory), providing for teamwork and cooperation with a company in developing practical solutions (SAR Chapter 2.4).
Summarizing, ViA applies innovative solutions in the study field, which have a positive impact on the study process.

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
There are different mechanisms in place at ViA for promoting scientific and applied research among academical staff and students of all levels. Research is well focused, publications and projects are related to the sub-directions, formulated in ViA research strategy.
Research activities are well integrated into the study process. Students of all levels (bachelor, master and doctor) are involved in research projects, thesis are related to research projects. Innovative methods are being applied for involving students in research activities – international hackathons, live labs, specialized innovation programs.
ViA shows active participation in different international projects, with new opportunities being opened through the participation in the European university alliance.
Socio-Technical Systems Engineering Institute (SSII) organizes main scientific research activities in the field, and academical staff is motivated to participate in research projects. However, the level of participation in research activities is very different among educational staff members, and publication and conference participation numbers could be increased by adding additional motivation mechanisms.

Strengths:
1 Focused research, falling into strategic research sub-directions of ViA.
2 Strong international research project cooperation with a large number of international partners.
3 Additional joint research opportunities offered by the European university alliance.
4 Students of all levels are included in scientific and applied research projects, their thesis are related to research topics.
5 Innovative mechanisms are introduced for involving students into research activities, including specialized laboratories aimed at stimulating student participation in company initiated projects.
6 Socio-Technical Systems Engineering Institute (SSII) is active in organizing research activities, involving academical staff in scientific and applied research projects.

Weaknesses:
1 There are rather big differences in the research and publication activities of individual academical staff members.

Assessment of the requirement [2]

1 R2 - Compliance of scientific research and artistic creation with the level of development of scientific research and artistic creation (if applicable)

Assessment of compliance: Partially compliant

Scientific research activities are well-organized and seamlessly integrated into the study process at all levels. However, a potential weakness arises from variations in academic staff research activity, which can be effectively addressed through the introduction of supplementary motivation mechanisms. Further insights into this matter are detailed in chapter 2.4 of each respective study programme analysis.

1.5. Cooperation and Internationalisation

Analysis

1.5.1.

The cooperation partners are selected in view of the specific features of the study field and the relevant study programmes.
ViA has established a strong cooperation network with various Latvian industry associations, individual companies, public and educational institutions (SAR, p 66, Annex 22P, input from meeting with employers/ cooperation partners). To select suitable partners for study programs or research directions, ViA considers several criteria, including the partner's relevance to the program or research direction, previous successful cooperation experience, and mutual interest in forming a sustainable partnership. The decision to form new cooperation agreements is discussed at faculty meetings, with the participation of the Dean of the faculty and Directors of the study programs. (SAR, p. 66; input from the meetings with the study programs directors and the Dean). When selecting industry partners, ViA assesses whether they can offer internships for students, attract company employees to give guest lectures or teach courses, and cooperate in the graduation process by providing current topics and inviting company representatives to participate in the evaluation of study papers. This collaboration provides students with industry-specific knowledge and practical experience, ensuring their readiness for employment (SAR, p.66, input from the meeting with employers and cooperation partners).
VIA is a member of the leading Latvian technological professional associations and cybersecurity associations:
Latvian Information and Communication Technology Association (LIKTA, https://likta.lv/en/members-and-partners/),
Latvian IT Cluster (https://www.itbaltic.com/members)
the Association of Mechanical Engineering and Metalworking Industries (MASOC katalogs 2023.pdf, p.37)
Latvian Electrical Engineering and Electronics Industry Association (LETERA, https://www.letera.lv/biedri/)
The region's collaboration efforts are advancing through partnerships with several key institutions, including LIAA Valmiera Business Incubator, the local government of Valmiera municipality, Valmiera Development Agency, and Vidzeme Planning Region. This collaboration is carried out both individually and in joint meetings with each institution, advocating for the interests of the study field in strategic planning efforts led by the Planning Region and municipality. This includes analyzing development issues, providing feedback to higher political institutions such as ministries, and developing strategic documents. Additionally, close collaboration enables the swift dissemination of information regarding necessary competences for regional and municipal companies, as well as business incubator clients. Overall, this coordinated effort promotes effective communication and cooperation within the region to drive its development forward (SAR, p.66-67).
Collaboration with educational institutions, such as vocational education and higher education institutions, is a priority for ViA. Through scientific projects and joint initiatives, ViA aims to promote

knowledge transfer and provide students with opportunities for cooperation and scientific research, thereby strengthening the study programs. One example is the IT security seminar https://cert.lv/lv/2020/11/it-drosibas-seminars-esi-dross-decembri , which demonstrates ViA's commitment to promoting awareness and understanding of relevant topics beyond the academic setting. In addition, the ViA library is open to the public and serves as a valuable resource for both ViA students and local schools (input from the excursion to the ViA library).
Joint doctoral study program "Sociotechnical Systems Modelling" is created and implemented in cooperation with Rēzekne Academy of Technology thus promoting a strong cooperation between two Latvian regions (SAR, p. 122-146, meeting with the directors of the study program).
Most of the ViA study programs are professional and include students internship in partners companies and organizations. This ensures that students are equipped with the skills and knowledge needed to succeed in the job market. Several internship agreements are signed with companies (Annex 22P). The normal practice is that internship places become the first employment places for students and allow them to learn the most current technologies and organizational processes in the real job environment thus contributing to achieving learning outcomes of the study programs (inputs from meetings with students and employers).

1.5.2.

The cooperation partners are selected in view of the specific features of the study field and the relevant study programmes.
The foreign cooperation partners suitable for the degree program and study programs are selected based on several criteria, including such factors like previous successful cooperation experience, the partner’s suitability to any of the academic or research directions or/and the study programs directions, mutual interest in forming sustainable cooperation, the partner’s research or academic qualifications (SAR, pp. 67-68, Annex 22P). The goal of cooperation agreements is to strengthen cooperation between ViA and international higher education institutions in both the study and research fields, as well as to promote the mobility of students and staff in a scope of . Erasmus+ program .
One of the most important strategic cooperation networks, which ViA joined in the academic year of 2020/2021, is implemented within the Erasmus+ initiative “European Universities” – EUDRES (SAR pp 67-68. input from meeting with ViA rector and Development vice-rector). Nine higher education institutions from nine European countries (FH St. Poelten/Austria, UCLL University of Applied Sciences/ Belgium, Hungarian University of Agriculture and Life Sciences/Hungary, Saxion University of Applied Sciences/Netherlands, Politecnic Institute of Setubal/Portugal, Polytechnic University of Timisoara/Romania, Fulda University of Applied Sciences/Germany, Jyvaskyla University of Applied Sciences/Finland) combine their resources in the fields of learning, research and innovation to find solutions to the future challenges of the region. Within the framework of EUDRES, the European University model, management concept and joint study courses and programs are being developed; mobility of students and lecturers and joint research are carried out. Since 2021, students of the study field have been involved in the international projects organized by the consortium such as hackathons, Bootcamps, Living Labs, where, under the guidance of experienced international lecturers students worked on the development of solutions/concepts/prototypes for a specific industry/industry need. It contributes positively to the achievement of learning outcomes of the ICT study programs as it allows students to apply theoretical knowledge to the real-life problems and solutions of industry by using the trending study forms like hackathons and Living Labs. It is also very important because a collaboration between students and teachers takes place in an international environment and significantly broadens the cultural and technological diversity of students’ experience (SAR, pp. 67-69, meetings with FE dean and programs directors).
Several cooperation agreements with international universities were signed for providing students

Exchange programs (Annex 22P).

1.5.3.

Teaching staff and students participate in both outgoing and incoming mobility, which provides added value to the implementation of the study process and the quality of studies.
ViA is involved in several activities aimed to increase numbers of mobile students and teachers, such as the Erasmus Exchange program, the EUDRES consortium, the International Week, participation in exhibitions abroad, ViA's social media accounts (SAR, pp 68-70, input from the meeting with rector and development vice-rector).
However, the statistics provided by ViA doesn't show any improvement trend in students and teachers mobility. 34 outgoing students and 117 incoming students participated in Erasmus Exchange program during the years 2014-2021. Meantime, 39 outgoing teachers and 249 incoming teachers have participated during this period in Erasmus exchange program (Annex 23P).
The number of outgoing mobilities during the reporting period among students is three times less than the number of incoming mobilities. The number of outgoing mobilities during the reporting period among teachers is six times less than the number of incoming mobilities.
The management of study programs explained these disproportions by high load of ViA teaching staff and early employment of students (the last factor also was confirmed during the meeting with students).

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
ViA has established a strong cooperation network with Latvian industry associations, individual companies, public and educational institutions of Latvia.
ViA contributes significantly to regional development and the quality of local human capital.
Most of the ViA study programs are professional and include students internship in regional partners companies and organizations thus ensuring compliance with job market requirements.
ViA pioneered the EUDRES initiative of the European University model thus enabling joint study courses and programs, promoting additional mobility of students and lecturers, joint research opportunities, trending study forms like hackathon and Living Labs, cultural and technological diversity.

Strengths:
1 ViA has established a strong cooperation network with Latvian industry associations, individual companies, public and educational institutions of Latvia.
2 ViA strong focus on cooperation with regional public institutions and companies thus directly contributing to the regional development and the quality of local human capital.
3 Joint doctoral study program "Sociotechnical Systems Modelling" is created and implemented in a cooperation with Rēzekne Academy of Technology thus promoting a strong cooperation between two Latvian regions.
4 Most of the ViA study programs are professional and include students internship in partners companies and organizations thus ensuring compliance with job market requirements.
5 ViA joined the EUDRES initiative of the European University model thus enabling joint study courses and programs, additional mobility of students and lecturers and joint research opportunities.

Weaknesses:
1 Low number of outgoing students and teachers Erasmus + mobility program

Assessment of the requirement [3]

1 R3 - The cooperation implemented within the study field with various Latvian and foreign organizations ensures the achievement of the aims of the study field.

Assessment of compliance: Fully compliant

ViA has established a strong cooperation network with Latvian and international partners ensuring compliance of study programs objectives with job market requirements and research level compliance with ICT industry trends. Additional efforts should be made to promote proactively students and teachers outgoing Erasmus+ mobility

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

Analysis

1.6.1. In the previous assessment procedures related to the study field and the corresponding study programmes:
1.6.1.1. accreditation;
During the accreditation process of the study field in 2012 the following improvement recommendations were made (Annex 24P of SAR):
a. Describe and apply learning outcomes at all levels of the study program design and analysis. In particular, evaluation criteria should be attached to learning outcomes
In the academic year of 2018/2019, new course descriptions were developed including there also learning outcomes (knowledge, skills and competences) and assessment criteria for these learning outcomes. (SAR pp 70-72; annexes with study courses descriptions 59P, 30P, 37P, 51P, 44P)
Therefore, this recommendation is implemented.
b. Discuss regularly the content of study program with regional employers. Gather regularly feedback from all the stake holders. Department should collect and analyze data about the changing requirements on labour market.
FE (Faculty of Engineering) has established good relationships with employers both regional and state – wide (SAR pp 70-72, inputs from meetings with employers and study programs directors). The employers are involved in the development of study programmes and teaching the courses. Advisory councils of study programmes were established, meetings with representatives of the industry are organized to discuss the current situation in the industry, possible changes and how it might affect the study programmes. However there is no data available to prove how decisions about changes or corrections are made, mostly ad-hoc approach is applied when decisions about necessary changes/corrections are made.
Therefore, this recommendation is implemented partly, and more systematic and documented approach to cooperation with employers should be developed.
c. Encourage also bachelor degree students to participate in scientific research
The study course Research development and presentation skills (Annex 59P of SAR) is added to the Professional Bachelor Information Technologies 42484 and it is included in the 4th semester of the study plan (Annex 58P of SAR). However the Professional. Bachelor Mechatronics 42523 does not include the corresponding course. Within the framework of the projects FE researchers involve undergraduate students in the projects (SAR, pp 70-71).
Therefore, this recommendation is implemented partly, the Professional. Bachelor Mechatronics 42523 study program should be also reviewed to involve students in research activities
d. Widen essentially the spectrum of operating systems and network equipment used for practical training
Following this recommendation FE has expanded the spectrum of operating systems and network

equipment used in the computer network laboratory and the laboratory of data transmission networks by using the ERDF funded project “Modernization of the STEM study environment of Vidzeme University of Applied Sciences” (SAR p. 71, excursions to labs during the visit to ViA).
Therefore, this recommendation is implemented.
e. Develop staff qualification improvement plan. Individual competence development plans should be elaborated.
In the reporting period, teachers had the opportunity to improve their English language, digital training and academic leadership skills, as well as the opportunity to undergo internships in companies within the program "Growth and Employment"", project "Development of the academic staff of Vidzeme University and development of human resources". During the meeting with study direction management and teachers no concerns were indicated about possibilities to develop competences for staff. Individual development plans discussed with teachers, however the approach to this topic is mostly implemented in the ad-hoc mode.
Therefore, this recommendation is implemented partly, and more systematic and documented approach to staff qualification improvement should be developed.
f. Concerning the Master's programme Sociotechnical systems modeling:
define more precisely the knowledge which graduates will get
define precisely subjects of the study programme
acquire software tools for validation and verification simulation models
state clearly which practical experience has to received during practical training
The Master program Sociotechnical systems modeling is closed, based on the decision no. 4 of Engineering faculty Council, from 23.02.2018. (Annex 24P of SAR).
However, it should be noted that two new master programs are opened
Prof. Master Cybersecurity Engineering 47482 (from year 2018)
Prof. Master Master Virtual reality and smart technologies 47484 (from year 2018)
The total number of students who studied in the both programs is only 27 (by 1.10.2022).
Additionally it should be noted that there is no professional standard for Virtual reality and smart technologies occupational area in Latvia, so it is problematic to define competencies areas which should be covered by professional Master program Virtual reality and smart technologies 47484 .
Therefore, the recommendation regarding the Master program Sociotechnical systems modeling is implemented in the radical way and the study program is closed . However, there are additional concerns which arise regarding the new master study programs
Prof. Master Cybersecurity Engineering 47482 (from year 2018)
Prof. Master Master Virtual reality and smart technologies 47484 (from year 2018)
due small number of students in both programs and absence of professional standard for Virtual reality and smart technologies occupational area in Latvia.
Cooperation with the ICT industry is needed in order to create the professional standard for Virtual reality and smart technologies occupational areas, thus enabling the possibility to award a professional qualification upon successful graduation of the study programme’s Professional Master “Virtual reality and smart technologies” 47484.

g. Concerning the Doctoral study programme Doctor Socio-technical systems engineering Joint with Rēzekne Academy of Technologies (RAT) 51482:
The study content must contain more subject about general models used in Computer Science and Engineering; currently, the programme has not enough subjects from computer science, however doctoral degree will awarded in Comp.Sc. or Sc.Eng.;
The aim of the study program must define knowledge which will be presented in the programme;
Elaborate clear methodology for studies
Doctoral study field should be widened.
In the academic year of 2018/2019, more general models were included in the course “Engineering

of Sociotechnical Systems Requirements", covering the following topics Requirements specification methods in the context of developing socio-cyber-technical systems, Specifying requirements in the framework of Internet of Things technologies for the development of a digital twin (SSM methods), Systems modelling methods for requirements engineering, Digital twin development method for defining the requirements of sociotechnical systems, Methods of verification and validation of models of sociotechnical systems (overview, comparison), Aspects of security modelling of cyber-socio-technical systems, Specifying requirements in service-oriented and cloud computing, Requirements verification and validation (methods, their comparison), Cyber Security Requirements Engineering (SAR, p.72; Anex 44P).
Starting from the academic year of 2019/2020 the proportion of computer science courses in the programme was increased (SAR, p.72). The doctoral study program Socio-technical systems engineering Joint with Rēzekne Academy of Technologies (RAT) 5148251482 includes professional foreign language course ((English) (4CP), Research methodology and modelling data processing I & Research methodology and modelling data processing II courses (4CP), Scientific - academic work (100CP), and several IT specific modelling and requirements engineering course (total 12 CP) (Annex 43P and 44P).
During 2019/2020 academic year, the purpose of study program was re-defined and clear study methodology was developed (Annex 24 P)
Therefore, the recommendation is fulfilled.
1.6.1.2. licensing of study programmes (if applicable);
During the accreditation period three new programs were licensed:
Professional. Bachelor "Mechatronics" 42523 (license No. 04031-22, 25.09.2017)
Professional Master "Virtual reality and smart technologies" 47484 (license No. 04031-23, 30.05.2018)
Professional Master "Cybersecurity Engineering" 47482 (license No. 04031-25, 13.06.2018)
The recommendations of licensing experts on Professional. Bachelor " Mechatronics" 42523.
11 recommendations were made in total (see Annex 24P of SAR).
The following corrections were made by ViA following these recommendations (SAR, p.73):
the descriptions of courses improved by adding specific objectives and results of the study program;
the distribution of contact hours and individual working hours are more clearly indicated in the course descriptions;
the goals and tasks of production and pre-diploma internship were clarified;
a study program advisory board has been established and bigger involvement of employers in the development of the study program is provided;
corresponding corrections to the study plan were made and the compliance of the study program to the national education standard achieved;
new equipment was provided to students of the study program;
new teaching staff have been attracted to the study program, increasing the proportion of teaching staff who have a doctoral degree and scientific publications in the field of Mechatronics.
Therefore, the recommendations of the licensing experts on Professional. Bachelor Mechatronics 42523 were fulfilled.
The recommendations of licensing experts on the professional Master program "Virtual reality and smart technologies" 47484.
20 recommendations were made in total (see Annex 24P of SAR).
The following recommendations are already implemented:
the content of the study agreement is specified;
the title of the study programme has been changed to "Virtual Reality and Smart Technologies";
clarified the section of the study programme description on the employment prospects of graduates;
the content of the study course "Mobile Technology Solutions" has been updated;
additional academic staff is attracted.

The implementation of the following recommendations is still in the process:
to include additional courses on artificial intelligence;
to provide students with in-depth knowledge of database management systems suitable for VR/AR solutions within existing or new courses;
to develop a user experience course that addresses issues relevant to VR/AR solutions, rather than providing a general theory of user experience;
to include a specialized IT security course of study, offer free elective courses, enabling students to specialize further in VR/AR;
to explore a funding plan in a case target numbers of the students will be not achieved;
to review and update the document "Internal Quality Assurance of Vidzeme University of Applied Sciences in the Study Process" with the involvement of external parties in the quality assurance process and how quality monitoring is ensured;
to develop mechanisms to promote interdisciplinary research.
Therefore, the recommendations of the licensing experts on the professional Master program “Virtual reality and smart technologies” 47484 are partly fulfilled.
The recommendations of licensing experts on the professional Master “Cybersecurity Engineering” 47482.
9 recommendations were made in total (see Annex 24P of SAR)
The following corrections were made by ViA following these recommendations (SAR, p.72-73):
to provide clarification on the admission requirements of the study programme;
to provide an explanation of the student's intellectual property rights as stipulated in the study agreement;
to correct inconsistencies in course descriptions (translation errors, title inaccuracies, missing course codes);
to provide clarification on the language of study for Latvian and international students;
to assess and implement changes to the descriptions and implementation of MKI_015, MKI_016, MKI_021, MKI_023 study courses.
The implementation of the following recommendations is still in the process:
to move away from the module system, or to group modules by semesters;
to assess and implement changes to the descriptions and implementation of MKI_002, MKI_006, MKI_010, MKI_011, MKI_016, MKI_025 study courses
Therefore, the recommendations of the licensing experts on the professional Master program “Cybersecurity Engineering” 47482 are partly fulfilled.
1.6.1.3. in the evaluation of changes to the study programmes corresponding to the study field (if applicable);
N/A
1.6.1.4. the inclusion of the study programme on the accreditation form of a study field (if applicable).
N/A
The recommendations provided are partially implemented. The contribution of the higher education institution to the analysis of recommendations and their application to the specifics of the study field and the corresponding study programmes is evident.

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
Following recommendations of the experts of the previous accreditation (2012.) and licensing procedures (2017.-2018) big improvements to ViA laboratories’ infrastructure, study contents, and academic staff capacity were made. However, there are several recommendations that require more urgent attention and implementation. For example, a funding plan needs to be developed in case

the target numbers of students for the new professional Master programmes "Virtual Reality and Smart Technologies" 48484 and the Master “Cybersecurity Engineering” 47482 are not achieved. Additionally, the document "Internal Quality Assurance of Vidzeme University of Applied Sciences in the Study Process" needs to be reviewed and updated with the involvement of external parties in the quality assurance process to ensure effective quality monitoring. The involvement of labor market players and their opinion should be documented and the procedure of decision making taking into account the opinion of cooperation partners should be developed and documented.
The number of students in the new master programs is currently low, so further efforts should be made to promote the availability of these programs both within Latvia and internationally.
Additionally, the form (professional or academic) of the "Virtual Reality and Smart Technologies" 48484 study program needs to be clarified as soon as possible, and corresponding adjustments to the study content (such as internships and academic courses) need to be implemented.

Strengths:
1. The improved study programs infrastructure;
2. The improved capacity of academic staff;
3. The improved study program’s Bachelor Information Technologies 42484’ learning outcomes and objectives description.

Weaknesses:
Some recommendations require continuous improvement, e.g.:
- Low number of students in the new master programs
Professional Master “Virtual reality and smart technologies” 47484 (license No. 04031-23, 30.05.2018)
Professional Master “Cybersecurity Engineering” 47482 (license No. 04031-25, 13.06.2018).

Assessment of the requirement [4]

1 R4 - Elimination of deficiencies and shortcomings identified in the previous assessment of the study field, if any, or implementation of the recommendations provided.

Assessment of compliance: Partially compliant

While progress has been made on some of the recommendations made by previous accreditation and licensing experts, such as improving the infrastructure of study programs and enhancing the capacity of academic staff, there are several recommendations that require more urgent attention and implementation. For example, a funding plan needs to be developed in case the target numbers of students for the new professional Master programmes "Virtual Reality and Smart Technologies" 48484 and the Master “Cybersecurity Engineering” 47482 is not achieved. Additionally, the document "Internal Quality Assurance of Vidzeme University of Applied Sciences in the Study Process" needs to be reviewed and updated with the involvement of external parties in the quality assurance process to ensure effective quality monitoring.

1.7. Recommendations for the Study Field

Short-term recommendations

Need to continue working to complete solving all of the recommendations of the previous evaluation period, e.g.: The involvement of labor market players and their opinion should be documented and the corresponding procedure of decision making should be developed and documented; The funding plan needs to be developed in case the target numbers of students for the professional Master programmes "Virtual Reality and Smart Technologies" 48484 and the Master “Cybersecurity Engineering” 47482 are not achieved.; The form (professional or academic) of the "Virtual Reality and Smart Technologies" 48484 study program needs to be clarified as soon as possible, and corresponding adjustments to the study content (such as internships and academic courses) need to be implemented.

Long-term recommendations

1. Library should incorporate a policy on replenishment of informative provision, including the choice of resources format (physical or digital), putting a larger emphasis on digital resources.
2. Development of didactic, professional, language etc. skills should be tracked for all teachers to ensure high academic staff qualification.
3. Moodle should be overlooked in the english version to make it easier for international students. All the information necessary for the study process and use of the Moodle system should be translated in english. Latvian and English content should be divided.
4. Additional motivation mechanisms should be introduced in order to ensure more active participation of all academical staff members in research activities.
5. Additional efforts should be made to promote proactively students and teachers outgoing Erasmus+ mobility.
6. The number of students in the new professional Master programmes "Virtual Reality and Smart Technologies" 48484 and “Cybersecurity Engineering” 474 is currently low, so further efforts should be made to promote the availability of these programs both within Latvia and internationally.
7. Additional efforts should be made to mitigate the negative effects of the high drop-out rate, especially in the case of parallel working engagement of the students.
8. The calculation of dropout methodology is not transparent, this must be clearly defined.
9. The activity of students, and especially graduated students in fulfilling the questionnaires is not so high, further efforts should be made to encourage them in order to obtain statistically relevant feedback.

II - "Information Technologies" ASSESSMENT

II - "Information Technologies" ASSESSMENT

2.1. Indicators Describing the Study Programme

Analysis

2.1.1.

The professional bachelor study programme Information Technology (42484) is evidently fully

compliant with the study field Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science. This is well assured in pp.172-174 of the SAR.
The Professional Bachelor's study programme "Information Technologies" corresponds most closely to the field of study as it provides study courses for the Professional Bachelor's degree in Information Technologies. The aim of the Professional Bachelor's study programme "Information Technologies" is to prepare qualified specialists - software engineers, for professional activity in the field of information technologies, whose practical and theoretical knowledge, skills and abilities meet the requirements of the modern labour market. The Professional Bachelor's study programme "Information Technologies" focuses on the acquisition of applied knowledge through projects, research projects and dissertations, practical classes and internships.
Within the Professional Bachelor's study programme "Information Technologies", students can specialize in two directions: “Cybersecurity and programming” and “Design of virtual reality and mobile systems”. The choice of specialization was determined by the demand of the industry, as well as by the development perspective in the future. Both specializations contribute to the acquisition of competitive knowledge and skills. This is confirmed by information technology industry companies, stating that ViA students and graduates are demanded specialists in the labor market, and well summarised in the SAR.
The Professional Bachelor's study programme "Information Technologies" corresponds to the study field Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science and its main strategic goal – to prepare qualified specialists in the areas represented by the study field who are able to work for companies, organizations, public and municipal institutions, and who are able to perform tasks related to the profession and are ready to continuously improve their knowledge and skills in a changing environment.

2.1.2.

The title of the Professional Bachelor's study programme "Information Technologies" corresponds to the aim and actual content, as it is well justified in p.173 of the SAR. A sample diploma is adequately provided in Annex 55 (55P_IT_Diploma-paraugs_Diploma-example-red.zip).
The awarded degree (corresponds to the content and also the expectations of such as study programme - the Professional Bachelor's Degree in Information Technology and a qualification as a software engineer are awarded.
The Professional Bachelor's study programme "Information Technologies" is offered in a full-time and part time extramural studies format over a period of 4 and 5 years in Latvian and English in the amount of 160 Latvian study credit points with admission requirements of secondary educational and minimum English level of B2 for a programme form in English.
The educational classification code is 42484 which according to Latvian Education Classification (Latvian Cabinet of Ministers Regulations (Cab, Reg.) No. 322, https://likumi.lv/ta/id/291524-noteikumi-par-latvijas-izglitibas-klasifikaciju), corresponds to the following codification: meaning of the first two digits `42` notes that this study programme is professional bachelor programme (level 6 of Latvian and European Qualification Framework) and the last three digits `484` indicate that this programme is related to the educational group of “Programming” .
The duration and scope of the Professional Bachelor's study programme "Information Technologies" implementation (including different study programme implementation options), as well as the implementation language, are reasonable and well justified.

2.1.3.

The Professional Bachelor's study programme "Information Technologies" went through an accreditation process in 2012, and the recommendations of the expert group have been taken fully into account by the management. Notably, learning outcomes have been specified and described in the course description, and clear assessment criteria have been added to these outcomes. In the academic year of 2018/2019, new course descriptions were developed in accordance with the new form, even more clearly emphasizing the learning outcomes as skills and competences and the corresponding assessment criteria.
The other important recommendation of the accreditation procedure was the regular discussion and improvement of the study programme content with and by regional employers. This is also introduced, and made systematic through the establishment of the advisory council. These advisory councils meet on a regular basis, once or twice a year, which is adequate. The content of the Information Technologies Bachelor study programme was completely renewed, taking into account the opinion of industry representatives. The management is fully aware of the fact that the regular exchange of information with employers must be an ongoing process throughout the lifetime of the study programme..

2.1.4.

It is trivially clear from the SAR (p.175) that the skills and competences that can be acquired in the Professional Bachelor's study programme "Information Technologies" are among the most popular and most needed skills in today’s economy. This evidently holds for the local and country-level economical sphere as well. Therefore the existence of the Professional Bachelor's study programme "Information Technologies" is very well justified.
There is an instant as well as long term need for graduates, which is well supported by data in the SAR. At the time of preparing of the SAR, 879 vacancies are available in the area of Information Technologies on the largest Latvian vacancies portal – www.cv.lv. It is the largest number of vacancies on the portal. Likewise, the study on the Latvian labour market forecasts for 2040 prepared by the Ministry of Economics points out the growing demand for highly qualified workforce which is educated in the subjects of exact sciences and information technologies due to the increase in the use of technology in everyday life and digitization processes. In accordance with research forecasts, it is estimated that the shortage of specialists in the STEM directions may reach as many as 14,000 by 2027.
The CSB data show that around 700 young specialists in the field of Information Technologies graduate from higher education institutions in Latvia every year, however, this number is insufficient to cover the market demand for highly qualified IT specialists. Thus, students of this study programme are already involved in the labor market during their studies (on average in their third year of studies) and most of them continue working in the industry even after graduation from ViA.
As one can observe from the data of incoming students, this is one of the most popular study programmes of the institution, and the high intensity of interest is even growing. The employment rate is very high, practically every graduated students can find a job in the IT industry or at governmental organizations.

2.1.5.
n/a

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
The Professional Bachelor's study programme "Information Technologies" is evidently fully compliant with the study field. The skills and competences that can be acquired in the Professional Bachelor's

study programme "Information Technologies" are among the most popular and most needed skills in today’s economy, including the need of local and country-level economical players. Therefore the existence of the Professional Bachelor's study programme "Information Technologies" is very well justified. The recommendations of the preceding accreditation procedure have been fully taken into account.

Strengths
1 The Professional Bachelor's study programme "Information Technologies" is very popular with large cohorts.
2 The industrial partners are well involved in the continuous improvement of the Professional Bachelor's study programme "Information Technologies"
3 The career perspectives of the graduated students are very good.

Weaknesses
none

2.2. The Content of Studies and Implementation Thereof

Analysis

2.2.1.

The Professional Bachelor's study programme "Information Technologies" (42484) (study programme IT) is offered in two study forms:
Full time studies - 4 years (160CP)
Part-time studies – 5 years (160 CP).
Part-time studies offer more flexibility for students who are already employed or have other commitments, allowing them to balance their studies with their other responsibilities. It is a trend that has been gaining popularity in recent years, with 31% of students admitted to the study programme IT between 2020-2022 choosing part-time studies (Annex 2P of SAR). While this is a positive development, the Faculty of Engineering must ensure that the quality of part-time studies is not compromised. This is particularly important given that Latvian Law on Higher Education Institutions stipulates that the content, scope, and outcomes of study programmes, as well as the assessment of achievements, must be the same for both full-time and part-time students (Section 57, item 8 of the Law on Higher Education Institutions, as amended on 15.09.2022 and in force from 11.10.2022).
However, an analysis of the study course descriptions (Annex 59P 59P_IT_Kursu apraksti_Course Descriptions.zip) has revealed several discrepancies between the study plans for full-time and part-time students. For example,
The description of the study course “Internet of Things (IoT) and sensor networks” (2CP) shows that it is available for full -time students only and does not contain a study course plan for part-time students.
The study course plan for “Javascript programming” for part-time students does not include certain topics that are covered in the full-time course, such as "Functions, methods and their use" and "Data acquisition and visualization".
The study course plan for “Industrial Psychology” for part-time students does not include “I-O Psychology lecture” that is available for full time students.
To ensure compliance with state regulations and maintain the quality of part-time studies, all study course descriptions and implementation practices must be reviewed. This will help to ensure that the content, scope, and outcomes of study programmes are the same for both full-time and part-time students, and that part-time students have access to all of the same resources and learning

opportunities as the full-time students.
The study programme IT provides opportunities for two specializations: cybersecurity and virtual reality. The specializations objectives have been achieved with the corresponding specialization elective courses and specialization internship (Annexes 58P (58P_IT_Studiju programma_LV_Study plan_ENG_red-corr.xlsx) and 60P (60P_IT_Kartejums_Mapping-red-corr.xls) of SAR).
The cybersecurity specialization courses are focused on cybersecurity and data science topics. The following courses are included in cybersecurity specialization: Introduction in Cyber-Security (2CP), Applied Cryptography I (2CP), Applied Cryptography II (2CP), Introduction to AI and machine learning (2CP), Data protection and security (4CP), Introduction to data science (4CP).
The virtual reality (VR) specialization courses focus on 3D modelling and development principles and techniques, mobile applications engineering principles and techniques. The following courses are included in VR specialization: Basic principles of UX (2CP), Mobile Software Engineering I (2CP), Mobile Software Engineering II (2CP), 3D modeling in Blender (4CP), iOS mobile app development (2CP), Development of Three-dimensional Interactive Environments (4CP).
The curriculum of the study programme IT is based on the compulsory part A with the total number of credit points 124 and the restricted elective part B with total number of credit points 44. Part B includes also elective specialization courses for cybersecurity and virtual reality (16 CP for each specialization) (Annex 58 P of SAR).
Both parts of the study programme IT are topical, interconnected and complementary (Annex 58P of SAR).
Part A contains the following mandatory courses and study activities: Basics of programming I (4CP), Applied Mathematics (4CP), English for Specialisation (2CP), Introduction to specialty (2CP), Basics of economics in IT companies (2CP), Database Technologies (4CP), Data Transmission networks I (2CP), Data Transmission networks II (2CP), Data Transmission networks III (2CP), Computer Architecture (2CP), Basics of programming II (4CP), IT Management and Leadership (2CP), Windows operating system (2CP), Professional Communication in IT Projects (2CP), Research development and presentation skills (2CP), Introduction to Python Programming and Data Exploration (2CP), Work, environmental and civil protection (2CP) , Physics specialty I (2CP), Physics specialty II (2CP), Linux Server Administration (2CP), Python OOP and UML (2CP), Software development principles from operations perspective (4CP), Statistics in Engineering (4CP), Internet of Things(IoT) and sensor networks (2CP), Industrial psychology (2CP), Web Technologies (4CP), Basic principles of database (4CP), Configuration of MikroTik devices (2CP), GIS (Geographical Information Systems) (2CP), Object Oriented Programming Language (C ++) (4CP), Algorithms and Data Structures I (2CP), Cultural intelligence (2CP), Business process analysis and modeling (2CP), Project management in engineering (2CP), Year Project (4CP), Traineeship (22CP), Bachelor thesis (12CP).
Part B contains the following restricted elective courses common to both specializations (12 CP in total): Foreign language (German or French) (2CP), Testing and automation tools (2CP), JavaScript programming (2CP), Cross-platform solutions (e-business systems) (2CP), Industry rights (2CP), Software Engineering (2CP).
Additionally, Part B contains elective courses for both available specializations:
Cybersecurity specialization (16 CP in total): Introduction in Cyber-Security (2CP), Applied Cryptography I (2CP), Applied Cryptography II (2 CP), Introduction to AI and machine learning (2 CP), Data protection and security (4CP), Introduction to data science (4CP).
Virtual reality specialization (16 CP in total): Basic principles of UX (2CP), Mobile Software Engineering I (2CP), Mobile Software Engineering II (2CP), 3D modeling in Blender (4CP), iOS mobile app development (2CP), Development of Three-dimensional Interactive Environments (4CP).
It should be noted that summing up the credit points of Part A and part B courses both common and specialization specific, the students would get 152 CP (124 CP+12 CP +16 CP). In order to reach the target 160 CP the students should take elective courses from the another specialization list. For example, students specializing in cybersecurity could opt for the following courses from the VR

specialization: Basic Principles of UX (2CP), Mobile Software Engineering I (2CP), and Mobile Software Engineering II (2CP). Similarly, VR specialization students could choose courses such as Introduction to AI and Machine Learning (2CP) and Data Protection and Security (4CP). All specialization courses are beneficial for students, as they are based on trending technologies (Annex 59P of SAR), and the corresponding skills are in high demand in the job market.
The content of the study programme IT was improved in the years following the last accreditation in year 2012 by the introducing a new study approach - the active learning classroom (ALC), developed in the scope of the project “Next Generation Micro Cities of Europe” in 2020 (SAR, p.178; input from the observation excursion to ViA facilities). ALC layout provides for convenient adjustment of the room in accordance with the study needs and for different size and format group work allowing split and merge students groups for their project assignments and ideas exchange.
The ALC approach is included in several study courses: Computer Architecture (2CP), Professional Communication in IT Projects (2CP), Introduction to Python Programming and Data Exploration (2CP), Work, environmental and civil protection (2CP), Algorithms and Data Structures I (2CP), Cultural intelligence (2CP) (Annex 58P of SAR).
Following the ICT industry trends the new study courses were added (SAR, p.171): Geo-information systems (GIS) (2CP), Physics for speciality (4CP), Introduction to Python programming and data exploration (2CP), Python OOP and modeling (2CP), Life cycle of software implementation and maintenance, and process automation (4CP), Industrial psychology (2CP); Internet of things and sensor networks (2CP), JavaScript programming (2CP).
Description of study programme IT tasks and results have shortcomings. The knowledge gained as a result of learning the study programme IT is not adequately described. They include simply listing the titles of study courses. The defined tasks of the study programme IT are the same for all ViA bachelor and master level study programmes.
Learning outcomes (LO) of the study programme are clearly defined and mapping of the IT Ba study programme LO to the LO of the individual courses was fulfilled (SAR pp. 178-180), Annex 60P of SAR .
The study programme IT has been offered in two languages: Latvian and English. If international students were to be admitted to the study programme IT Ba, they would be required to take a mandatory study course "Latvian Language and Culture" (2 CP) in the first semester. This requirement is in place to ensure compliance with Latvian state regulations (Annex 58P of SAR). International students mostly participate in Erasmus + exchange program (117 students in the year 2014-2021, Annex 23P).
The study programme IT has been developed in close cooperation with specialists of leading companies in the industry (such as Valmiera Glass, Latvenergo, Lightspace Technologies;Tet,etc); the content of the study courses is regularly updated with the development trends of the industry, based on the recommendations of lecturers, visiting lecturers, members of the Advisory Council and the State Examination Commission, as well as taking into account student suggestions (SAR, p.178; input from the meeting with employers and partners of ViA).
The Faculty of Engineering has provided the detailed course descriptions for the study programme IT (Annex 59P of SAR)). These descriptions include the courses' objectives, prerequisites, learning outcomes, and content, demonstrating that the content of the study courses is interconnected and allows for the achievement of study programme IT objectives.
The content of some study course programmes (range of lecture topics) in part-time studies is smaller than in full-time studies that do not comply with the Clause 57 Paragraph 1(8) of the Law on Higher Education institutions.
The compliance of the IT study programme with the Regulations of the Cabinet of Ministers of August 26, 2014 no. 512 "Rules on the state standard of second-level professional higher education" was carried out (Annex 56 of the SAR).
The analysis covers such indicators as the study programme IT goals, achievable learning outcomes,

credit points value, duration, mandatory and elective courses, thesis requirements, contact classes, compliance with mandatory laws (the Environmental Protection Law, Civil Protection, Disaster Management Law), degree awarded, opportunities for further studies.
The compliance analysis was carried out correctly, and the results demonstrate that study programme IT fully complies with the state regulations.
Compliance of the study programme IT with the professional standard " Programming engineer" was carried out in Annex 57 (Programmēšanas inženiera profesijas standarts, SASKAŅOTS Profesionālās izglītības un nodarbinātības trīspusējās sadarbības apakšpadomes 2009.gada 17.jūnija sēdē protokols Nr.5, https://registri.visc.gov.lv/profizglitiba/dokumenti/standarti/ps0227.pdf) and compliance confirmed.

2.2.2.
N/A

2.2.3.

The Faculty of Engineering (FE) employs a variety of study methods to achieve the study programme IT goals, including lectures, laboratories, project-based assignments, the active learning classroom (ALC) setup, internships, and independent study. The lectures are recorded and are available for students to review in Moodle or Microsoft Teams environments. Virtual study environments are actively used by students whenever they are not able to attend classroom lectures. Moodle environment is also used by students to submit practical assignments (input from meeting with students). All employed methods contribute to student-centered learning.
Erasmus mobility program is available for study programme IT students and also contributes to student-centred learning, however only a small part of bachelor study programme really uses this opportunity. 34 students in total from all study programs of ViA participated in Erasmus outgoing activities in the last 8 study years (Annex 23 P of SAR). More motivation and promotion activities from FE would be needed to change this situation and achieve at least the same number of outgoing Erasmus students as incoming Erasmus students. It should be also noted that the mobility statistics provided by ViA is not descriptive and transparent enough as it shows all study programs and study fields together. Separate records for specific study programs are needed to make a quality analysis.
In 2020, active learning classrooms (ALCs) were set up within the framework of the initiative “Urban Innovative Actions” of the project “Next Generation Micro Cities of Europe”, which are suitable for the use of active learning approach methods, face-to-face and remote group work. ALCs are equipped with the latest technologies and software. In the individual courses, lecturers use the project based learning (PBL) method in combination with ALC. PBL is a method by help of which students acquire knowledge and skills by engaging in real and meaningful projects. ALC-PBL’s main goal is to promote innovation and knowledge transfer (Input from the excursion to the ALC classroom).
Regular student surveys are conducted after each study course to assess the study program organizational processes, study courses content, and teacher performance. These surveys also provide students with an opportunity to suggest improvements to the program. Additionally, students can discuss their concerns and ideas for improvement during individual meetings with the study program's management and teachers (Annex 14P of SAR, input from meetings with students, meetings with study program director and dean).
The study programme IT director analyzes the survey results, as noted in Annex 14P of SAR. However, a more detailed analysis of students' feedback is necessary, including year-on-year trend analysis, analysis of survey open-ended questions' suggestions, and defining triggers for certain decisions or actions, such as changing study courses, teachers, or introducing new technologies.
It is worth also noting that the study program IT Ba received the lowest mark among ViA's ICT study

field programs in the spring semester of 2022, with an average score of 4.1, compared to 4.6 for the Cybersecurity Master program, as indicated in Annex 14P of SAR. Further analysis is required to identify areas for improvement and implement effective strategies.

2.2.4.

If the study programme is implemented in a foreign language, provide an assessment of the provision of internship in a foreign language, including for foreign students.
The study programme IT includes two internships which are split in two parts: specialization internship (14 CP) and pre-diploma internship (8CP)). Full-time students undertake these internships in their 7th and 8th semesters, while part-time students do so in their 8th and 9th semesters, as outlined in Annex 58P of SAR. The objectives and tasks of both internships are clearly defined and described in the Internship Regulations and Requirements document (Annex 61P of SAR).
The goal of the specialization internship is to provide students with an opportunity to develop their professional skills under the guidance of specialists working in the IT industry. They will also have the chance to participate in the operation of a real company in accordance with the duties of a programmer and programming engineer, as defined in the Occupational Standards. Meanwhile, the pre-diploma internship aims to provide students with an opportunity to participate in the development of specific projects related to the company and to prepare all relevant documentation. Both internships are designed to help students achieve the objectives of the study programme IT.
To ensure that students are aware of upcoming internships, information is sent to them in due time, with reminders given in the spring semester of the third year. This approach ensures that timely feedback is obtained on the number of students who may require support in finding an internship. Internships are offered by public and municipal institutions of the region, production companies, ViA cooperation partners. Information about available internships is posted on the ViA website, and emails from external industry companies asking students to choose an internship with them are also forwarded to students (SAR, p. 185).
The standard practice of FE is to organize internships in the places where students are employed. If students need help to find an internship place the study program director helps them to do it. ViA has signed several contracts with industry and public institutions to provide internship for study programme IT students (Final_PIEL_sadarbības līgumu saraksts_LV_Eng_labots.xlsx).
Internships are defended before the internship defense commission, which is established by the Director of the program. The commission consists of the teaching staff of the program, including professional lecturers and representatives of the academic staff of ViA. The internship supervisor evaluates the student's performance during the internship on a 10-point scale, considering the practical work skills and knowledge acquired by the student during the internship, as well as the student's attitude towards fulfilling their duties. The overall assessment of the internship comprises three components: the assessment given by the internship supervisor (25%), the internship report (50%), and the internship defense (25%), as described in SAR pp. 185-186.
As the study programme IT is open to international students, the internship regulations are also available in English. International students are offered internships in companies with English-speaking staff, such as Accenture and Valmiera glass.

2.2.5.
N/A

2.2.6.

From 2013 to 2022, a total of 234 Bachelor's papers were defended in thestudy programme IT. The Annex 62P of the FE SAR provides a full list of these papers, which confirms that the topics of the

final theses are relevant to the ICT field and align with the study programme IT objectives and tasks.
The FE SAR (pp. 187-188) analyzes the Bachelor's papers and divides them into five thematic areas. The majority of the papers (43%) focus on the design of various systems, followed by the design of websites, web applications or online stores (18%), design of mobile solutions (13%), design of computer games (8%), and various types of mechatronic systems and/or automated systems (5%). Notably, only 4% of the Bachelor's papers in the reporting period provided VR and cybersecurity solutions (SAR, p.188), which are two main specializations offered within the IT Ba program.
The average grade for the Bachelor's papers ranged from 6.8 to 7.8 over the last ten years, with 53% of papers receiving top marks - very good (8), excellent (9), or outstanding (10) (SAR, 186). These figures demonstrate the quality of the study programme IT.

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
The study programme IT study courses are topical, interconnected and complementary.
The learning outcomes of the study courses are clearly defined and are in full compliance with study programme IT goals and tasks.
To ensure compliance with state regulations and maintain the quality of part-time studies, all study course descriptions and implementation practices must be reviewed. This will help to ensure that the content, scope, and outcomes of study programmes are the same for both full-time and part-time students, and that part-time students have access to all of the same resources and learning opportunities as the full-time students.
The study programme IT content corresponds to the industry trends and expectations of the labor market.

Strengths:
1 The study programme has been developed in close cooperation with specialists of leading companies in the industry;
2 The content of the study courses is regularly updated with the development trends of the industry, based on the recommendations of lecturers, visiting lecturers, members of the Advisory Council and the State Examination Commission
3 The study programme IT provides part-time studies’ form that offer more flexibility for students who are already employed or have other commitments, allowing them to balance their studies with their other responsibilities.
4 The study programme IT provides opportunities for two specializations: cybersecurity and virtual reality;
5 The study programme IT is practical and includes a specialization internship
6 The active learning classroom (ALC) methodology is developed and implemented in the several study courses

Weaknesses:
1 The number of B part specialization specific courses is not enough to achieve the study program’s 160 CP target. This is not a critical weakness as there are courses available for the second specialization.
2 The content of some study course programmes (range of lecture topics) in part-time studies is smaller than in full-time studies
3 A detailed analysis of students' feedback is missing, including year-on-year trend analysis, analysis of survey open-ended questions' suggestions, and defining triggers for certain decisions or actions,

such as changing study courses, teachers, or introducing new technologies.
4 Only a small part of the Bachelor's papers in the reporting period provided virtual reality and cybersecurity solutions, which are two main specializations offered within the study programme IT.

Assessment of the requirement [5] (applicable only to master's or doctoral study programmes)

1 R5 - The study programme for obtaining a master's or doctoral degree is based on the achievements and findings of the respective field of science or field of artistic creation.

Assessment of compliance: Not relevant

N/A

2.3. Resources and Provision of the Study Programme

Analysis

2.3.1.

Information about the resources and material and technical provision of the programme, including the teaching staff, generally is common to all programmes and it is presented in this report: Resources and provision of the study field.
Study process is implemented at both buildings located in Valmiera. There are 38 classrooms, including 3 computer classrooms for practical classes with a total of 90 workplaces. For the implementation of the study process, 5 laboratories are used: Electronics and Electrical Engineering Laboratory’s equipment provides for a possibility to perform various measurements of direct and alternating current, as well as to perform experiments with various direct and alternating current circuits; Computer Network Laboratory – laboratory equipment provides for a possibility to assemble and disassemble computers; Virtual and Augmented Reality Laboratory – laboratory equipment provides for a possibility to create various virtual and augmented reality projects; Mechatronics Laboratory’s equipment is used to understand the fundamentals of Electric Machinery, Electric Drive, Electropneumatics etc.; Mobile Technology Laboratory equipment provides a possibility to create mobile apps for Android, iOS and Windows environments. Laboratories are available to students for classes, individual and group work and research purposes. (SAR p.40-41)
During the assessment visit, students and graduates all expressed their satisfaction with the available material technical basis.
The informative provision is provided by Valmiera Integrated Library, where books and archives of the best scientific papers are available. E-resources can be accessed from anywhere with individual login information. In 2022, there were purchased 4 titles of 4 copies in the IT field. Funding for Vidzeme University of Applied Sciences library collection is not divided by the study fields because during the study process the library resources are often used by students of several study fields. (SAR p.44)
Control and sustainability of the use of financial resources are laid down in the procedure for development, approval, execution and control of the budget of Vidzeme University of Applied Sciences (approved on 26 October 2011 at the ViA Senate meeting, decision No. 10/7.1)
ViA provides all necessary resources and complies with specific features and the conditions for the implementation of the study programme IT.

2.3.2.
N/A

2.3.3.

Funding of the study programme consists of state funded budget places and income from studies paid by the students. Expenses are calculated per each student. Full time student expenses are planned accordingly: direct expenses 46.8% (salaries 36.1%, study process expenses 1.3%, administrative salaries 6.7%, research activities compensation 0.9%, other administrative expenses 1.8%) and indirect expenses 53.2% (salaries 33.9%. other administrative expenses 10.3%, loan repayment 2%, capital expenses 1.2%, building management 5.8%). Part time student expenses are planned accordingly: direct expenses 47.6% (salaries 37.7%, administrative salaries 11.4%, research activities compensation 0.9%, other administrative expenses 1.9%) and indirect expenses 52.4% (salaries 35.4%. other administrative expenses 10.8%, loan repayment 2.1%, building management 2.9%). (Annex 15) Biggest difference can be seen that building management percentages are lower, which can be explained by the fact that part-time students spend less time in the actual auditoriums and therefore the expenses shift to other expenses.
In the previous admissions (2022), there were 62 budget places for full time studies (in Latvia only full-time students can receive budget places). The study fee is 2930 EUR for full time studies and 2344 EUR for part-time studies.
As per Annex 2 the number of students in the programme in study year 2022 /2023 is 232. From this number, 140 students are enrolled in state funded budget places and 77 students are part-time. There is a steady and slightly positive tendency in admissions: in 2022 87 students were enrolled, in 2021 - 70, in 2020 - 85, in 2019 - 72.
The study programme has the minimum number of students to ensure the profitability of the study programme and facilitates the development of the study programme. This is to conclude that ViA has funding available to the study programme, funding sources and the use of funding ensures full implementation of the study process.

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
The study provision is sufficient for the implementation of the study programme. Studies are held at both buildings, the 5 laboratories offer the needed equipment for study process and research activities. The methodological and informative resources are accessible to students and sufficient.
The expenses are planned per each student in a transparent manner. The finances are balanced. The study programme is rentable and the number of students exceeds the minimal numbers.

Strengths:
1 There are 5 laboratories where each provides the needed equipment to gain practical knowledge.
2 The students and graduates are satisfied with the available material technical basis.

Weaknesses:
None

Assessment of the requirement [6]

1 R6 - Compliance of the study provision, science provision (if applicable), informative provision (including library), material and technical provision and financial provision with the conditions for the implementation of the study programme and ensuring the achievement of learning outcomes

Assessment of compliance: Fully compliant

The resources are sufficient for the implementation of the study programme IT. The finances are

balanced.

2.4. Teaching Staff

Analysis

2.4.1.

The SAR (p.190-191), attached Annexes 19P-Docetāju saraksts-List of lecturers-red, Apliecinajums-IF-valsts-valoda.edoc, Apliecinajums-IF-anglu-valoda.edoc and 20P-Docetaju_CV-Acad.Person._CV affirm that the qualification of the teaching staff complies with the requirements for the implementation of the study programme IT and the requirements set forth in the Law of Higher Education Institutions and is appropriate for bachelor study program implementation, allow to achieve the aims and ensure the learning outcomes of the study programme IT in both Latvian and English languages.
Academic staff involved in implementation have the necessary academic (higher) education and/or professional qualifications, e.g, language courses are taught by lecturers with higher education qualifications in philology, pedagogy; lecturers involved in the delivery of specialized courses in the field have higher education qualifications in engineering or computer science; lecturers teaching psychology courses have higher education qualifications in psychology; lecturers teaching legal courses (Industrial Law, Labour, Environmental and Civil Protection) have higher education qualifications in law; lecturers teaching economics courses have higher education qualifications in economics (SAP, p.191).
In accordance with Article 55, Paragraph 1, Clause 3 of the Law on Higher Education Institutions, the description of study content and implementation should include the list of academic personnel involved in the implementation of the program, their qualifications and expected duties. According to the SAR (p.190) the professional bachelor study programme “Information technologies” was implemented by 40 members in the study year 2022/2023 including 12 elected lecturers (6 of them with doctoral degree - 1 professor, 2 associate professors, 3 assistant professors, and 6 with Master’s degree), as well as 28 visiting lecturers and industry professionals – visiting assistants, visiting lecturers, visiting associate professors, visiting professors (4 of them with Doctoral degree, 18 - with master’s degree).
17 of the programme's lecturers are industry professionals, who teach mainly industry specific courses (SAP, p.190). It allows to include the up-to-date information related to the industry, latest developments in the field, the latest trends, software applications, various project management techniques and other topical issues in the content of study courses.
In addition, ViA has involved 3 guest lecturers from foreign universities in order to facilitate the acquisition of international experience, share of foreign academic and professional experience in a broader perspective of the field (SAR, p.190, Annex 19P-Docetāju saraksts-List of lecturers-red). A visiting professor from the USA has been invited to teach one study course (Industriālā psiholoģija/ Industrial Psychology, 2 credit points), a guest lecturer from the Czech Republic has been invited to teach one study course (GIS integration, 2 credit points), and a guest assistant professor from Romania has been invited to teach one study course (Internet of Things (IoT) and sensor networks, 2 credit points) in English in the Bachelor study programme "Information Technologies" (totally 6 credit points) (Annex 19P-Docetāju saraksts-List of lecturers-red). It refers to Article 56, Paragraph 3 of the Law on Higher Education Institutions. The Law states: “the study programs must be implemented in the national language in universities. In a study program that is implemented in the national language, no more than one-fifth of the credit points of the study program may be implemented in other official languages of the European Union, taking into account that this part cannot include final and state exams, as well as the development of qualifications, bachelor's and master's theses”. ViA fulfills the Article 56, Paragraph 3 requirements of the law.

2.4.2.

According to the SAR (p.191, p.10) ViA has set a number of measures to ensure suitability of lecturers for working with students and verify qualifications and competence of lecturers to provide high-quality education.
Firstly, ViA has defined requirements and prerequisites for involvement of academic staff in the implementation of study programmes (SAR, p.50) that are laid down in ViA Regulations on Elections to Academic Positions.
Secondly, ViA has defined job descriptions and responsibilities of lecturers, which lay down requirements for academic work, research, academic and scientific qualification improvement and also for administrative work that the Senate has approved.
Thirdly, ViA implements various activities, including student surveys (course assessment surveys) of each study course taught by the lecturer in the relevant semester of the academic year that are mandatory and study course observations (Meeting with academic staff, meeting with faculty management). It provides an opportunity for lecturers to improve and monitor the quality of their academic work.
Fourthly, once per academic year ViA organizes a seminar for lecturers on the study quality assurance issues in which they discuss their experience/observations gained during the lectures in order to ensure the assessment of the performance quality of ViA academic staff. The Director of the study field organizes an additional meeting if it is necessary to address quality improvement issues in more detail and/or to conduct in-depth research of problems (including document review) (SAR, p.49).
Fifthly, ViA has defined Remuneration Regulations that contain the division of academic work, conditions for research work. In addition, once per academic year (in October), the lecturer has to submit to the Dean of the faculty a report on his or her achievements in scientific work, experience gained in projects, seminars and conferences, if any (SAR, p.49).
In accordance with the Cabinet Regulations of the Republic of Latvia “Regarding Education and Professional Qualifications Necessary for Teachers and Procedure for Improving the Professional Competence of Teachers”, professional development can include international mobility in accordance with the goals of professional development, participation in projects, conferences and seminars. According to the SAR (p.10) the academic staff is given an opportunity to supplement and expand his/her knowledge and professionalism by gaining foreign experience or engaging in internship at foreign higher education institutions/organizations, as well as by participating in relevant seminars and conferences – within Erasmus, etc. mobility programmes in order to ensure improvement of skills, work quality and professional development. The attached annex 23P_Mobilitate_Mobility.xls approves that teaching staff have used the opportunity to participate in staff mobility programme. Totally there were 39 cases of Academic staff mobility during the review period 2014-2021.
In order to ensure the professional development of lecturers in the period from 2018 to 2021, the European Social Fund project “Development of Academic Staff and Human Resources of Vidzeme University of Applied Sciences” (SAM 8.2.2) was implemented within the framework of which the academic staff had the opportunity to increase their knowledge in digital technologies and academic leadership, to learn English, as well as to do internship in industry companies. 9 of the representatives of the academic staff involved in implementation of study programmes of the study field did internship in the following companies: SIA Cognitio IT, AS Valmieras Stikla Šķiedra, SIA LMT, SIA EK Sistemas, SIA Fanout, SIA Sungis, SIA Mikrokods, SIA EK Sistemas (SAR, p.49).

2.4.3.
N/A

2.4.4.

According to annex 21P_ Publikācijas_Publications.xls and 20P-Docetaju_CV-Acad.Person._CV.zip, the scientific activity of academic staff corresponds partly to the recommendations set in the Law on Higher Education Institutions paragraph 3 of the first part in Article 55. Only 8 from 40 members of academic staff involved in the implementation of study programme IT have published publications during the review period. 6 members of academic staff involved in the implementation of study programme IT have participated in the projects during the review period. Only 2 members have participated in scientific conferences during the review period 2014-2021.
According to the prerequisite for involvement of academic staff in the implementation of study programmes defined by ViA, the candidate must have a Master's degree or doctoral degree, as well as knowledge of English at least at B2 level. But if there is no Master's degree, there has to be at least five years of practical work experience in the specialty according to the subject to be taught in the profile subjects of the professional study programmes, submitting documents confirming professional experience and the length of service (SAR, p.50). 17 of the programme's lecturers are industry professionals, who teach mainly industry specific courses (SAP, p.190). So, industry professionals involved in the implementation of study programme IT fulfills the requirement of the Law on Higher Education Institutions and their practical experience, as well as continuous development of competences in the real work environment can be adapted to the performance of research activities.

2.4.5.
According to the SAR (p. 193-194), ViA carries out several activities within the study programme IT to foster cooperation between lecturers that was approved by management of the faculty and academic staff during the assessment visit.
+ The publication of information, for example, guidelines, news in Moodle system (demonstration of Moodle during visit).
+ The general faculty meeting to reflect on the semester and the current issues and challenges of the study programme, which is convened at the end of each semester and in which all programme lecturers where all members of academic staff are invited to participate. The Programme Director reports on current events, student performance, challenges in the programmes. Participants are invited to give their views on both the processes and the promotion of mutual cooperation
+ During the semester, programme lecturers have the opportunity to participate in course hospitalizations and evaluate the work of their colleagues, make recommendations for improving the study process, and share their experience.
+ The professionals which are familiar with each other in the context of the field, communicate directly.
+ The programme director contacts the academic staff and informs them about current developments in the programme or invites them to share their experience in integrating specific students into the study process.

Conclusions on this set of criteria, by indicating strengths and weaknesses

Conclusions:
The qualification of the teaching staff complies with the requirements for the implementation of the study programme IT and the requirements set forth in the Law of Higher Education Institutions and is appropriate for bachelor study program implementation, allow to achieve the aims and ensure the learning outcomes of the study programme IT in both Latvian and English languages. Although almost half of teaching staff are industry professionals, the scientific activity of teaching staff is low. ViA carries out several activities within the study programme IT to foster cooperation between

lecturers.
Strengths
1. Academic staff involved in implementation have the necessary academic (higher) education and/or professional qualifications.
2. 42.5% of teaching staff are industry professionals, who teach mainly industry specific courses that allow to include the up-to-date information related to the industry, latest developments in the field, the latest trends, software applications, various project management techniques and other topical issues in the content of study courses.
3. Guest lecturers from foreign universities are involved in the study programme implementation that facilitates the acquisition of international experience, share of foreign academic and professional experience.
4. Well-thought-out procedure for selection of teaching staff and evaluation of qualifications and competence.
5. Lecturers have the opportunity to participate in course hospitalizations and evaluate the work of their colleagues, make recommendations for improving the study process, and share their experience

Weaknesses:
1. Low scientific activity of teaching staff. Not all members fulfill a requirement of the Law on Higher Education Institutions. Only 8 from 40 members of academic staff involved in the implementation of professional bachelor study programme “Information technologies” have published publications during the review period, but 17 members who work in industry continue to develop their competences in the real work environment that can be adapted to the performance of research activities.

Assessment of the requirement [7]

1 R7 - Compliance of the qualification of the academic staff and visiting professors, visiting associate professors, visiting docents, visiting lecturers and visiting assistants with the conditions for the implementation of the study programme and the requirements set out in the respective regulatory enactments.

Assessment of compliance: Partially compliant

Low scientific activity of teaching staff. Not all members fulfill a requirement of the Law on Higher Education Institutions. Only part of the academic staff in the last six years has published in peer-reviewed editions, including international editions or five years of practical experience.

2.5. Assessment of the Compliance

Requirements

1 1 - The study programme complies with the State Academic Education Standard or the Professional Higher Education Standard

Assessment of compliance: Fully compliant

The attached annex (56P_IT atbilstība izgl.stand._LV_Compliance to edu.stand.ENG-red-corr.doc) affirms that study programme IT complies with the regulations of the Ministers Cabinet of August 26, 2014 no. 512 “Noteikumi par otrā līmeņa profesionālās augstākās izglītības valsts standartu”. Experts invite the management to pay attention to the quality of the study programme IT description. Description of study programme IT tasks and results have shortcomings. The knowledge gained as a result of learning the study programme IT is not adequately described. They include simply listing the titles of study courses. The defined tasks

of the study programme IT are the same for all ViA bachelor and master level study programmes.

2 2 - The study programme complies with a valid professional standard or the requirements for the professional qualification (if there is no professional standard required for the relevant occupation) provided if the completion of the study programme leads to a professional qualification (if applicable)

Assessment of compliance: Fully compliant

Annex 57P_IT atbilstiba prof.stand.-red_Compliance to prof.stand.-corr.xls
confirms that the study programme IT complies with the standard of the Programming Engineer profession (Programmēšanas inženiera profesijas standarts
SASKAŅOTS Profesionālās izglītības un nodarbinātības trīspusējās sadarbības apakšpadomes 2009.gada 17.jūnija sēdē protokols Nr.5
https://registri.visc.gov.lv/profizglitiba/dokumenti/standarti/ps0227.pdf)

3 3 - The descriptions of the study courses and the study materials have been prepared in all languages in which the study programme is implemented, and they comply with the requirements set forth in Section 561 , Paragraph two and Section 562 , Paragraph two of the Law on Higher Education Institutions.

Assessment of compliance: Partially compliant

Attached study course descriptions (Annex 59P_IT_Kursu apraksti_Course Descriptions.zip) are prepared in Latvian and English languages and comply with the requirements set forth in Section 561, Paragraph two of the Law on Higher Education Institutions. Nonetheless, some issues have been identified.
To ensure compliance with state regulations and maintain the quality of part-time studies, all study course descriptions and implementation practices must be reviewed. This will help to ensure that the content, scope, and outcomes of study programmes are the same for both full-time and part-time students, and that part-time students have access to all of the same resources and learning opportunities as the full-time students.

4 4 - The sample of the diploma to be issued for the acquisition of the study programme complies with the procedure according to which state recognised documents of higher education are issued.

Assessment of compliance: Fully compliant

The provided Diploma and its annexes samples (55P_IT_Diploma-paraugs_Diploma-example-red.zip) comply with the criteria set in the Minister Cabinet regulation No.202 “Kārtība, kādā izsniedz valsts atzītus augstāko izglītību apliecinošus dokumentus”. But faculty management should pay careful attention to the information mentioned in the Minister Cabinet regulation No.202 Clause15.
The provided Diploma and its annexes samples have been translated partly. The title of university and text “profesionālā maģistra diploms” and word “Sērija …” on page 2 are not translated. If ViA decides to use the duplicating text in English, experts invite management of ViA to translate Diploma and its annexes’ samples completely.

5 5 - The academic staff of the academic study programme complies with the requirements set forth in Section 55, Paragraph one, Clause 3 of the Law on Higher Education Institutions.

Assessment of compliance: Not relevant

N/A

6 6 - Academic study programmes provided for less than 250 full-time students may be implemented and less than five professors and associated professors of the higher education institution may be involved in the implementation of the mandatory and limited elective part of these study programmes provided that the relevant opinion of the Council for Higher Education has been received in accordance with Section 55, Paragraph two of the Law on Higher Education Institutions.

Assessment of compliance: Not relevant

7 7 - At least five teaching staff members with a doctoral degree are among the academic staff of an academic doctoral study programme, at least three of which are experts approved by the Latvian Science Council in the respective field of science. At least five teaching staff members with a doctoral degree are among the academic staff of a professional doctoral study programme in arts (if applicable).

Assessment of compliance: Not relevant

8 8 - The teaching staff members involved in the implementation of the study programme are proficient in the official language in accordance with the regulations on the level of the official language knowledge and the procedures for testing official language proficiency for performing professional duties and office duties.

Assessment of compliance: Fully compliant

The attached annexes Apliecinajums-IF-valsts-valoda.edoc and 19P-Docetāju saraksts-List of lecturers-red.xlsx affirms that the knowledge of the official/national language of the academic staff involved in the implementation of the study program complies with the Regulations on the extent of knowledge of the national language and the procedure for testing the knowledge of the national language for performing professional and official duties.

9 9 - The teaching staff members to be involved in the implementation of the study programme have at least B2-level knowledge of a related foreign language, if the study programme or any part thereof is to be implemented in a foreign language (if applicable).

Assessment of compliance: Fully compliant

The attached annexes Apliecinajums-IF-anglu-valoda.edoc and 19P-Docetāju saraksts-List of lecturers-red.xlsx affirms that English knowledge level of the teaching staff involved in the implementation of the study program in English is B2 and higher.

10 10 - The sample of the study agreement complies with the mandatory provisions to be included in the study agreement.

Assessment of compliance: Fully compliant

The attached Template of Study agreement (0P-Studiju-ligums-t.sk.-2.8.p.-KOMPENSACIJA_Study-agreement-also-2.8.p.-COMPENSATION.docx) comply with the requirements set in the Minister Cabinet regulation No.70 “Studiju līgumā oblgāti ietveramie noteikumi”.

11 11 - The higher education institution / college has provided confirmation that students will be provided with opportunities to continue their education in another study programme or another higher education institution or college (agreement with another accredited higher education institution or college) if the implementation of the study programme is terminated.

Assessment of compliance: Fully compliant

The Agreements with University of Liepaja on students take over in case of cancellation of study programs (see Vienošanās_studentu_pārņemšanai_IT.pdf in FINAL_ligumi_agreements.zip) affirms that students are provided with opportunities to continue their education in University of

Liepaja professional bachelor study program "Information technologies" if the implementation of the study programme IT is terminated.

12 12 - The higher education institution / college has provided confirmation that students are guaranteed compensation for losses if the study programme is not accredited or the study programme's license is revoked due to the actions (actions or omissions) of the higher education institution or college and the student does not wish to continue studies in another study programme.

Assessment of compliance: Fully compliant

ViA guarantee a compensation for losses to the Student for the credit points not obtained (for which it is not possible to issue an academic statement, if the credits are not obtained due to a fault of ViA) by transferring tuition fee paid by the Student to his or her specified bank account within 1 (one) month if the study programme is not accredited or the study programme license is taken away due to ViA's activity (or inactivity), and the Student does not want to continue studies in another study programme (Annex 0P-Studiju-ligums-t.sk.-2.8.p.-KOMPENSACIJA_Study-agreement-also-2.8.p.-COMPENSATION.docx)

13 13 - The joint study programmes comply with the requirements prescribed in Section 55.(1), Paragraphs one, two, and seven of the Law on Higher Education Institutions (if applicable)

Assessment of compliance: Not relevant

14 14 - Compliance with the requirements specified in other regulatory enactments that apply to the study programme being assessed (if applicable)

Assessment of compliance: Not relevant

Assessment of the requirement [8]

1 R8 - Compliance of the study programme with the requirements set forth in the Law on Higher Education Institutions and other regulatory enactments.

Assessment of compliance: Partially compliant

Not all study courses include a clear description of the organization and tasks of students' independent work.

General conclusions about the study programme, indicating the most important strengths and weaknesses of the study programme

Conclusions:
The study programme IT is evidently fully compliant with the study field Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science. The skills and competences that can be acquired in the study programme IT are among the most popular and most needed skills in today's economy, including the need of local and country-level economical players. The study provision is sufficient for the implementation of the study programme IT. The methodological and informative resources are accessible to students and sufficient. The qualification of the teaching staff complies with the requirements for the implementation of the study programme IT and allows to achieve the aims and ensure the learning outcomes of the study programme IT in both Latvian and English languages. Although almost half of teaching staff are industry professionals, the scientific activity of teaching staff is low.
Strengths:
1. The study programme has been developed in close cooperation with specialists of leading companies in the industry;

2. The content of the study courses is regularly updated with the development trends of the industry, based on the recommendations of lecturers, visiting lecturers, members of the Advisory Council and the State Examination Commission
3. The study programme is rentable and the number of students exceeds the minimal numbers.
4. The industrial partners are well involved in the continuous improvement of the study programme.
5. The career perspectives of the graduated students are very good.
6. The study provision is sufficient for the implementation of the study programme. The laboratories provide needed equipment to gain practical knowledge.
7. Academic staff involved in implementation have the necessary academic (higher) education and/or professional qualifications.
9. Active involvement of industry professionals as lecturers, that allows to include the up-to-date information, latest developments in the field, the latest trends in study courses.
10. Guest lecturers from foreign universities are involved in the study programme implementation that facilitates the acquisition of international experience, share of foreign academic and professional experience.
Weaknesses:
1. The quality of the program description should be improved. Description of study programme tasks and results have shortcomings. The knowledge gained as a result of learning the program is not adequately described. They include simply listing the titles of study courses. The defined tasks of the study programme are the same for all ViA study field programmes.
2. The content of some study course programmes (range of lecture topics) in part-time studies is smaller than in full-time studies that do not comply with the Clause 57 Paragraph 1(8) of the Law on Higher Education institutions.
3. Low scientific activity of teaching staff. Not all members fulfill a requirement of the Law on Higher Education Institutions.
4. Only a small part of the Bachelor's papers in the reporting period provided virtual reality and cybersecurity solutions, which are two main specializations offered within the study programme IT.

Evaluation of the study programme "Information Technologies"

Evaluation of the study programme:

Good

2.6. Recommendations for the Study Programme "Information Technologies"

Short-term recommendations

A detailed analysis of students' feedback, including year-on-year trend analysis, analysis of survey open-ended questions' suggestions, and defining triggers for certain decisions or actions, such as changing study courses, teachers, or introducing new technologies should be done on the regular basis.
To ensure compliance with state regulations and maintain the quality of part-time studies, all study course descriptions and implementation practices must be reviewed. This will help to ensure that the content, scope, and outcomes of study programmes are the same for both full-time and part-time students, and that part-time students have access to all of the same resources and learning opportunities as the full-time students.
Improve the quality of the study programme IT description, i.e. description of study programme IT tasks and results for each study programme should be unique.

The FE management should pay careful attention to the information mentioned and the example given in Annex 3 of the Minister Cabinet regulation No.202. Make changes in the Diploma sample, i.e. translate all the text in English in the translated version of the diploma.

Long-term recommendations

Increase the number of elective courses offered for Cybersecurity and Virtual Reality specializations to provide students with more diverse and specialized options.
Ensure that the content of all study courses (range of lecture topics) in part-time studies and full-time studies is the same.
Develop and implement a proactive strategy to encourage more students to pursue Bachelor's papers in the fields of virtual reality and cybersecurity solutions. This could include providing resources and support for research in these areas, and promoting the value of these specializations in the job market.
Ensure higher involvement of teaching staff in scientific activities, i.e. scientific paper publication, participation in projects, scientific paper review, doctoral thesis review etc.. Increase the number of publications published by teaching staff, i.e. at least one publication during each 2 years.

II - "Mechatronics" ASSESSMENT

II - "Mechatronics" ASSESSMENT

2.1. Indicators Describing the Study Programme

Analysis

2.1.1.

The Professional Bachelor study programme ‘’Mechatronics’’ 42523 is evidently and fully compliant with the study field Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science. It is well justified by the following arguments, described in the SAR (pp. 81-83).
The Professional Bachelor study programme ‘’Mechatronics’’ provides a set of knowledge, skills and abilities relevant to the study field and required in the labour market – understanding of mechatronics systems, preparing mechatronic tasks and acquiring methods for their solution, designing of mechatronic systems, choosing elements, designing and developing schemes and implementing mechatronic systems technologies in
industry and other sectors of the national economy, including programming skills, understanding of the Internet of Things and robotic systems, knowledge of foreign languages, teamwork skills, etc.
The Professional Bachelor study programme ‘’Mechatronics’’ adequately emphasizes the understanding of industrial automated processes, which students learn while working on individual projects, research projects and diploma papers, during practical classes and internships.
As Mechatronics combines engineering fields such as mechanics, electronics and computer sciences, the study programme corresponds to the study field "Information Technology,
Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science", as well as to the corresponding study programme code (42523). Industry 4.0 also includes IT, Mechatronics, Smart Sensors and Digitalisation, so these terms can be considered as common to the field of study.

The main tasks of a mechatronics engineer are well described the SAR, as to develop, modernize and implement mechatronic systems in production, to monitor, diagnose, maintain and repair them, to organize, plan and manage technical processes in production and the personnel under his/her supervision, to advise on innovations in the mechatronics sector and on the possibilities of implementing them in production. The main duties and tasks of a mechatronics engineer are the design, development and modernisation of mechatronic systems, the operation of mechatronic systems, the diagnosis, maintenance and repair of mechatronic systems, the management of technical processes in the enterprise, and other general tasks for the provision of professional activities. Therefore the study programme, its content and study outcomes are closely related to the professional qualification of Mechatronics Engineer and provide the necessary knowledge, skills and competences.
Taking into account the upcoming changes in the Cabinet of Ministers Regulation No 846 "Regulations on Requirements, Criteria and Procedures for Admission to Study Programmes", starting from the academic year 2023/2024, the basic criterion for admission requirements will be all CEs passed by the student, with the possibility to obtain additional points for passing a higher level CE in physics or mathematics.
The Professional Bachelor study programme ‘’Mechatronics’’offers a practically oriented education that meets requirements of the modern labor market and prepares qualified specialists. The purpose of the Professional Bachelor study programme ‘’Mechatronics’’ is to prepare highly qualified specialists – mechatronics engineers for professional activity in various sectors of the national economy, whose practical and theoretical knowledge, skills and abilities meet requirements of the modern labor market. Industry companies indicate that ViA students and graduates are sought after specialists on the labor market. The mapping (31P_MT_Kartējums_Mapping_red.xlsx) of the study courses against the study outcomes of the study programme indicates that the study courses provide the necessary knowledge to achieve the objectives and outcomes of the programme relevant in this study field.

2.1.2.

The title of the Professional Bachelor study programme ‘’Mechatronics’’ corresponds to the aim and actual content, as it is described in the SAR (p. 82). The awarded degree (Professional bachelor's degree in mechatronics) and professional qualification (Mechatronics Engineer) corresponds to the content, the acquired skills and also the employers’ expectations of such as study programme.
The study programme is offered in a full-time studies format over a period of 4 years in Latvian and English in the amount of 160 Latvian study credit points with admission requirements of secondary educational and minimum English level of B2 for a programme form in English.
The educational classification code is 42523 which according to Latvian Education Classification (Latvian Cabinet of Ministers Regulations (Cab, Reg.) No. 322, https://likumi.lv/ta/id/291524-noteikumi-par-latvijas-izglitibas-klasifikaciju), corresponds to the following codification: meaning of the first two digits `42` notes that this study programme is professional bachelor programme (level 6 of Latvian and European Qualification Framework) and the last three digits `523` indicate that this programme is related to the educational group of “Electronics and automation”
The duration and scope of the Professional Bachelor study programme ‘’Mechatronics’’ implementation (including different study programme implementation options), as well as the implementation language, are reasonable and well justified.

2.1.3.

The Professional Bachelor study programme ‘’Mechatronics’’ was lincensed in 2017, and since then

significant improvements have been made. The changes are summarised in pp. 80-81 of the SAR. These are essentially content-related improvements, that is introduction of new courses, and deletion of old ones.
The scope and sequence of individual study courses have been slightly changed, ensuring continuity of content and more successful learning in later courses. For example, the study course Electrical Drives 2KP has been divided into two courses - Fundamentals of Electrical Machines 2KP and Electrical Drives 4KP, which ensures a more complete learning of the course content, with more emphasis on practical classes.
The study process places greater emphasis on strengthening students' practical skills, providing a sufficient theoretical basis for understanding technical issues and solving problems. Using the infrastructure and other facilities provided by cooperation partners, students are given access to materials and equipment that they will encounter in companies to solve practical tasks. Increased use of the study content management system to record student attendance and grades. Communication with students is carried out on the MS Teams platform.
Courses have been removed from the study programme:
Russian Language (2KP)
PLK Application and Programming (4KP)
Metalworking (2KP)
Mechatronics Equipment Supervision, Maintenance, Repair (2KP)
Industrial Automated Process Visualisation II (4KP)
Part orientation, assembly technology and equipment (2KP)
New courses added to the study programme:
Foreign Language (German, French) (2KP)
Intercultural Awareness (2KP)
Physics II (2KP)
Introduction to the specialty (2KP)
Fundamentals of Electrical Machines (4KP)
Courses have changed credit amounts:
Computer Applications in Engineering Mechanics from 4KP to 2KP
Electrical Drives from 2KP to 4KP
Electrical Power Automation from 2KP to 4KP
PLC Programming I from 2KP to 4KP
PLC Programming II from 2KP to 4KP

Course moved from the general education part to the vocational specialization part:
Fundamentals of Computer Systems Administration (2KP)

Course moved from the theoretical core part of the sector to the professional specialization part of the sector:
Electrical Documentation (2KP)

During the reporting period, to optimize the resources of the field of study, a decision was taken to close the College programme in Mechatronics and to redirect resources to strengthen the other study programmes of the field of study.
The most important improvement is that the Professional Bachelor study programme ''Mechatronics'' puts greater emphasis on strengthening students' practical skills.
Overall, the content of the Professional Bachelor study programme ''Mechatronics'' was continuously improved and renewed, also taking into account the opinion of industry representatives. The ViA management is fully aware of the fact that the regular exchange of information with employers must be an ongoing process throughout the lifetime of the Professional Bachelor study programme

''Mechatronics''.

2.1.4.

The skills and competences that can be acquired in the Professional Bachelor study programme ''Mechatronics''are relatively popular and needed skills in a specific field of economy. This evidently holds for the local and country-level economical players as well. Therefore the existence of the Professional Bachelor study programme ''Mechatronics'' is well justified, and it is supported by factual data in the SAR (p.83).
As it is adequately described and justified, the need for highly skilled mechatronics specialists has grown over the past decade. At the time of preparing the self-assessment report, 10 vacancies are available in the fields of technical science, production and industry on the largest Latvian vacancy portal – www.cv.lv.
On a long term basis, the study on the Latvian labour market forecasts for 2040 prepared by the Ministry of Economics indicates that with the increasing use of technology in everyday life, automation, robotization and digitization processes, the demand for highly qualified workforce which is trained in exact sciences and information technologies, including in the field of mechatronics, will increase.
In accordance with research forecasts, it is estimated that by 2027 the shortage of specialists in STEM fields may reach as many as 14,000. Furthermore, estimates of the World Economic Forum show that in 2025 one of the most demanded professions will be data science, the ability to work with artificial intelligence systems and cloud computing services.
Considering the local industrial needs, manufacturing companies located in Valmiera, for example AS "Valmieras stikla šķiedra" (Germany) (glass fibres and glass fibre products), Valmiera – Andren Ltd. (Latvian-Swedish joint venture) (tanks, pipes and other equipment for storing aggressive liquids), Culimeta Baltics SIA (threads and textures, fibreglass products), Food Union / AS "Valmieras Piens" (milk processing, production of dairy products), cooperative society of agricultural services "VAKS" (pre-processing, sale, storage of agricultural products), Valtanks SIA (Sweden) (underground reservoirs, tanks, technological shafts, etc.), and other companies develop and implement new technological processes based on the application of mechatronics, which allow the manufactured products to compete in the world market. About 80-90% of the manufactured products are exported to various countries of the world.
Most of the students of the Professional Bachelor study programme ''Mechatronics'' have been involved in the labor market already during their studies, both within the framework of internships and individually. The employment rate among graduates of the programme is 100% and most of them work in the private sector.
As one can observe from the data of incoming students, the number of students admitted to this programme is quite low, and it is not increasing. With this low number the sustainability of this programme is questionable in a long term, even if the employment rate is high.

2.1.5.
n/a

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
The Professional Bachelor study programme ''Mechatronics'' is evidently and fully compliant with the study field. The skills and competences that can be acquired in the Professional Bachelor study programme ''Mechatronics'' are fairly popular and needed skills in today's IT and Engineering economy, also of local level. The number of students is relatively low, and it is not increasing. The

Professional Bachelor study programme ‘’Mechatronics’’ is subject to continuous development since the date of the lincense.

Strengths
1 The programme is fully compliant with the study field, and provides a relevant skill set as learning outcome.
2 There is a clear need for graduates from the IT and Engineering sector.

Weaknesses
1 The number of enrolled students is very low, making the long term sustainability questionable.

2.2. The Content of Studies and Implementation Thereof

Analysis

2.2.1.

The Professional Bachelor study programme ‘’Mechatronics’’ 42523 (study programme Mechatronics) is offered in full time study form – 4 years (160 CP) with qualification to be obtained Mechatronics Engineer.
The study programme Mechatronics has been offered in two languages: Latvian and English. However, it is important to note that so far, the study programme Mechatronics has only been implemented in Latvian, and no international students have been admitted (SAR, p. 91). If international students were to be admitted to the study programme Mechatronics, they would be required to take a mandatory study course "Latvian Language and Culture" (2 CP) in the first semester. This requirement is in place to ensure compliance with Latvian state regulations (Annex 29P of SAR).
The study programme Mechatronics has been developed in close collaboration with industry specialists from companies and the Association of Mechanical Engineering and Metalworking (MASOC), as well as in cooperation with other higher education institutions where similar study programmes are implemented, for example, Rēzekne Academy of Technologies, Riga Technical University, Ventspils University of Applied Sciences, Liepāja University (SAR, p. 85; input from meetings .with employers and study program director)
The curriculum of the study programme Mechatronics is based on the compulsory part A with the total number of credit points 68, the restricted elective part B with total number of credit points 86, and the free elective courses part C with total number of credit points 6. The curriculum has been designed to provide students with a comprehensive understanding of mechatronics engineering, covering topics such as robotics, automation, and control systems, among others. By working closely with industry professionals, the program aims to equip graduates with the skills and knowledge needed to succeed in the field of mechatronics engineering.
The study programme Mechatronics content is topical, interconnected and complementary:
Part A (Annex 59P of SAR) contains the following mandatory courses and study activities: Introduction to specialty (2CP), Applied Mathematics (4CP), English I (2CP), Cultural Intelligence (2CP), Basics of Economics and Logistics (2CP), Physics I (2CP), Professional communication in engineering sciences (2CP), Work, environmental and civil protection (2CP), English II (2CP), Physics II (2CP), Basics of computer systems administration (2CP), Electrical engineering (4CP), Study work I “Drive technology systems” (2CP), Project management in engineering (2CP), Study work II "Robots and robot control systems" (2CP), Introductory internship (4CP), Production internship (8CP), Study work III "Design of automatic control systems" (2CP), Pre-diploma internship (8CP), Bachelor thesis (12CP).
Part B contains the following restricted elective courses and study activities: Mechanical engineering

drawing (2CP), Adjustments, tolerances and technical measurement (2CP), Basics of Programming (2CP), Mathematics in engineering calculations (4CP), Materials science (2CP), Computer programs in mechanical engineering (2CP), Programming C++ (2CP), Probability Theory and Mathematical Statistics (2CP), Technical Mechanics and Material Strenght (2CP), Electrical measurements (2CP), Power supply and electrical appliances (2CP), Basics of electrical machines (4CP), Automated design (4CP), Electronics (4CP), Computer Architecture I (2CP), Computer Architecture II (2CP), Drive technology systems (4CP), Elements of automatics, their construction, operation and use (2CP), Sensors and their application (2CP), Electrical documentation (2CP), Foreign language (German, French) (2CP), Theory of Machines and Mechanisms (2CP), PLC application and programming (4CP), Electropneumoautomatics (4CP), Basics of designing (4CP), Internet of Things (IoT) and sensor networks (4CP), Organization of production and services (2CP), PLC application and programming II (4CP), Robots and robot control systems (4CP), Visualization of industrial automated processes (2CP), Design of automatic control systems (4CP).
The part C consists of 6 CP free elective courses.
In 2021, the Study Program's Advisory Board conducted a review of the program's content with the assistance of industry representatives (SAR p. 87, Annex 30P of SAR, input from the meeting with the study program director). The review resulted in the addition of new courses featuring industry trending technologies, such as "Sensors and Their Applications" (2 CP) and "Internet of Things and Sensor Networks" (4 CP). Additionally, some outdated courses like "Metalworking" were replaced with more relevant courses like "Basics of Electrical Machines" (4 CP).
The study programme Mechatronics has clearly defined objectives and learning outcomes, and the mapping of individual study courses' learning outcomes to the program's learning outcomes is provided (Annex 31P of SAR).
However, it should be noted that the descriptions of learning outcomes (LO) of the individual study courses (Annex 30 of SAR) need improvement (long term recommendation) to reach
the consistency between the level of detalisation (D),
the relevance of formulations for skills, knowledge and competences (R),
the way how the learning outcomes are proved (P)
Here are some examples of the courses to explain this recommendation:
Study course "Mechatronics": The knowledge, skills, and competences of LO are formulated too broadly and need more detalization (D). The evaluation methods and criteria for LO need to be elaborated (P). The knowledge's description contains formulations typically used in competences' description (R).
Study course "Programming Basics": Improvements are needed in the level of detalisation (D), evaluation methods and criteria (P), and formulations for skills, knowledge, and competences (R).
Study course "Materials Science": Improvements are needed in the level of detalisation (D), evaluation methods and criteria (P), and formulations for skills, knowledge, and competences (R).
Taking into account these examples, all the study programme Mechatronics courses' LO descriptions should be reviewed and improved following the ViA common guidelines and best practices, as well as the Professional Standard's approach in the way skills, knowledge, and competences are defined in the document: (Mehatronikas inženiera profesijas standarts, profesionālās izglītības un nodarbinātības trīspusējās sadarbības apakšpadomes 2022. gada 9. februāra sēdes, protokols Nr. 1, https://registri.visc.gov.lv/profizglitiba/dokumenti/standarti/2017/PS-210.pdf.)

Furthermore, it is worth noting that the study course "Programming Basics" (2CP) currently utilizes the outdated programming language, Pascal. While it may be debatable whether Pascal is a suitable environment for teaching programming basics, it would be more advantageous in terms of the labor market to switch to a language widely used by the industry such as C++, Java, Python, and others.
According to the ViA comments, the experts received by the mistake the old course description version of the course "Fundamentals of Programming" . ViA claims the course is based on the "C++"

programming language and the new course description is added into the system. The move from Pascal to C++ would have been a favorable and acceptable decision. However, such errors are significant and raise additional questions about ViA's quality management system. ViA claims that the new course description is added into the system (see column to the left), but it is unclear what this system refers to. Annex 30P of courses' descriptions in AIKA system contains the same course description of Programming basics based on Pascal language as it was presented initially.
There are several versions of Programmēšanas pamati course's descriptions available at https://luis.lu.lv/pls/va/kursi.startup?l=1%20. One of them is based on Pascal language and indicated as active. Another one is based on C++ and also marked as active.

Compliance of the study programme Mechatronics with the Regulations of the Cabinet of Ministers of August 26, 2014 no. 512 "Rules on the state standard of second-level professional higher education" was carried out (Annex 27P).
The analysis covers such indicators as the study programme Mechatronics goals, achievable learning outcomes, credit points value, duration, mandatory and elective courses, thesis requirements, contact classes, compliance with mandatory laws (the Environmental Protection Law, Civil Protection, Disaster Management Law), degree awarded, opportunities for further studies.
The compliance analysis was carried out correctly, and the results demonstrate that study programme Mechatronics fully complies with the state regulations.
A compliance analysis of the study programme Mechatronics with the professional standard of Mechatronics engineer was conducted (Annex 28, Profesionālās izglītības un nodarbinātības trīspusējās sadarbības apakšpadomes 2022. gada 9. februāra sēdes, protokols Nr. 1, https://registri.visc.gov.lv/profizglitiba/dokumenti/standarti/2017/PS-210.pdf). While the compliance of the study programme Mechatronics content was confirmed, there is a need for the description of learning outcomes (LO) to be reviewed and improved to align with the professional standard's LO approach in a more consistent and transparent way.

2.2.2.
N/A

2.2.3.

FE employs a variety of study methods to achieve the study programme Mechatronics goals, including lectures, laboratories, project-based assignments, virtual learning environments Moodle, Microsoft Teams, Webex, internships at industry companies, and independent study. The lectures are recorded and are available for students to review in Moodle or Microsoft Teams environments. Virtual study environments are actively used by students whenever they are not able to attend classroom lectures. Moodle environment is also used by students to submit practical assignments (input from meeting with students) (SAR, pp 88-89, input from the meetings with students). All employed methods contribute to student-centred learning.
The small number of the study programme Mechatronics students (the averaged number of admitted students since year 2018 to year 2022 is 8; the total number of the graduates by year 2022 is 13, Annex 2P) allows for the individual approach and student-centred learning approach.
Regular student surveys are conducted after each study course to assess the organizational processes, study course content, and teacher performance of the study programme Mechatronics. These surveys also provide students with an opportunity to suggest improvements to the study programme Mechatronics. Additionally, students can discuss their concerns and ideas for improvement during individual meetings with the study programme Mechatronics management and teachers (Annex 14P of SAR, input from meetings with students, meetings with study programme

Mechatronics director and dean).
The study programme Mechatronics director analyzes the survey results, as noted in Annex 14P of SAR. However, a more detailed analysis of students' feedback is necessary, including year-on-year trend analysis, analysis of survey open-ended questions' suggestions, and defining triggers for certain decisions or actions, such as changing study courses, teachers, or introducing new technologies.
Erasmus mobility program is available for study programme Mechatronics students and contributes to student-centred learning, however only a small part of study programme Mechatronics really uses this opportunity (34 students in total from all study programs of ViA in the last 8 study years (Annex 23 P of SAR). More motivation and promotion activities from FE would be needed to change this situation and achieve at least the same number of outgoing Erasmus students as incoming Erasmus students. It should be also noted that the mobility statistics provided by ViA is not descriptive and transparent enough as it shows all study programs and study fields together. Separate records for specific study programs are needed to make a quality analysis.

2.2.4.

If the study programme is implemented in a foreign language, provide an assessment of the provision of internship in a foreign language, including for foreign students.
The study programme Mechatronics has been offered in both Latvian and English, but as of now, no international students have been admitted to the programme. If international students were to join, they would be provided with internship opportunities in partner companies such as Valmiera Glass that have an international staff.
The study programme Mechatronics comprises three internships: the Introductory internship (4CP) in the 7th semester, the Specialization internship (8CP) also in the 7th semester, and the Pre-diploma internship (8CP) in the 8th semester (Annex 29P of SAR). The objectives and tasks of each internship are clearly outlined and contribute to the programme's learning outcomes.
However, it should be noted that the tasks of the Introductory and Specialization internships partially overlap and both internships take place in the 7th semester. Therefore, it is recommended that the integration of these two internships be considered to decrease administrative activities related to student placement in internship positions.
The internships are held in companies or organizations that use mechatronic devices in their production process or CAD/CAM technologies in design. During the internship, the student is expected to perform tasks related to the duties defined in the Occupational Standards for a mechatronics technician and mechatronics engineer (Annex 61 of SAR).
It is the standard practice of FE to organize internships in places where students are employed. If students require assistance in finding an internship place, the study program director is available to help. ViA has signed several contracts with industry and public institutions to provide internships for study programme Mechatronics students (Final_PIEL_sadarbības līgumu saraksts_LV_Eng_labots.xlsx).
The Internship Regulations for Mech Ba study program students are outlined in Annex 61 of SAR.

2.2.5.
N/A
2.2.6.

In 2022, the first thirteen students successfully graduated with a Mechatronics Engineering qualification, as outlined in Annex 2P of SAR. The final theses of all the students have been listed and analyzed in SAR on pages 91-92. The topics covered in these theses are relevant to the field of mechatronics, and can be categorized into the following areas: industrial automation, IoT and

sensors, robots, energy efficiency, and renewable energy sources.
63% of all the theses were graded as excellent or very good, while 31% were rated as good, and only 6% were almost good (1 student). It is worth noting that most of the students completed their theses while employed at reputable organizations, such as AS Valmieras Stikla Šķiedra, SIA Valpro, SIA Baltijas Industriālais Serviss, SIA Baltma, SIA Kulimeta Latvija, SIA Aloja Starkelsen, AS Sadales Tīkli, and SIA Valmieras piens.

Conclusions on this set of criteria, by specifying strengths and weaknesses

Coclusions:
The study programme Mechatronics content is topical, interconnected and complementary and allows for achievement of the study program’s objectives and learning outcomes.
The study programme Mechatronics has been developed in close collaboration with industry specialists from companies and the Association of Mechanical Engineering and Metalworking (MASOC), as well as in cooperation with other higher education institutions where similar study programmes are implemented.
The study programme Mechatronics has clearly defined objectives and learning outcomes, and the mapping of individual study courses' learning outcomes to the program's learning outcomes is provided, however, the descriptions of learning outcomes (LO) of the individual study courses need improvement.
FE employs a variety of study methods to achieve the study programme Mechatronics goals, including lectures, laboratories, project-based assignments, virtual learning environments Moodle, Microsoft Teams, Webex, internships at industry companies, and independent study.
The study programme Mechatronics comprises three internships: the Introductory internship (4CP), the Specialization internship (8CP), and the Pre-diploma internship (8CP). The objectives and tasks of each internship are clearly outlined and contribute to the programme's learning outcomes. However, it should be noted that the tasks of the Introductory and Specialization internships partially overlap.

Strengths:
1 The study programme Mechatronics has been developed and updated in close collaboration with industry specialists

Weaknesses:
1 The descriptions of learning outcomes of the individual study courses lack detalization, relevance of formulations for skills,knowledge and competences, as well as information about methods on how learning outcomes are proved.
2 The study course "Programming Basics" (2CP) is based on the outdated programming language Pascal.
3 A more detailed analysis of students' surveys is necessary, including year-on-year trend analysis, analysis of survey open-ended questions' suggestions, and defining triggers for certain decisions or actions, such as changing study courses, teachers, or introducing new technologies.
4 Low or no students who participate in Erasmus outgoing activities. The mobility statistics provided by ViA is not descriptive and transparent enough as it shows all study programs and study fields together. Separate records for specific study programs are needed to make a quality analysis.
5 The tasks of the Introductory and Specialization internships partially overlap.

Assessment of the requirement [5] (applicable only to master's or doctoral study programmes)

1 R5 - The study programme for obtaining a master's or doctoral degree is based on the achievements and findings of the respective field of science or field of artistic creation.

Assessment of compliance: Not relevant

n/a

2.3. Resources and Provision of the Study Programme

Analysis

2.3.1.

Information about the resources and material and technical provision of the study programme Mechatronics, including the teaching staff, generally is common to all programmes and it is presented in this report: Resources and provision of the study field.
Study process is implemented at both buildings located in Valmiera. There are 38 classrooms, including 3 computer classrooms for practical classes with a total of 90 workplaces. For the implementation of the study process, 5 laboratories are used: Electronics and Electrical Engineering Laboratory's equipment provides for a possibility to perform various measurements of direct and alternating current, as well as to perform experiments with various direct and alternating current circuits; Computer Network Laboratory – laboratory equipment provides for a possibility to assemble and disassemble computers; Virtual and Augmented Reality Laboratory – laboratory equipment provides for a possibility to create various virtual and augmented reality projects; Mechatronics Laboratory's equipment is used to understand the fundamentals of Electric Machinery, Electric Drive, Electropneumatics etc.; Mobile Technology Laboratory equipment provides a possibility to create mobile apps for Android, iOS and Windows environments. The most important laboratory in the implementation of this study programme is Mechatronics Laboratory, where equipment is used for the following study courses: Fundamentals of Electric Machinery, Electric Drive, Electropneumatics, Automation, Programming of Programmable Logic Controllers, Visualization of Technological Processes, and is also used for conducting experiments. Laboratories are available to students for classes, individual and group work and research purposes. (SAR p.40-41)
During the assessment visit, students and graduates all expressed their satisfaction with the available material technical basis. In the tour, all laboratories were shown, as well as the Mechatronics one, where different workstations are available that can be adjusted according to the needed specifications. Experts were confirmed that the laboratories are available to students.
The informative provision is provided by Valmiera Integrated Library, where books and archives of the best scientific papers are available. E-resources can be accessed from anywhere with individual login information. In 2022, there were purchased 4 titles of 4 copies in the IT field. Funding for Vidzeme University of Applied Sciences library collection is not divided by the study fields because during the study process the library resources are often used by students of several study fields. (SAR p.44)
Control and sustainability of the use of financial resources are laid down in the procedure for development, approval, execution and control of the budget of Vidzeme University of Applied Sciences (approved on 26 October 2011 at the ViA Senate meeting, decision No. 10/7.1)
ViA provides all necessary resources and complies with specific features and the conditions for the implementation of the study programme.

2.3.2.
N/A

2.3.3.

Funding of the study programme consists of state funded budget places and income from studies

paid by the students. Expenses are calculated per each student. Full time student expenses are planned accordingly: direct expenses 53.2% (salaries 39.5%, study process expenses 0.1%, administrative salaries 11.4%, research activities compensation 0.7%, other administrative expenses 1.5%) and indirect expenses 46.8% (salaries 28.1%. other administrative expenses 8.6%, loan repayment 1.6%, capital expenses 1%, building management 7.5%). (Annex 15) The expenses are planned in a transparent and open manner.
In the next admissions (2023), there are 15 budget places for full time studies. The study fee is 3260 EUR for full time studies.
As per Annex 2 the number of students in the programme in study year 2022 /2023 is 22. From this number, 21 students are enrolled in state funded budget places and all students are full time. Their admissions numbers are not very high and not all budget places are filled: in 2022 8 students were enrolled, in 2021 -6, in 2020 - 4, in 2019 - 10. More should be done to increase the admissions number not to see this as a threat in the future.
The study programme has the minimum number of students to ensure the profitability of the study programme and facilitates the development of the study programme. This is to conclude that ViA has funding available to the study programme, funding sources and the use of funding ensures full implementation of the study process.

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
The study provision is sufficient for the implementation of the study programme Mechatronics. Studies are held at both buildings, the 5 laboratories offer the needed equipment for study process and research activities, including the Mechatronics laboratory. The methodological and informative resources are accessible to students and sufficient.
The expenses are planned per each student in a transparent manner. The finances are balanced. The study programme is rentable and the number of students exceeds the minimal numbers.

Strengths:
1 There are 5 laboratories where each provides the needed equipment to gain practical knowledge.
2 The students and graduates are satisfied with the available material technical basis.

Weaknesses:
1 The admissions are low.

Assessment of the requirement [6]

1 R6 - Compliance of the study provision, science provision (if applicable), informative provision (including library), material and technical provision and financial provision with the conditions for the implementation of the study programme and ensuring the achievement of learning outcomes

Assessment of compliance: Fully compliant

The resources are sufficient for the implementation of the study programme Mechatronics. The finances are balanced. One weakness was identified, however it doesn’t pose a treat to rentability.

2.4. Teaching Staff

Analysis

2.4.1.

The SAR (p.94-96), attached Annexes 19P-Docetāju saraksts-List of lecturers-red, Apliecinajums-IF-valsts-valoda.edoc, Apliecinajums-IF-anglu-valoda.edoc and 20P-Docetaju_CV-Acad.Person._CV affirm that the qualification of the teaching staff complies with the requirements for the implementation of the study programme Mechatronics and the requirements set forth in the Law of Higher Education Institutions and is appropriate for study programme Mechatronics implementation, allow to achieve the aims and ensure the learning outcomes of the study program in both Latvian and English languages.
There are 24 members of teaching staff involved in the implementation of study programme Mechatronics - 13 guest lecturers, 4 lecturers, 3 guest associate professors, 2 assistant professors, 1 associate guest professor, 1 professor (SAR, p.94), from which 7 are elected. 10 members have a doctor degree,12 members have master's degree and 2 members have bachelor degree. One member with a bachelor degree has 16 years long and second one - 7 years long professional experience in the study field. Academic staff involved in implementation have the necessary academic (higher) education and/or professional qualifications
The attached annexes Apliecinajums-IF-valsts-valoda.edoc and 19P-Docetāju saraksts-List of lecturers-red.xlsx affirms that all members of the teaching staff have knowledge of the official/national language complies with the Regulations on the extent of knowledge of the national language. 18 members of teaching staff that are involved in the implementation of professional bachelor study programme "Mechatronics" for foreign students have English knowledge level at least B2 and higher (Annex 19P-Docetāju saraksts-List of lecturers-red.xlsx). Other 6 members whose English knowledge level is less than B2 participate only in the implementation of study programme for latvian students.
According to the prerequisite for involvement of academic staff in the implementation of study programmes defined by ViA, the candidate must have a Master's degree or doctoral degree, as well as knowledge of English at least at B2 level. But if there is no Master's degree, there has to be at least five years of practical work experience in the specialty according to the subject to be taught in the profile subjects of the professional study programmes, submitting documents confirming professional experience and the length of service (SAR, p.50). The attached list of teaching staff (Annex 9P-Docetāju saraksts-List of lecturers-red.xlsx) affirms that 10 members have a doctor degree, 12 members have master's degree and 2 members have bachelor degree. One member with a bachelor degree has 16 years long and second one - 7 years long professional experience in the study field.) So, both visiting lecturers without master's degree and other members of teaching staff involved in the implementation of professional bachelor study programme "Mechatronic" fulfills the requirement of the Law on Higher Education Institutions.
The analysis of teached study courses (Annex 19P-Docetāju saraksts-List of lecturers-red.xlsx) showed that there is a teaching staff responsible for 10 study courses. Such an increased study workload, combined with administrative duties, can be an obstacle to scientific activity. Experts would invite the management to review the distribution of work.
In addition, ViA has involved 1 associate guest professor from Romania to teach study course "Internet of Things (IoT) and sensor networks" (4 credit points) and to facilitate the acquisition of international experience, share of foreign academic and professional experience in a broader perspective of the field (Annex 19P-Docetāju saraksts-List of lecturers-red). It refers to Article 56, Paragraph 3 of the Law on Higher Education Institutions. The Law states: "the study programs must be implemented in the national language in universities. In a study program that is implemented in the national language, no more than one-fifth of the credit points of the study program may be implemented in other official languages of the European Union, taking into account that this part cannot include final and state exams, as well as the development of qualifications, bachelor's and master's theses". ViA fulfills the Article 56, Paragraph 3 requirements of the law.

2.4.2.

According to the SAR (p.94, p.10) ViA has set a number of measures to ensure suitability of lecturers for working with students and verify qualifications and competence of lecturers to provide high-quality education.
ViA has defined requirements and prerequisites for involvement of academic staff in the implementation of study programmes (SAR, p.50) that are laid down in ViA Regulations on Elections to Academic Positions.
ViA has defined job descriptions and responsibilities of lecturers, which lay down requirements for academic work, research, academic and scientific qualification improvement and also for administrative work that the Senate has approved.
ViA has defined Remuneration Regulations that contain the division of academic work, conditions for research work. In addition, once per academic year (in October), the lecturer has to submit to the Dean of the faculty a report on his or her achievements in scientific work, experience gained in projects, seminars and conferences, if any (SAR, p.49).
ViA implements various activities, including student surveys (course assessment surveys) of each study course taught by the lecturer in the relevant semester of the academic year that are mandatory and study course observations (Meeting with academic staff, meeting with faculty management). It provides an opportunity for lecturers to improve and monitor the quality of their academic work.
Once per academic year ViA organizes a seminar for lecturers on the study quality assurance issues in which they discuss their experience/observations gained during the lectures in order to ensure the assessment of the performance quality of ViA academic staff. The Director of the study field organizes an additional meeting if it is necessary to address quality improvement issues in more detail and/or to conduct in-depth research of problems (including document review) (SAR, p.49).
In accordance with the Cabinet Regulations of the Republic of Latvia “Regarding Education and Professional Qualifications Necessary for Teachers and Procedure for Improving the Professional Competence of Teachers”, professional development can include international mobility in accordance with the goals of professional development, participation in projects, conferences and seminars. According to the SAR (p.10) the academic staff is given an opportunity to supplement and expand his/her knowledge and professionalism by gaining foreign experience or engaging in internship at foreign higher education institutions/organizations, as well as by participating in relevant seminars and conferences – within Erasmus, etc. mobility programmes in order to ensure improvement of skills, work quality and professional development. The attached annex 23P_Mobilitate_Mobility.xls approves that teaching staff have used the opportunity to participate in staff mobility programme. Totally there were 39 cases of Academic staff mobility during the review period 2014-2021.
In order to ensure the professional development of lecturers in the period from 2018 to 2021, the European Social Fund project “Development of Academic Staff and Human Resources of Vidzeme University of Applied Sciences” (SAM 8.2.2) was implemented within the framework of which the academic staff had the opportunity to increase their knowledge in digital technologies and academic leadership, to learn English, as well as to do internship in industry companies (SAR, p.49). But the SAR is missing information about how many members of teaching staff involved in implementation of the professional bachelor study programme “Mechatronic” used this opportunity.

2.4.3.
N/A

2.4.4.

According to annex 21P_ Publikācijas_Publications.xls and 20P-Docetaju_CV-Acad.Person._CV.zip, the scientific activity of academic staff corresponds partly to the recommendations set in the Law on

Higher Education Institutions paragraph 3 of the first part in Article 55. Only 4 from 24 members of academic staff involved in the implementation of professional bachelor study programme “Mechatronics” have published publications during the review period. 3 members of academic staff have participated in the projects during the review period. Only 1 member has participated in scientific conferences during the review period 2014-2021.

2.4.5.
According to the SAR (p. 95-96), Via carries out several activities within the study programme to foster cooperation between lecturers that was approved by management of the faculty and academic staff during the visit.

+ The general faculty meeting (a Faculty Council meeting) to reflect on the semester and the current issues and challenges of the study programme, which is convened at the end of study year where all members of academic staff are invited to participate. The Programme Director reports on current events, on current developments, student evaluations, student performance, challenges in the programmes. Participants are invited to give their views on both the processes and the promotion of mutual cooperation.
+ During the implementation of the European Social Fund project "Development of academic staff and human resources of Vidzeme University of Applied Sciences" (SAM 8.2.2.), from 2018 to 2021, a general cross-hospitalization of lecturers' classes took place, during which the practice of cross-observation of classes, programme lecturers had the opportunity to participate in course hospitalizations and evaluate the work of their colleagues, make recommendations for improving the study process, and share their experience.
+ The programme director contacts the academic staff, invites to join discussion, supervises and manages the interconnection of study courses, and facilitates, where necessary, the cooperation between teaching staff.

Conclusions on this set of criteria, by indicating strengths and weaknesses

Conclusions:
The qualification of the teaching staff complies with the requirements for the implementation of the study programme Mechatronics and the requirements set forth in the Law of Higher Education Institutions and is appropriate for bachelor study program implementation, allow to achieve the aims and ensure the learning outcomes of the study programme Mechatronics in both Latvian and English languages. But the scientific activity of teaching staff is low. ViA carries out several activities within the study programme Mechatronics to foster cooperation between lecturers.
Strengths
1. Academic staff involved in implementation have the necessary academic (higher) education and/or professional qualifications.
2. Well-thought-out procedure for selection of teaching staff and evaluation of qualifications and competence.

Weaknesses:
1. Low scientific activity of teaching staff. The scientific activity of only 4 members of academic staff corresponds to the recommendations set in the Law on Higher Education Institutions paragraph 3 of the first part in Article 55.
2. There is a teaching staff responsible for 10 study courses. Such an increased study workload, combined with administrative duties, can be an obstacle to scientific activity.

Assessment of the requirement [7]

1 R7 - Compliance of the qualification of the academic staff and visiting professors, visiting associate professors, visiting docents, visiting lecturers and visiting assistants with the conditions for the implementation of the study programme and the requirements set out in the respective regulatory enactments.

Assessment of compliance: Partially compliant

Low scientific activity of teaching staff. Only 4 members of the academic staff fulfill a recommendation of the Law on Higher Education Institutions which has been published in peer-reviewed editions, including international editions during the last six years.

2.5. Assessment of the Compliance

Requirements

1 1 - The study programme complies with the State Academic Education Standard or the Professional Higher Education Standard

Assessment of compliance: Fully compliant

The attached annex (27P_MT_atbilstība valsts standartam_Compliance_LV_ENG_red.doc) affirms that study program complies with the regulations of the Cabinet of Ministers of August 26, 2014 no. 512 “Noteikumi par otrā līmeņa profesionālās augstākās izglītības valsts standartu”. Experts invite the management to pay attention to the quality of the study programme Mechatronics description. The defined tasks of the study programme are the same for all ViA bachelor and master level study programmes.

2 2 - The study programme complies with a valid professional standard or the requirements for the professional qualification (if there is no professional standard required for the relevant occupation) provided if the completion of the study programme leads to a professional qualification (if applicable)

Assessment of compliance: Fully compliant

Attached annex 28P_MT_Prof.stand_Compliance-prof-stand-LV_ENG-red.xlsx confirms that the study programme Mechatronics complies with the standard of the Mechatronics Engineer profession (Profesionālās izglītības un nodarbinātības trīspusējās sadarbības apakšpadomes 2022. gada 9. februāra sēdes, protokols Nr. 1, https://registri.visc.gov.lv/profizglitiba/dokumenti/standarti/2017/PS-210.pdf) .

3 3 - The descriptions of the study courses and the study materials have been prepared in all languages in which the study programme is implemented, and they comply with the requirements set forth in Section 561 , Paragraph two and Section 562 , Paragraph two of the Law on Higher Education Institutions.

Assessment of compliance: Partially compliant

Attached study course descriptions (Annex 30P_MT_Kursu_apraksti_Course_Descriptions.zip) are prepared in Latvian and English languages and comply with the requirements set forth in Section 561, Paragraph two of the Law on Higher Education Institutions.
The descriptions of learning outcomes of the individual study courses lack detalization, relevance of formulations for skills, knowledge and competences, as well as information about methods on how learning outcomes are proved. The study course "Programming Basics" (2CP) is based on the outdated programming language Pascal.

4 4 - The sample of the diploma to be issued for the acquisition of the study programme complies with the procedure according to which state recognised documents of higher education are issued.

Assessment of compliance: Fully compliant

The provided Diploma and its annexes samples (26P_MT_Diploma-paraugs_Diploma-example-red.zip) comply with the criteria set in the Minister Cabinet regulation No.202 “Kārtība, kādā izsniedz valsts atzītus augstāko izglītību apliecinošus dokumentus”. But faculty management should pay careful attention to the information mentioned in the Minister Cabinet regulation No.202 Clause 15. The provided Diploma and its annexes samples have been translated partly. The title of university and text “profesionālā maģistra diploms” and word “Sērija ...” on page 2 are not translated. If ViA decides to use the duplicating text in English, experts invite management of ViA to translate Diploma and its annexes’ samples completely.

5 5 - The academic staff of the academic study programme complies with the requirements set forth in Section 55, Paragraph one, Clause 3 of the Law on Higher Education Institutions.

Assessment of compliance: Not relevant

6 6 - Academic study programmes provided for less than 250 full-time students may be implemented and less than five professors and associated professors of the higher education institution may be involved in the implementation of the mandatory and limited elective part of these study programmes provided that the relevant opinion of the Council for Higher Education has been received in accordance with Section 55, Paragraph two of the Law on Higher Education Institutions.

Assessment of compliance: Not relevant

7 7 - At least five teaching staff members with a doctoral degree are among the academic staff of an academic doctoral study programme, at least three of which are experts approved by the Latvian Science Council in the respective field of science. At least five teaching staff members with a doctoral degree are among the academic staff of a professional doctoral study programme in arts (if applicable).

Assessment of compliance: Not relevant

8 8 - The teaching staff members involved in the implementation of the study programme are proficient in the official language in accordance with the regulations on the level of the official language knowledge and the procedures for testing official language proficiency for performing professional duties and office duties.

Assessment of compliance: Fully compliant

The attached annexes Apliecinajums-IF-valsts-valoda.edoc and 19P-Docetāju saraksts-List of lecturers-red.xlsx affirms that the knowledge of the official/national language of the academic staff involved in the implementation of the study program complies with the Regulations on the extent of knowledge of the national language and the procedure for testing the knowledge of the national language for performing professional and official duties.

9 9 - The teaching staff members to be involved in the implementation of the study programme have at least B2-level knowledge of a related foreign language, if the study programme or any part thereof is to be implemented in a foreign language (if applicable).

Assessment of compliance: Fully compliant

The attached annexes Apliecinajums-IF-anglu-valoda.edoc and 19P-Docetāju saraksts-List of lecturers-red.xlsx affirms that English knowledge level of the teaching staff involved in the implementation of the study program in English is B2 and higher.

10 10 - The sample of the study agreement complies with the mandatory provisions to be included in the study agreement.

Assessment of compliance: Fully compliant

The attached Template of Study agreement (0P-Studiju-ligums-t.sk.-2.8.p.-KOMPENSACIJA_Study-agreement-also-2.8.p.-COMPENSATION.docx) comply with the requirements set in the Minister Cabinet regulation No.70 “Studiju līgumā oblgāti ietveramie noteikumi”.

11 11 - The higher education institution / college has provided confirmation that students will be provided with opportunities to continue their education in another study programme or another higher education institution or college (agreement with another accredited higher education institution or college) if the implementation of the study programme is terminated.

Assessment of compliance: Fully compliant

The Agreements with Rezekne Academy of Technologies on students take over in case of cancellation of study programs (see Vienošanās_studentu_pārņemšanai RTA_VIA Mehatronika(1).edoc in FINAL_ligumi_agreements.zip) affirms that students are provided with opportunities to continue their education in Rezekne Academy of Technologies professional bachelor study program "Mechatronics" if the implementation of the study program is terminated.

12 12 - The higher education institution / college has provided confirmation that students are guaranteed compensation for losses if the study programme is not accredited or the study programme’s license is revoked due to the actions (actions or omissions) of the higher education institution or college and the student does not wish to continue studies in another study programme.

Assessment of compliance: Fully compliant

ViA guarantee a compensation for losses to the Student for the credit points not obtained (for which it is not possible to issue an academic statement, if the credits are not obtained due to a fault of ViA) by transferring tuition fee paid by the Student to his or her specified bank account within 1 (one) month if the study programme is not accredited or the study programme license is taken away due to ViA’s activity (or inactivity), and the Student does not want to continue studies in another study programme (Annex 0P-Studiju-ligums-t.sk.-2.8.p.-KOMPENSACIJA_Study-agreement-also-2.8.p.-COMPENSATION.docx)

13 13 - The joint study programmes comply with the requirements prescribed in Section 55.(1), Paragraphs one, two, and seven of the Law on Higher Education Institutions (if applicable)

Assessment of compliance: Not relevant

14 14 - Compliance with the requirements specified in other regulatory enactments that apply to the study programme being assessed (if applicable)

Assessment of compliance: Not relevant

Assessment of the requirement [8]

1 R8 - Compliance of the study programme with the requirements set forth in the Law on Higher Education Institutions and other regulatory enactments.

Assessment of compliance: Partially compliant

The descriptions of learning outcomes of the individual study courses lack detalization, relevance of formulations for skills, knowledge and competences, as well as information about methods on how learning outcomes are proved. The study course "Programming Basics" (2CP) is based on the outdated programming language Pascal.

General conclusions about the study programme, indicating the most important strengths and weaknesses of the study programme

Conclusions :
The study programme Mechatronics is evidently and fully compliant with the study field. The skills and competences that can be acquired in the study programme Mechatronics are fairly popular and needed skills in today's IT and Engineering economy, also of local level. The number of students is relatively low, and it is not increasing. The study provision is sufficient for the implementation of the study programme Mechatronics. The methodological and informative resources are accessible to students and sufficient. The qualification of the teaching staff complies with the requirements for the implementation of the study programme Mechatronics and allows to achieve the aims and ensure the learning outcomes of the study programme Mechatronics in both Latvian and English languages. But the scientific activity of teaching staff is low.

Strengths:
1. The study programme Mechatronics is fully compliant with the study field, and provides a relevant skill set as learning outcome.
2. The study programme Mechatronics content is topical, interconnected and complementary and allows for achievement of the study program's objectives and learning outcomes.
3. The study programme Mechatronics has been developed in close collaboration with industry specialists from companies and the Association of Mechanical Engineering and Metalworking (MASOC), as well as in cooperation with other higher education institutions where similar study programmes are implemented.
4. FE employs a variety of study methods to achieve the study programme Mechatronics goals, including lectures, laboratories, project-based assignments, virtual learning environments Moodle, Microsoft Teams, Webex, internships at industry companies, and independent study
5. The study provision is sufficient for the implementation of the study programme. The laboratories provide needed equipment to gain practical knowledge.
6. Academic staff involved in implementation have the necessary academic (higher) education and/or professional qualifications that allow to achieve the aims and ensure the learning outcomes of the study program in both Latvian and English languages.

Weaknesses:
1. The quality of the program description should be improved. Description of study programme tasks and results have shortcomings. The knowledge gained as a result of learning the program is not adequately described. They include simply listing the titles of study courses. The defined tasks of the study programme are the same for all ViA study field programmes.
2. The descriptions of learning outcomes of the individual study courses lack detalization, relevance of formulations for skills,knowledge and competences, as well as information about methods on how learning outcomes are proved.
3. The number of enrolled students is very low, making the long term sustainability questionable.
4. A more detailed analysis of students' surveys is necessary, including year-on-year trend analysis, analysis of survey open-ended questions' suggestions, and defining triggers for certain decisions or actions, such as changing study courses, teachers, or introducing new technologies.
5. Low or no students who participate in Erasmus outgoing activities. The mobility statistics provided by ViA is not descriptive and transparent enough as it shows all study programs and study fields together. Separate records for specific study programs are needed to make a quality analysis.
6. Increased study workload, combined with administrative duties, can be an obstacle to scientific activity.

7. Low scientific activity of teaching staff.

Evaluation of the study programme "Mechatronics"

Evaluation of the study programme:

Good

2.6. Recommendations for the Study Programme "Mechatronics"

Short-term recommendations

A detailed analysis of students' feedback, including year-on-year trend analysis, analysis of survey open-ended questions' suggestions, and defining triggers for certain decisions or actions, such as changing study courses, teachers, or introducing new technologies should be done on the regular basis.
Additional efforts should be made to promote proactively students and teachers outgoing Erasmus+ mobility. Methodology. The mobility statistics provided by ViA is not descriptive and transparent enough as it shows all study programs and study fields together. Separate statistics for each study program should be gathered to make a quality analysis.
Improve the quality of the study programme description, i.e. description of study programme tasks and results for each study programme should be unique.
The FE management should pay careful attention to the information mentioned in the Minister Cabinet regulation No.202 Clause 15. Make changes in the Diploma sample, i.e. translate all the text in English in the translated version of the diploma.

Long-term recommendations

Make efforts to increase the admission rates.
The descriptions of learning outcomes of the individual study courses should be improved and information about methods on how learning outcomes are proved clarified.
The programming language Pascal in the study course "Programming Basics" (2CP) should be changed to one of the languages used in industry (C++, Java, Python, etc.)
Consolidate the Introductory and Specialization internships as their tasks partially overlap and both of them take place in the same semester.
Ensure higher involvement of teaching staff in scientific activities, i.e. scientific paper publication, participation in projects, scientific paper review, doctoral thesis review etc.. Increase the number of publications published by teaching staff, i.e. at least one publication during each 2-3 years.
As increased study workload, combined with administrative duties, can be an obstacle to scientific activity, review and balance the workload of all members of teaching staff.
The number of enrolled students is very low, making the long term sustainability questionable. A long term strategy to increase the number of students and to preserve sustainability must be developed and implemented.

II - "Cybersecurity Engineering" ASSESSMENT

II - "Cybersecurity Engineering" ASSESSMENT

2.1. Indicators Describing the Study Programme

Analysis

2.1.1.

The Professional Master study programme Cybersecurity Engineering 47482 is evidently and fully compliant with the study field Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science, and it is well justified by the SAR (pp. 102-103).
Cybersecurity is closely and inseparably related to the ICT industry and therefore to the respected study field. According to the European Parliament's definition, "Cybersecurity includes information and communication security, operational technologies and IT platforms necessary to ensure the security of digital systems".
Information technology systems, platforms, hardware, software and the data stored on them can be the target of cyber-attacks. Information technology security measures, or cybersecurity, ensure that IT systems are protected against attacks and threats. As the use of ICT and technological development are rapidly growing, more and more sectors of the national economy and processes are becoming dependent on digital technologies. Along with the development of technologies and the rapid increase in the number of users, cybersecurity risks and attempts to threaten both the systems themselves and their users are also increasing. Therefore it is clearly justified that there is a need for highly qualified cybersecurity professionals, and this programme and the gained expertise belong to the study field. Cybersecurity becomes vital in many IT related fields.
The content of the Professional Master study programme Cybersecurity Engineering is based on the study of subjects related to the IT sector and cyber security. The goal of the Professional Master study programme Cybersecurity Engineering is to provide students with the opportunity to acquire competences necessary for a penetration tester / information systems security manager, information system security officer, and to prepare them for professional activity in ensuring information security and cybersecurity of a company and/or organization. As a result of successful completion of the programme, students will be able to perform the duties and main tasks of a penetration tester, information systems security manager, and information systems security officer.
The content and scope of the Professional Master study programme Cybersecurity Engineering correspond to a Master’s programme – as a result of successful completion of the programme, 80 CP are obtained and a professional Master’s degree in Information Technologies is awarded, which entitles the holder to continue education in a doctoral programme if the admission requirements of the relevant programme are met.

2.1.2.

The full title of the Professional Master study programme Cybersecurity Engineering. Upon successful completion of the Professional Master study programme Cybersecurity Engineering, the student is awarded a professional Master's degree in
Information Technologies. The title of the study programme, 'Cybersecurity Engineering', is closely and inextricably linked to the Information Technology sector.
The title of the study programme corresponds to the aim and actual content, as it is convincingly justified in SAR (p.103 and Annex 34). The awarded degree corresponds to the content and also the expectations of such a study programme .
The Professional Master study programme Cybersecurity Engineering is offered in a full-time studies format over a period of 2 years in Latvian and English in the amount of 80 Latvian study credit

points with admission requirements of Professional bachelor's degree, second level professional or equivalent higher education qualification in information technology or information and in information and communication technologies or an equivalent field, following completion of a programme of study of at least four years' duration on a full-time basis and minimum English level of B2 for a programme form in English.
The educational classification code is 47482 which according to Latvian Education Classification (Latvian Cabinet of Ministers Regulations (Cab, Reg.) No. 322, https://likumi.lv/ta/id/291524-noteikumi-par-latvijas-izglitibas-klasifikaciju), corresponds to the following codification: meaning of the first two digits `47` notes that this study programme is professional master programme (level 7 of Latvian and European Qualification Framework) and the last three digits `482` indicate that this programme is related to the educational group of “Use of computers” .
The duration and scope of the Professional Master study programme Cybersecurity Engineering implementation (including different study programme implementation options), as well as the implementation language, are reasonable and well justified.

2.1.3.

The changes and corrections made since the last accreditation of Professional Master study programme Cybersecurity Engineering have been well summarized in the SAR (pp.101-102). The management increased the number of credit points for individual study courses, as well as to combine some study courses due to content overlap. This is fully in line what the accreditation board has been suggested. The course evaluation survey has also been taken into account, in which students pointed out that the content of these courses overlapped with other courses of the programme. For the same reasons, the proportion of engineering courses has been increased in the Professional Master study programme Cybersecurity Engineering.
The specific changes are as follows.
The number of credit points was increased for five courses, while four courses of the block of social sciences were removed from the study plan – these changes were made based on the course evaluation survey in which students pointed out that the content of these courses overlapped with other courses of the programme, as well as on the basis of student recommendations to increase the proportion of engineering courses in the Professional Master study programme Cybersecurity Engineering.
Changes in the amount of CP:
• Applied cryptography: increased from 2 CP to 4 CP.
• Reverse engineering; increased from 1 CP to 2 CP
• Security of networks, mobile and cloud computing; reduced from 3 CP to 2 CP
• Information gathering techniques; increased from 1 CP to 2 CP
• Cyber crime investigation; increased from 2 CP to 4 CP
Changes in course titles:
• The course “IT Security, Administration and Protection” has been renamed to “Introduction to Cyber Crime Investigation” in the amount of 2 CP
• The course “Software Security Design” has been renamed to “Secure Software Development”
• Courses “Project Management Methods and Tools”, “Innovations and Creative Problem Solving” are combined under the course “Innovations and Project Management”
• It is planned to combine courses “Security Incident Management” and “Penetration testing” into one course
Courses removed from the programme:
• Economics for Entrepreneurs
• Communication Theory

• Social Media Analysis
• Internet Psychology
New courses included:
• “Engineering of Cyber security Requirements” in the amount of 2 CP
• “Research Methodology and Scientific Publications” in the amount of 2 CP
Changes to course division in Parts A, B, C:
• The course “Data Mining” is included in Part A
• The course “Applied Cryptography” is included in Part A
• The course “Introduction to Propaganda and Persuasive Communication” is included in Part C
• The course “Python for Penetration Testers” is included in Part B
Changes have also been made to the admission requirements – from now on, when applying for studies, only the weighted average grade specified in the diploma supplement and admission interview will be taken into account. Previously, in addition to the already mentioned criterion, potential students had to present a topic of the Master’s paper, providing an insight into the topicality of the paper, specifying the purpose of the paper and relevance of the topic. Due to the fact that all students of the programme change the topics of their Master’s papers during their studies, there is no sense to request a topic presentation upon applying to ViA.
These changes have shifted the Professional Master study programme Cybersecurity Engineering even closer to the European standards.

2.1.4.

It is well justified in the SAR (pp. 103-104) by factual data that the demand for cybersecurity specialists is continuously growing worldwide. This also holds for Latvia, and in accordance with the governmental strategy, cybersecurity is a crucial element of national defense.
In accordance with the industry assessment carried out by the professional association ISC2, there are currently 2.72 million unfilled cybersecurity job vacancies worldwide; it is predicted that demand for cybersecurity professionals will grow by as much as 65% over the next decade. Cybersecurity Ventures predicts that by 2031, ransomware will attack one of the world’s companies and/or individuals every 2 seconds compared to an interval of 11 seconds in 2021. Consequently, companies will have to pay more attention to the security of their systems and also their customers in the Internet environment.
Furthermore, Cybercrime magazin predicts that in 2025 it will be necessary to protect 200 zettabytes of data from cyber attacks, 50% of which will be stored in the cloud. In its forecasts, the European Commission indicates that by 2024, 22.3 billion devices worldwide will be connected to the Internet of Things (consilium.europa.eu), thus creating an even greater number of potential vulnerabilities and cyber attacks; accordingly, the need for experienced specialists who can protect systems and prevent the threat of cyber attacks will only increase every year.
The global crises of the past three years have further emphasized the importance of cybersecurity; cyberwarfare has become real. In accordance with the Cyber Security Strategy of Latvia for 2019-2022, cybersecurity is an element of comprehensive national defence, the importance of which will continue to grow not only locally, but even internationally. Therefore, it is necessary to strengthen and develop cyber defence capabilities, increase resilience against cyber attacks and promote public awareness of threats in cyberspace.
At the time of the preparation of the report, the National Cybersecurity Law is at the development stage, the purpose of which will be to improve the security of information and communication technologies, establish procedures for ensuring cybersecurity measures and promote the implementation of cybersecurity measures in such a way as to be able to predict and prevent cyber threats in time, as well as to overcome them and eliminate their consequences, as much as possible ensuring continuity of service availability.

The European Parliament is also working on the new NIS2 directive (The Network and Information Security Directive), which will oblige several industries and structures to take measures to increase the level of cybersecurity in Europe.
It is expected that upon the entry into force of the law and the directive, the demand for qualified specialists, who will be able to fullfil the requirements set out in the mentioned regulatory enactments, will increase in the labour market.
Therefore, it can be stated that the development of the programme is justified by the rapidly growing demand for cybersecurity specialists, the programme meets the demand of the labour market and prepares specialists who are critically needed and in demand in the industry.
During the reporting period, two of the graduates have been involved in the implementation of the programme as lecturers, improving the content of the programme. One of the graduates is a visiting lecturer of the professional Bachelor's programme "Information Technologies".
Overall it is clear that the development of this programme is well justified by the rapidly growing demand for cybersecurity specialists, and the programme meets this demand of the labor market.
Having that said, the interest is not very promising, only 11 students have graduated in the programme in the last 3 years. Several students leave the programme for various reasons - this must be evaluated and efforts must be made to decrease this number. The graduates continue their professional activities in Latvia, which is a plus. The majority of graduates are employed in the private sector and their job duties are directly related to IT and cybersecurity; while others are working in the public sector, and their job duties are related to the security of IT systems. Based on these data the existence and continuation of the programme is well justified by strategic and economic reasons as well.

2.1.5.
n/a

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
The Professional Master study programme Cybersecurity Engineering is evidently and fully compliant with the study field, and it is well justified, since Cybersecurity is closely and inseparably related to the ICT industry and therefore to the respected study field. According to the European Parliament's definition, "Cybersecurity includes information and communication security, operational technologies and IT platforms necessary to ensure the security of digital systems". The title of the study programme corresponds to the aim and actual content. The awarded degree corresponds to the content and also the expectations of such a study programme - Professional Master's degree in information technology is awarded. Several (and forward-looking) changes and corrections made since the last accreditation of this Professional Master study programme Cybersecurity Engineering.
It is well justified, that the demand for cybersecurity specialists is continuously growing worldwide. This also holds for Latvia, and in accordance with the governmental strategy, cybersecurity is a crucial element of national defense. However, the interest is not very promising, only 11 students have graduated in the Professional Master study programme Cybersecurity Engineering in the last 3 years. Several students leave the Professional Master study programme Cybersecurity Engineering for various reasons - this must be evaluated and efforts must be made to decrease this number.

Strengths
1 The Professional Master study programme Cybersecurity Engineering is evidently and fully compliant with the study field
2 The existence and continuation of the Professional Master study programme Cybersecurity Engineering is well justified by strategic and economic reasons as well

Weaknesses
1 The number of enrolled students is quite low, moreover several students leave the programme for various reasons. Efforts must be made to mitigate this effect.

2.2. The Content of Studies and Implementation Thereof

Analysis

2.2.1.

The Professional Master study programme Cybersecurity Engineering 47482 (Master Cybersecurity Engineering programme) is offered in full time study form – 2 years (80 CP) with qualification to be obtained Professional Master's degree in information technology.
The Master Cybersecurity Engineering programme is offered since year 2018 in two languages: Latvian and English. As there are international students admitted to the Master Cybersecurity Engineering programme, it is not taught in English.
A 2CP course “Latvian language” is included for international students (Annex 36P of CySec SAR). This requirement is in place to ensure compliance with Latvian state regulations.
The competencies to be acquired in the Master Cybersecurity Engineering programme are within the framework of the courses of the Master Cybersecurity Engineering programme are based on the Penetration Tester Competence Map, according to NIST 800-181 (SAR of CySec MA, Chapter 3.2). The courses integrate a set of competencies required for both a penetration tester and an information systems security manager. Cybersecurity professionals are involved in the implementation of the Master Cybersecurity Engineering programme. They include in their courses up-to-date information from the industry, such as analyzing recent cyber-attacks and their types, trends, blatant security breaches, examples from their professional experience (SAR of CySec MA, Chapter 3.2).
The Master Cybersecurity Engineering programme has a programme advisory board, which includes professionals/company representatives in the field of Cybersecurity and IT. The representatives of the Council provide information on the current trends in the sector and the skills required according to market trends as well as market needs (SAR of Master Cybersecurity Engineering programme, Chapter 3.2). All these measures help to ensured, that the Master Cybersecurity Engineering programme meets the requirements of the industry and labor market. During employers meeting with experts in assessment visit, they expressed wish, that graduates of the Master Cybersecurity Engineering programme should be able to get international certificates, e.g. as information security managers, without additional training.
The Master Cybersecurity Engineering programme content is topical, interconnected and complementary. The courses in the Master Cybersecurity Engineering programme are divided into 4 topical groups (SAR of CySec MA, Annex 36): 1) Strengthening of IS (Security Incident Management; Introduction to Digital Forensics; Network, Mobile and Cloud Computing Security; Digital Forensics I; Information System Security Engineering; Applied Cryptography; Fundamentals of Secure Programming; Ethical Hacking; Digital Forensics II; Web Application Penetration Testing; Reverse Engineering); 2) Management of CySec (Cybersecurity Policy; Information System Audit and Security; Information Security Risk Management; Engineering of Cybersecurity Requirements; Security Culture; Latvian Language (for International Students)); 3) Legal and Ethical aspects (Obligations, Responsibilities and Rights in the Internet; Personal data Protection and Investigation); 4) Research, innovation and management (Strategic IT Management, Research Methodologies and Scientific Publications; Python for Security Testers; Innovations and Project Management; Information Gathering Techniques; Data Mining; Persuasive Communication). The first three course groups are study courses that ensure in-depth learning of the latest achievements in the theory and practice of the professional field of activity.

Additional 2 1CP courses(Civil Protection, Environment Protection) are included for the compliance with mandatory laws (the Environmental Protection Law, Civil Protection, Disaster Management Law) for those who did not take those courses at the Bachelor level.
The Master Cybersecurity Engineering programme has clearly defined objectives and learning outcomes, and the mapping of individual study courses' learning outcomes to the programme learning outcomes is provided (Annex 38P of CySec MA SAR).
The sequence of courses, and their distribution among semesters is logical. However, the Master Cybersecurity Engineering programme is very fragmented due to a large number of small (2 CP) courses. All 9 courses in the first semester, 9 out of 10 courses in the second semester and 5 out of 6 courses in the third semester are 2P (Annex 36P of CySec MA SAR). In total, apart from Master Thesis (20CP) and Traineeship (6CP), there are 23 2CP courses in the program, and only 2 are 4 credit courses (Applied Cryptography and Persuasive Communication) (Annex 36P of CySec MA SAR). 9-10 courses per semester might be too big load for the students. In assessment visit, during the meeting with experts, students also mentioned this as one of their desired improvements for the Master Cybersecurity Engineering programme.
Study course descriptions of all the courses in the Master Cybersecurity Engineering programme are provided (Annex 37P of CySec MA SAR), however, not all the descriptions include a clear definition of requirements for the acquisition of credit points, and not all study courses include clear description of students' independent work. Also, not all course materials in the Moodle system are translated to the English language.
Compliance of the Master Cybersecurity Engineering programme with the Regulations of the Cabinet of Ministers of August 26, 2014 no. 512 "Rules on the state standard of second-level professional higher education" was carried out (Annex 35P of CySec MA SAR).
The compliance analysis was carried out correctly, and the results demonstrate that Master Cybersecurity Engineering programme fully complies with the state regulations.

2.2.2.

Professionals, involved in the implementation of the Master Cybersecurity Engineering programme, include up-to-date information from the industry into the course content. Practical sections of courses includes typical case studies, also related to the latest achievements in the field. During the study visits, students visit companies get acquainted with the activities in their Cybersecurity Departments, learn about the latest developments in the sector, trends, main types of threats, measures to prevent them (CySec of MA SAR, Chapter 3.2; information obtained during expert meetings with employers).
Information on current developments in science and research is obtained from lecturers who are involved in related research projects. The teaching staff of the programme is involved in the research sub-direction "Modeling and safety of simulations of socio-technical systems", which is focused on interdisciplinary research, which includes the assessment of engineering and technological solutions in the social system and the assessment of social science research results using simulation modeling technologies, as well as company modeling methodologies (SAR of Master Cybersecurity Engineering programme, Chapter 3.2). Also, research tasks are defined under the research sub-direction, one of which is prediction and modeling of system security and vulnerability.
Students are encouraged to participate in research, in a number of cases their Master Thesis topics are related to research following current trends in the field (information obtained during experts meeting with students).
Summarizing, the awarding of the degree in Master Cybersecurity Engineering programme is based on the achievements and findings of the cybersecurity field of science.

2.2.3.

(In 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, analyze in detail the methods used for the implementation of such a study programme).
Different study methods are employed in the Master Cybersecurity Engineering programme, including face-to-face/online contact classes with lecturers, performance of practical work, independent work, field trips, visits to companies, internship at the company (Master Cybersecurity Engineering programme SAR, Chapter 3.2). Remote study possibility, including remote connecting to the Cybersecurity Laboratory, is implemented in the Master Cybersecurity Engineering programme.
The main teaching methods include lectures, work with literature, practical classes, which can be organized as group work and individual work of different formats – case studies, discussions, presentations of independent work, tests, as well as work in virtual laboratories. The amount of practical classes is not less than 30% (Master Cybersecurity Engineering programme SAR, Chapter 3.2).
The lectures are recorded and are available for students to review in Moodle or Microsoft Teams environments. Virtual study environments are actively used by students whenever they are not able to attend classroom lectures. Moodle environment is also used by students to submit practical assignments (input from expert meeting with students).
ViA ensures the implementation of the Master Cybersecurity Engineering programme in such a way that the principles of student-centred education are taken into account in the implementation of the study process and students are encouraged to actively participate in the shaping of the study process (CySec MA SAR, Chapter 3.2). The teaching staff involved in the programme actively asks students to engage in dialogue, encouraging them to get involved in the study process, express their opinion and debate. The small number of the study program’s students (the averaged number of admitted students since year 2018 to year 2022 is 8; the total number of the graduates by year 2022 is 11, SAR Annex 2P) allows for the individual approach and student-centred learning approach.
Since the students of the programme usually already have accumulated certain professional experience, they are actively involved in the study process and its improvement. Regular student surveys are conducted after each study course to assess the organizational processes, study course content, and teacher performance of the Master Cybersecurity Engineering programme. These surveys also provide students with an opportunity to suggest improvements to the program, including study methods. Additionally, students can discuss their concerns and ideas for improvement during individual meetings with the study program's management and teachers (input from expert meetings with students, teachers and management).
Due to the Covid-19 pandemic, the study process was shifted from face-to-face to remote learning. Such an approach turned out to be very suitable for industry professionals studying in the programme, as this allows them to more successfully combine their professional and family life and studies. This aspect also allowed attracting students from more distant regions (Master Cybersecurity Engineering programme SAR, Chapter 3.2).
Summarizing, the study implementation methods of the Master Cybersecurity Engineering programme fully contribute to the achievement of the aims and learning outcomes. Student-centered learning and teaching principles are implemented.

2.2.4.

If the study programme is implemented in a foreign language, provide an assessment of the provision of internship in a foreign language, including for foreign students.
The Master Cybersecurity Engineering programme provides Internship in the amount of 6 CP, which corresponds to 6 weeks. Internship is included in the 3rd semester of the study plan (CySec MA SAR, Chapter 3.2). The goal of internship is to provide an opportunity for students to get to know the

management structure and operating principles of a particular organization and to consolidate theoretical knowledge acquired in the study programme, to improve practical skills needed for specialists of the relevant field, and to develop proposals for the improvement of cybersecurity processes.
It is the standard practice to organize internships in places where students are employed. If students require assistance in finding an internship place, the study program director can help. ViA has entered into cooperation agreements with industry companies and also received internship offers from public institutions. for Master Cybersecurity Engineering programme students (SAR, Chapter 3.2). During the meeting with experts, employers also expressed their willingness to take students for Internship, also stating that it could be the starting point for further employment.

The Internship Regulations for Master Cybersecurity Engineering programme students are outlined in Annex 61P of Master Cybersecurity Engineering programme SAR. The Internship Regulations and tasks are available in Latvian and English. During the reporting period, only one international student had to do an internship, and he did it at his current workplace (Master Cybersecurity Engineering programme SAR, Chapter 3.2).
Summarizing, Internship is offered both to local and international students, and it is organized effectively.

2.2.5.
N/A

2.2.6.

FE has the methodologic guidelines for preparing Master Thesis: “Guide for Preparation of Study Projects and Graduation Papers”. The document was revised and updated in 2021 (Master Cybersecurity Engineering programme SAR, Chapter 3.2).
The Master Cybersecurity Engineering programme has so far had 11 graduates, as outlined in Annex 2P of SAR. The final theses of all the students have been listed and analyzed in Master Cybersecurity Engineering programme SAR Chapter 3.2. The topics covered in these theses are relevant to the field of cybersecurity.
Summarizing, the topics of students' final theses are relevant to the field and correspond to the Master Cybersecurity Engineering programme.

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
The Master Cybersecurity Engineering programme content is topical, interconnected and complementary and allows for achievement of the study program’s objectives and learning outcomes. The programme fully complies with the state regulations.

The programme has an advisory board, including professionals and company representatives, providing information on the current trends in the sector and the skills required. The CySec MA programme meets the requirements of the industry and labor market, its content is based on the achievements and findings of the cybersecurity field of science.

The Master Cybersecurity Engineering programme has clearly defined objectives and learning outcomes, with individual study courses' learning outcomes mapped to the programme learning outcomes.
The sequence of courses, and their distribution among semesters in the programme is logical,

however the rather large number of small 2CP courses could be reduced.
The study implementation methods of the programme fully contribute to the achievement of the aims and learning outcomes, and student-centered learning and teaching principles are implemented. Internship is organized effectively both to local and international students. Topics of students' final theses are relevant to the field.
Strengths:
1. Cybersecurity professionals are involved in the implementation of the Master Cybersecurity Engineering programme
2. The Master Cybersecurity Engineering programme content is topical, and the sequence of courses, and their distribution among semesters is logical.
3. The Master Cybersecurity Engineering programme has clearly defined objectives and learning outcomes.

Weaknesses:
1. The Master Cybersecurity Engineering programme is very fragmented due to a large number of small (2 CP) courses, 9-10 courses per semester.
2. Not all descriptions of study courses include a clear definition of requirements for the acquisition of credit points.
3. Not all study courses include a clear description of the tasks of students' independent work.

Assessment of the requirement [5] (applicable only to master's or doctoral study programmes)

1 R5 - The study programme for obtaining a master's or doctoral degree is based on the achievements and findings of the respective field of science or field of artistic creation.

Assessment of compliance: Fully compliant

Professionals are involved in the implementation of the Master Cybersecurity Engineering programme, lecturers take part in research activities, Master Thesis topics are related to research projects. The Master Cybersecurity Engineering programme has a rather large number of small 2CP courses was indicated, however this weakness is not significant and could be considered in further development of the Master Cybersecurity Engineering programme.

2.3. Resources and Provision of the Study Programme

Analysis

2.3.1.

Study process is implemented at both buildings located in Valmiera. There are 38 classrooms, including 3 computer classrooms for practical classes with a total of 90 workplaces. For the implementation of the study process, 5 laboratories are used. Laboratories are available to students for classes, individual and group work and research purposes. (SAR p.40-41)
During the assessment visit, students and graduates all expressed their satisfaction with the available material technical basis. Both groups mentioned that the programme and its equipment provide the needed knowledge to work in the industry.
The informative provision is provided by Valmiera Integrated Library, where books and archives of the best scientific papers are available. E-resources can be accessed from anywhere with individual login information. In 2022, there were purchased 4 titles of 4 copies in the IT field. Funding for Vidzeme University of Applied Sciences library collection is not divided by the study fields because during the study process the library resources are often used by students of several study fields.

(SAR p.44)
Control and sustainability of the use of financial resources are laid down in the procedure for development, approval, execution and control of the budget of Vidzeme University of Applied Sciences (approved on 26 October 2011 at the ViA Senate meeting, decision No. 10/7.1)
ViA provides all necessary resources and complies with specific features and the conditions for the implementation of the study programme.

2.3.2.
n/a

2.3.3.

Funding of the Master Cybersecurity Engineering programme consists of state funded budget places and income from studies paid by the students. Expenses are calculated per each student. Full time student expenses are planned accordingly: direct expenses 75.5% (salaries 53.4%, administrative salaries 21.1%, research activities compensation 0.3%, other administrative expenses 0.7%) and indirect expenses 24.4% (salaries 13.2%. other administrative expenses 4%, loan repayment 0.8%, capital expenses 0.5%, building management 6%). (Annex 15) The expenses are planned in a transparent and open manner.
In the next admissions (2023), there are 10 budget places for full time studies. The study fee is 4400 EUR for full time studies.
As per Annex 2 the number of students in the programme in study year 2022 /2023 is 18. From this number, 11 students are enrolled in state funded budget places and all students are full time. Their admissions numbers are not very high and not all budget places are filled, however there is a steady and positive tendency: in 2022 9 students were enrolled, in 2021 -9, in 2020 - 6, in 2019 - 6. More should be done to increase the admissions number not to see this as a threat in the future.
The study programme has the minimum number of students to ensure the profitability of the study programme and facilitates the development of the study programme. This is to conclude that ViA has funding available to the study programme, funding sources and the use of funding ensures full implementation of the study process.

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
The study provision is sufficient for the implementation of the study programme. Studies are held at both buildings, the 5 laboratories offer the needed equipment for study process and research activities. The methodological and informative resources are accessible to students and sufficient.
The expenses are planned per each student in a transparent manner. The finances are balanced. The study programme is rentable and the number of students exceeds the minimal numbers.
Strengths:
There are 5 laboratories where each provides the needed equipment to gain practical knowledge.
The students and graduates are satisfied with the available material technical basis.

Weaknesses:
None

Assessment of the requirement [6]

1 R6 - Compliance of the study provision, science provision (if applicable), informative provision (including library), material and technical provision and financial provision with the conditions for the implementation of the study programme and ensuring the achievement of learning outcomes

Assessment of compliance: Fully compliant

The resources are sufficient for the implementation of the Master Cybersecurity Engineering programme. The finances are balanced.

2.4. Teaching Staff

Analysis

2.4.1.

The SAR (p.116-120), attached Annexes 19P-Docetāju saraksts-List of lecturers-red, Apliecinajums-IF-valsts-valoda.edoc, Apliecinajums-IF-anglu-valoda.edoc and 20P-Docetaju_CV-Acad.Person._CV affirm that the qualification of the teaching staff complies with the requirements for the implementation of the professional master study program and the requirements set forth in the Law of Higher Education Institutions and is appropriate for Master Cybersecurity Engineering programme implementation, allow to achieve the aims and ensure the learning outcomes of the Master Cybersecurity Engineering programme in both Latvian and English languages.
According to the prerequisite for involvement of academic staff in the implementation of Master Cybersecurity Engineering programme defined by ViA, the candidate must have a Master's degree or doctoral degree, as well as knowledge of English at least at B2 level. But in Master's level programmes - C1 level, in accordance with the conditions of implementation of the project "Establishment and Approval of New Master's Study Programmes to Promote International 51 Competitiveness of Vidzeme University of Applied Sciences" Nr.8.2.1.0/18/A/011) (SAR, p.50). The attached list of teaching staff (Annex 9P-Docetāju saraksts-List of lecturers-red.xlsx) affirms that all members have necessary degree, i.e. master's degree and higher. 17 from 19 members of the teaching staff are industry professionals – practicing specialists, industry experts with higher education or professional certificates confirming qualification/experience (CISSP, CISA, CISM, CRISC, CEH, ISO/IEC 27002-2022) (SAR p.117). Academic staff involved in implementation have the necessary academic (higher) education or professional qualifications.
In the academic year 2022/2023, 19 faculty members have been involved in the implementation of professional master study programme "Cybersecurity Engineering" - 9 guest lecturers, 5 assistant guest professors, 1 associate guest professors, 1 guest professor, 1 associate professor, 1 professor (SAR, p.94). 6 members have a doctor's degree, 4 members are PhD students, and the other 9 members have a master's degree. 89% of teaching staff are industry professionals – practicing specialists, industry experts with higher education or professional certificates confirming qualification/experience (CISSP, CISA, CISM, CRISC, CEH, ISO/IEC 27002-2022) (SAR p.112).
The involvement of visiting lecturers/industry professionals in the implementation of the content of the study programme has provided expected results, and this is reflected in student feedback and course content evaluation (SAR, p.119).
In accordance with Article 55, Paragraph 1, Clause 3 of the Law on Higher Education Institutions, the description of study content and implementation should include the list of academic personnel involved in the implementation of the program, their qualifications and expected duties. Required information is provided.
The attached annexes Apliecinajums-IF-valsts-valoda.edoc and 19P-Docetāju saraksts-List of lecturers-red.xlsx affirms that all members of the teaching staff have knowledge of the official/national language complies with the Regulations on the extent of knowledge of the national language. All members of teaching staff that are involved in the implementation of professional master study programme "Cybersecurity Engineering" have English knowledge level at least B2 and higher (Annex 19P-Docetāju saraksts-List of lecturers-red.xlsx).
In addition, ViA has involved 1 associated guest professor from USA to teach three study courses

“Preparation Course for Cybercrime Investigation” (2 credit points), “Digital Forensics I”(2 credit points), “Digital Forensics II “ (2 credit points) and to facilitate the acquisition of international experience, share of foreign academic and professional experience in a broader perspective of the field (Annex 19P-Docetāju saraksts-List of lecturers-red). During the reporting period, experienced professionals/foreign guest lecturer from Estonia has also been invited which knowledge, professional experience and methodology used by these lecturers were rated by students higher than others (SAR, p.117). It refers to Article 56, Paragraph 3 of the Law on Higher Education Institutions. The Law states: “the study programs must be implemented in the national language in universities. In a study program that is implemented in the national language, no more than one-fifth of the credit points of the study program may be implemented in other official languages of the European Union, taking into account that this part cannot include final and state exams, as well as the development of qualifications, bachelor's and master's theses”. ViA fulfills the Article 56, Paragraph 3 requirements of the law.

2.4.2.

During the reporting period, the number of the members of the teaching staff has increased. In the academic year of 2021/2022 16 lecturers were involved in the implementation of the professional master study programme “Cybersecurity Engineering”. In the academic year 2022/2023, 19 faculty members are involved in the implementation of the study programme. The members are both academic staff elected by ViA, as well as invited visiting lecturers, industry professionals, industry experts (SAR p.117). Changes to the teaching staff composition have mostly affected the industry professionals or visiting lecturers. In most cases, the change of visiting lecturers has been related to the increasing workload in their main workplaces. There were also two cases, when lecturers were replaced based on the conclusions of the internal study programme audit and student complaints about the quality of work of visiting lecturers. The new visiting lecturers have introduced improvements to the programme, which are appreciated by students.
The main criteria for the selection of lecturers are professional experience, education, and communication skills (SAR, p.118). For the purposes of quality control, at the end of each semester, discussions are held with the students to find out their opinion on the quality of the study content and lecturer performance (SAR, p.119).
During the reporting period, two of the programme graduates were also involved in the implementation of the content of the study programme and experienced professionals/foreign guest lecturers from Estonia and the USA have also been involved in the implementation of the study programme (SAR, p.117).
According to the SAR (p.94, p.10) ViA has set a number of measures to ensure suitability of lecturers for working with students and verify qualifications and competence of lecturers to provide high-quality education.
ViA has defined requirements and prerequisites for involvement of academic staff in the implementation of study programmes (SAR, p.50) that are laid down in ViA Regulations on Elections to Academic Positions.
ViA has defined job descriptions and responsibilities of lecturers, which lay down requirements for academic work, research, academic and scientific qualification improvement and also for administrative work that the Senate has approved.
ViA has defined Remuneration Regulations that contain the division of academic work, conditions for research work. In addition, once per academic year (in October), the lecturer has to submit to the Dean of the faculty a report on his or her achievements in scientific work, experience gained in projects, seminars and conferences, if any (SAR, p.49).
ViA implements various activities, including student surveys (course assessment surveys) of each study course taught by the lecturer in the relevant semester of the academic year that are

mandatory and study course observations (Meeting with academic staff, meeting with faculty management). It provides an opportunity for lecturers to improve and monitor the quality of their academic work.
Once per academic year ViA organizes a seminar for lecturers on the study quality assurance issues in which they discuss their experience/observations gained during the lectures in order to ensure the assessment of the performance quality of ViA academic staff. The Director of the study field organizes an additional meeting if it is necessary to address quality improvement issues in more detail and/or to conduct in-depth research of problems (including document review) (SAR, p.49).
In accordance with the Cabinet Regulations of the Republic of Latvia “Regarding Education and Professional Qualifications Necessary for Teachers and Procedure for Improving the Professional Competence of Teachers”, professional development can include international mobility in accordance with the goals of professional development, participation in projects, conferences and seminars. According to the SAR (p.10) the academic staff "is given an opportunity to supplement and expand his/her knowledge and professionalism by gaining foreign experience or engaging in internship at foreign higher education institutions/organizations, as well as by participating in relevant seminars and conferences – within Erasmus, etc. mobility programmes" in order to ensure improvement of skills, work quality and professional development. The attached annex 23P_Mobilitate_Mobility.xls approves that teaching staff have used the opportunity to participate in staff mobility programme. Totally there were 39 cases of Academic staff mobility during the review period 2014-2021.
In order to ensure the professional development of lecturers in the period from 2018 to 2021, the European Social Fund project “Development of Academic Staff and Human Resources of Vidzeme University of Applied Sciences” (SAM 8.2.2) was implemented within the framework of which the academic staff had the opportunity to increase their knowledge in digital technologies and academic leadership, to learn English, as well as to do internship in industry companies (SAR, p.49). This opportunity is mainly used by the academic staff of the programme or the elected academic staff of VIA (SAR, p.120).

2.4.3.
N/A

2.4.4.

According to annex 21P_ Publikācijas_Publications.xls and 20P-Docetaju_CV-Acad.Person._CV.zip, the scientific activity of academic staff corresponds to the recommendations set in the Law on Higher Education Institutions paragraph 3 of the first part in Article 55. But exerts would note that only 4 from 19 members of academic staff involved in the implementation of the professional master study programme “Cybersecurity Engineering” have published publications during the review period. 3 members of academic staff have participated in the projects during the review period. Only 3 members have participated in scientific conferences during the review period 2014-2021.
17 from 19 members of the teaching staff are industry professionals – practicing specialists, industry experts with higher education or professional certificates confirming qualification/experience (CISSP, CISA, CISM, CRISC, CEH, ISO/IEC 27002-2022) (SAR p.117). The attached CV (Annex 20P-Docetaju_CV-Acad.Person._CV.zip) approves that industry professionals involved in implementation of study programme have more than 5 years of practical experience. So, members of teaching staff involved in the implementation of the professional master study programme “Cybersecurity Engineering” fulfills the requirement of the Law on Higher Education Institutions. So their practical experience and continuous development of competences in the real work environment can be adapted to the performance of research activities.

2.4.5.

According to the SAR (p. 120), Via carries out several activities within the study programme to foster cooperation between lecturers that was approved by management of the faculty and academic staff during the visit.
+ The general faculty meeting (a Faculty Council meeting) to reflect on the semester and the current issues and challenges of the study programme, which is convened at the end of study year where all members of academic staff are invited to participate. The Programme Director reports on current events, on current developments, student evaluations, student performance, challenges in the programmes. Participants are invited to give their views on both the processes and the promotion of mutual cooperation.
+ During the implementation of the European Social Fund project "Development of academic staff and human resources of Vidzeme University of Applied Sciences" (SAM 8.2.2.), from 2018 to 2021, a general cross-hospitalization of lecturers' classes took place, during which the practice of cross-observation of classes, programme lecturers had the opportunity to participate in course hospitalizations and evaluate the work of their colleagues, make recommendations for improving the study process, and share their experience.
+ The programme director contacts the academic staff, invites to join discussion, supervises and manages the interconnection of study courses, and facilitates, where necessary, promotes/encourages the cooperation between teaching staff.

Conclusions on this set of criteria, by indicating strengths and weaknesses

Conclusions:
The qualification of the teaching staff complies with the requirements for the implementation of the Master Cybersecurity Engineering programme and the requirements set forth in the Law of Higher Education Institutions and is appropriate for bachelor Master Cybersecurity Engineering programme implementation, allow to achieve the aims and ensure the learning outcomes of the Master Cybersecurity Engineering programme in both Latvian and English languages. ViA carries out several activities within the Master Cybersecurity Engineering programme to foster cooperation between lecturers.
Strengths
1. Academic staff involved in implementation have the necessary academic (higher) education and/or professional qualifications.
2. 17 from 19 members of the teaching staff are industry professionals – practicing specialists, industry experts with higher education or professional certificates confirming qualification/experience.
3. Well-thought-out procedure for selection of teaching staff and evaluation of qualifications and competence.

Weaknesses:
Have not been identified.

Assessment of the requirement [7]

1 R7 - Compliance of the qualification of the academic staff and visiting professors, visiting associate professors, visiting docents, visiting lecturers and visiting assistants with the conditions for the implementation of the study programme and the requirements set out in the respective regulatory enactments.

Assessment of compliance: Fully compliant

All members of teaching staff involved in the implementation of the Master Cybersecurity Engineering programme fulfills the requirement of the Law on Higher Education Institutions.

2.5. Assessment of the Compliance

Requirements

1 1 - The study programme complies with the State Academic Education Standard or the Professional Higher Education Standard

Assessment of compliance: Fully compliant

The attached annex (35P_KI_atbilstība valsts standartam_Compliance_LV_ENG-red-corr.docx) affirms that Master Cybersecurity Engineering programme complies with the regulations of the Cabinet of Ministers of August 26, 2014 no. 512 “Noteikumi par otrā līmeņa profesionālās augstākās izglītības valsts standartu”. Experts invite the management to pay attention to the quality of the Master Cybersecurity Engineering programme description. The defined tasks of the study programme are the same for all ViA bachelor and master level study programmes.

2 2 - The study programme complies with a valid professional standard or the requirements for the professional qualification (if there is no professional standard required for the relevant occupation) provided if the completion of the study programme leads to a professional qualification (if applicable)

Assessment of compliance: Not relevant

3 3 - The descriptions of the study courses and the study materials have been prepared in all languages in which the study programme is implemented, and they comply with the requirements set forth in Section 561 , Paragraph two and Section 562 , Paragraph two of the Law on Higher Education Institutions.

Assessment of compliance: Partially compliant

Attached study course descriptions (Annex 37P_KI_Kursu-apraksti_Course-Descriptins.zip) are prepared in Latvian and English languages and comply partly with the requirements set forth in Section 561, Paragraph two of the Law on Higher Education Institutions.
Not all descriptions of study courses include a clear definition of requirements for acquisition of credit points, for example, in the description of study course “Drošības incidentu pārvaldība”, “Information Gathering Techniques”, “Applied Cryptography” the division between practical and final test in % are mentioned instead of requirements.
Not all study courses include a clear description of the organization and tasks of students' independent work. For example, in the description of study course “Security Incident Management”, “Information Gathering Techniques”, is mentioned only hours of independent work - 56 and study form - group work, practical assignments without specifying the topic.

4 4 - The sample of the diploma to be issued for the acquisition of the study programme complies with the procedure according to which state recognised documents of higher education are issued.

Assessment of compliance: Fully compliant

The provided Diploma and its annexes samples (34P_KI_Diploma-paraugs_Diploma-example-red.zip) comply with the criteria set in the Minister Cabinet regulation No.202 “Kārtība, kādā izsniedz valsts atzītus augstāko izglītību apliecinošus dokumentus”. But faculty management should pay careful attention to the information mentioned in the Minister Cabinet regulation No.202 Clause 15.
The provided Diploma and its annexes samples have been translated partly. The title of

university and text “profesionālā maģistra diploms” and word “Sērija …” on page 2 are not translated. If ViA decides to use the duplicating text in English, experts invite management of ViA to translate Diploma and its annexes’ samples completely.

5 5 - The academic staff of the academic study programme complies with the requirements set forth in Section 55, Paragraph one, Clause 3 of the Law on Higher Education Institutions.

Assessment of compliance: Not relevant

6 6 - Academic study programmes provided for less than 250 full-time students may be implemented and less than five professors and associated professors of the higher education institution may be involved in the implementation of the mandatory and limited elective part of these study programmes provided that the relevant opinion of the Council for Higher Education has been received in accordance with Section 55, Paragraph two of the Law on Higher Education Institutions.

Assessment of compliance: Not relevant

7 7 - At least five teaching staff members with a doctoral degree are among the academic staff of an academic doctoral study programme, at least three of which are experts approved by the Latvian Science Council in the respective field of science. At least five teaching staff members with a doctoral degree are among the academic staff of a professional doctoral study programme in arts (if applicable).

Assessment of compliance: Not relevant

8 8 - The teaching staff members involved in the implementation of the study programme are proficient in the official language in accordance with the regulations on the level of the official language knowledge and the procedures for testing official language proficiency for performing professional duties and office duties.

Assessment of compliance: Fully compliant

The attached annexes Apliecinajums-IF-valsts-valoda.edoc and 19P-Docetāju saraksts-List of lecturers-red.xlsx affirms that the knowledge of the official/national language of the academic staff involved in the implementation of the study program complies with the Regulations on the extent of knowledge of the national language and the procedure for testing the knowledge of the national language for performing professional and official duties.

9 9 - The teaching staff members to be involved in the implementation of the study programme have at least B2-level knowledge of a related foreign language, if the study programme or any part thereof is to be implemented in a foreign language (if applicable).

Assessment of compliance: Fully compliant

The attached annexes Apliecinajums-IF-anglu-valoda.edoc and 19P-Docetāju saraksts-List of lecturers-red.xlsx affirms that English knowledge level of the teaching staff involved in the implementation of the study programme is B2 and higher.

10 10 - The sample of the study agreement complies with the mandatory provisions to be included in the study agreement.

Assessment of compliance: Fully compliant

The attached Template of Study agreement (0P-Studiju-ligums-t.sk.-2.8.p.-KOMPENSACIJA_Study-agreement-also-2.8.p.-COMPENSATION.docx) comply with the requirements set in the Minister Cabinet regulation No.70 “Studiju līgumā oblgāti ietveramie noteikumi”.

11 11 - The higher education institution / college has provided confirmation that students will be provided with opportunities to continue their education in another study programme or another higher education institution or college (agreement with another accredited higher education institution or college) if the implementation of the study programme is terminated.

Assessment of compliance: Fully compliant

The Agreements with Rezekne Academy of Technologies on students take over in case of cancellation of study programs (see Vienošanās_studentu_pārņemšanai_KI.pdf in FINAL_ligumi_agreements.zip) affirms that students are provided with opportunities to continue their education in Rezekne Academy of Technologies professional master study program "Computer systems" if the implementation of the study program is terminated.

12 12 - The higher education institution / college has provided confirmation that students are guaranteed compensation for losses if the study programme is not accredited or the study programme's license is revoked due to the actions (actions or omissions) of the higher education institution or college and the student does not wish to continue studies in another study programme.

Assessment of compliance: Fully compliant

ViA guarantee a compensation for losses to the Student for the credit points not obtained (for which it is not possible to issue an academic statement, if the credits are not obtained due to a fault of ViA) by transferring tuition fee paid by the Student to his or her specified bank account within 1 (one) month if the study programme is not accredited or the study programme license is taken away due to ViA's activity (or inactivity), and the Student does not want to continue studies in another study programme (Annex 0P-Studiju-ligums-t.sk.-2.8.p.-KOMPENSACIJA_Study-agreement-also-2.8.p.-COMPENSATION.docx)

13 13 - The joint study programmes comply with the requirements prescribed in Section 55.(1), Paragraphs one, two, and seven of the Law on Higher Education Institutions (if applicable)

Assessment of compliance: Not relevant

14 14 - Compliance with the requirements specified in other regulatory enactments that apply to the study programme being assessed (if applicable)

Assessment of compliance: Not relevant

Assessment of the requirement [8]

1 R8 - Compliance of the study programme with the requirements set forth in the Law on Higher Education Institutions and other regulatory enactments.

Assessment of compliance: Partially compliant

Not all study courses include a clear description of the organization and tasks of students' independent work.
Not all study courses include a clear description of the organization and tasks of students' independent work.

General conclusions about the study programme, indicating the most important strengths and weaknesses of the study programme

Conclusions:
The Master Cybersecurity Engineering programme is evidently and fully compliant with the study field. The skills and competences that can be acquired in the Master Cybersecurity Engineering

programme are fairly popular and needed skills in today's IT and Engineering economy, also of local level. The number of students is relatively low. The study provision is sufficient for the implementation of the Master Cybersecurity Engineering programme. The methodological and informative resources are accessible to students and sufficient. The qualification of the teaching staff complies with the requirements set in the Law on Higher Education Institutions and allows to achieve the aims, as well as ensure the learning outcomes of the study programme in both Latvian and English languages.
Strengths:
1. The Master Cybersecurity Engineering programme is evidently and fully compliant with the study field.
2. The existence and continuation of the Master Cybersecurity Engineering programmeis well justified by strategic and economic reasons as well.
3. The Master Cybersecurity Engineering programme content is topical, and the sequence of courses, and their distribution among semesters is logical.
4. The study provision is sufficient for the implementation of the Master Cybersecurity Engineering programme. The laboratories provide needed equipment to gain practical knowledge.
5. Academic staff involved in implementation have the necessary academic (higher) education and/or professional qualifications that allow to achieve the aims and ensure the learning outcomes of the study program in both Latvian and English languages.

Weaknesses:
1. The Master Cybersecurity Engineering programme is very fragmented due to a large number of small (2 CP) courses, 9-10 courses per semester.
2. Not all descriptions of study courses include a clear definition of requirements for the acquisition of credit points, and a clear description of the tasks of students' independent work.
3. The number of enrolled students is quite low, moreover several students leave the Master Cybersecurity Engineering programmefor various reasons.

Evaluation of the study programme "Cybersecurity Engineering"

Evaluation of the study programme:

Good

2.6. Recommendations for the Study Programme "Cybersecurity Engineering"

Short-term recommendations

Revise course descriptions, clarifying the requirements for the acquisition of credit points and task descriptions for student independent work.
Improve the quality of the study programme description, i.e. description of study programme tasks for each study programme should be unique.
The FE management should pay careful attention to the information mentioned and the example given in the Minister Cabinet regulation No.202 Clause 15. Make changes in the Diploma sample, i.e. translate all the text in English in the translated version of the diploma.

Long-term recommendations

Consider reducing the number of small (2 CP) courses per semester.

If the composition of teaching staff changes, attracting representatives from academia rather than industry, ensure the presence of the scientific activity of academic staff. Ensure higher involvement of teaching staff in scientific activities, for example, increase the number of publications published by teaching staff, i.e. at least one publication during each 2-3 years.
The number of enrolled students is quite low, moreover several students leave the programme for various reasons. Efforts must be made to mitigate this effect and increase the number of students.

II - "Virtual reality and smart technologies" ASSESSMENT

II - "Virtual reality and smart technologies" ASSESSMENT

2.1. Indicators Describing the Study Programme

Analysis

2.1.1.

The Professional Master study programme Virtual Reality and Smart Technologies 47484 is evidently and fully compliant with the study field Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science, as it is convincingly justified in the SAR (pp. 151-152).
The Professional Master study programme Virtual Reality and Smart Technologies, corresponds to the field of study as it provides higher professional education in the field of information technologies. In accordance with the title of the study programme, students acquire the skills and experience necessary for a developer-engineer of virtual reality solutions. Thus, upon graduation, students are awarded the Professional Master's Degree in Information Technology. The aim of the study programme is to provide students with the opportunity to acquire all the necessary skills to work professionally in the field of virtual and augmented reality, developing VR/AR solutions, or performing project design and implementation supervision duties.
The Professional Master study programme Virtual Reality and Smart Technologies ensures the integration and modularity of the courses. The aim of the Professional Master study programme Virtual Reality and Smart Technologies offered by VIA is to provide information technology students with the opportunity to acquire the necessary competences and prepare them for professional activities in the field of augmented reality solutions development in order to become highly qualified virtual and augmented reality (VR/AR) specialists. Further aim of the programme developed and offered by VIA is to provide information technology students with the opportunity to acquire the necessary competences and prepare them for professional activities in the field of augmented reality solutions development in order to become highly qualified virtual and augmented reality (VR/AR) specialists. The aim of the study programme is in line with the achievable objectives of the programme, including providing students with practical professional experience, ensuring a student-centered study approach, facilitating students' further educational aspirations, and providing training of professionals necessary for the needs of the Latvian VR/AR industry. The study process motivates the involvement of students and graduates in the research activities of Vidzeme University of Applied Sciences, as well as in student grant research, thus contributing to the practical experience of young professionals.
The Professional Master study programme Virtual Reality and Smart Technologies includes subjects which require prior knowledge in the IT field, therefore one of the admission requirements is a professional bachelor's degree, a second level professional or equivalent higher education qualification in information technology or information and communication technology or an equivalent field, followed by a full-time study programme of at least four years' duration.

The content of the study programme corresponds to aims of the study field, as the Professional Master study programme Virtual Reality and Smart Technologies will enable students to work with technological support in the field of VR/AR to develop VR/AR software and to analyze solutions at different stages of their development.

2.1.2.

As it is adequately described in the SAR (p.153), the title of the Professional Master study programme Virtual Reality and Smart Technologies well corresponds to the aim and actual content of the programme. The awarded degree corresponds to the content and also to the expectations of such a study programme - the Professional Master's Degree in Virtual Reality and Smart Technologies is awarded.
The title "Virtual Reality and Smart Technologies" is in line with the content of the study programme. It includes the most substantive part of the study subjects, which focuses on smart technologies. The "smart technologies" part of the title emphasizes the diversity of the study programme, including the opportunities to analyze other technologies - including augmented reality (AR), mixed reality (MR) - and to examine the place and importance of smart systems and microcontrollers in the study content of the course of study that the programme is pursuing.
The Professional Master study programme Virtual Reality and Smart Technologies is full-time - the total duration of the programme is 1 year and 6 months, with a Master's thesis in the third semester. The programme is of a size appropriate to a
Master's degree programme. Successful completion of the subjects, internship and state
examination leads to 60 CP, with admission requirements of Professional bachelor's degree, professional second cycle or equivalent higher education qualification in information technology or computer science, completed full-time in a programme of study of at least four years' duration and minimum English level of B2 for a programme form in English.
The educational classification code is 47484 which according to Latvian Education Classification (Latvian Cabinet of Ministers Regulations (Cab, Reg.) No. 322, https://likumi.lv/ta/id/291524-noteikumi-par-latvijas-izglitibas-klasifikaciju), corresponds to the following codification: meaning of the first two digits `47` notes that this study programme is professional master programme (level 7 of Latvian and European Qualification Framework) and the last three digits `484` indicate that this programme is related to the educational group of “Programming".
The duration and scope of the Professional Master study programme Virtual Reality and Smart Technologies implementation (including different study programme implementation options), as well as the implementation language, are reasonable and justified.
Cooperation with the ICT industry is needed in order to create the professional standard for Virtual reality and smart technologies occupational areas, thus enabling the possibility to award a professional qualification upon successful graduation of the study programme’s Professional Master “Virtual reality and smart technologies” 47484.

2.1.3.

Since this is a new Professional Master study programme Virtual Reality and Smart Technologies, only minor changes have been conducted so far, which were reported in p.150 of the SAR These are mostly about some AR/VR related courses.
The detailed changes are as follows.
There were some changes made in the course content of the study programme - the study course "VR/AR Hardware and Physical Structure, Elements of IoT" title changed to "VR/AR Hardware and

Physical Structure". The changes made to the course are aimed at broadening the content in relation to virtual and augmented reality technological solutions, while reducing the amount of material related to IoT technologies in the lecture content. The changes have been made because of the decision to focus the content of the course on virtual and augmented reality solutions, following a comprehensive analysis of the course content. In addition, changes have been made to the course content during the period, replacing the course "3D graphics programming at advanced level" with "Internet-based VR and AR applications".The changes were made due to the fact that the original course title did not reflect the main objective of the course and current developments in the field, which include a focus on the optimisation of augmented reality solutions for use in the Internet environment.
Changes have also been made to the course “Simulation modelling and data 3D visualization”. The content of the course has been revised and changes have been made in line with the requirements of the labor market and specifically the market situation for augmented reality solutions. The course content includes new types of methods, including the implementation of 3DBI data visualization, as well as basic skills for 3D integrated data visualization in PowerBI data analytics and augmented reality solutions.
It is evident from the meetings, that the management and the teaching staff are fully aware of the need for continuous development and improvement of these courses, according to the development of the actual technology. This also needs a solid financial background, due to the high demand of state-of-the-art technologies.

2.1.4.

The Professional Master study programme Virtual Reality and Smart Technologies tries to keep balance between scientific and practice oriented approach, and the establishment of this Master is sufficiently justified by the growing market demand for virtual and augmented reality professionals and experts in Latvia and the world, although this need is not fully supported by factual data in the Report.
According to forecasts described in the SAR (p.152), the virtual and augmented reality market in the European Union will grow at an average annual rate of 35% between 2018 and 2026. At the same time, market turnover will grow from €389 million in 2018 to €4305 million in 2026. Meanwhile, globally, the industry's total market share reached USD 27.6 billion in 2021, while it is forecast to reach USD 856.2 billion in 2031, with a compound annual growth rate of 41.1%. It should be noted that the Professional Master's degree programme "Virtual Reality and Information Technologies" is currently the only one in Latvia that trains specialists in this specific field. Thus, the study programme, its objectives and content are successfully integrated into the field of study. The programme provides students with a broad knowledge focusing on key areas of mobile technology, augmented and virtual reality, creating an understanding of industry issues, challenges and solutions to create innovative solutions.
The number of enrolled students is approximately constant (~10), and the drop-out rate is very low. With these numbers the master is on a good path.
Graduate surveys data (SAR p.152) are as follows
The 2021 survey has 50% (5 respondents) of the 2018/2019 academic year graduates and concludes that 100% of respondents are employed, including four in the private sector and one in the public sector. Among the respondents, 40% are employed in Valmiera, while 60% are employed in Riga. The most important competences in professional activity are teamwork and cooperation skills; analytical and critical thinking skills; problem solving skills; information acquisition, selection and analysis skills; practical use of IT tools.
Overall, based on this 2021 survey 100% of respondents are employed, including a couple of graduates in the private sector. Some of the graduates have found jobs in the local economic sector,

which is of utmost importance.

2.1.5.
n/a

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
The Professional Master study programme Virtual Reality and Smart Technologies is evidently and fully compliant with the study field. The title of the Professional Master study programme Virtual Reality and Smart Technologies and the awarded degree well correspond to the aim and actual content of the programme. Since this is a new study programme, only minor changes have been conducted so far. These are mostly about some AR/VR related courses. It is evident from the meetings, that the management and the teaching staff are fully aware of the need for continuous development and improvement of these courses, according to the development of the actual technology. Based on the 2021 graduate survey 100% of respondents are employed, which is a clear sign of the need for this master.

Strengths
1 A good prospect of employment of graduates, partly in local economy.

Weaknesses
none

2.2. The Content of Studies and Implementation Thereof

Analysis

2.2.1.

The Professional Master study programme Virtual Reality and Smart Technologies 47484 (VRST MA) is offered in full time study form – 1.5 years (60 CP). The VRST MA study programme does not currently lead to a qualification, as there is no corresponding qualification of virtual reality engineer. Thus, upon graduation from the study programme VRST MA the students are awarded the professional master's degree in Information Technologies (VRST MA SAR Chapter 3.2, section 3.2.2).
The VRST MA study programme is offered since year 2018 in two languages: Latvian and English. A 2CP course “Latvian language” is included for international students. (SAR of VRST MA, Annex 50P). This requirement is in place to ensure compliance with Latvian state regulations.
A 2CP course “Latvian language” is included for international students (Annex 36P of CySec SAR). This requirement is in place to ensure compliance with Latvian state regulations.
The content has been developed considering the labor market trends identified in cooperation with professional associations (SAR of VRST MA, Chapter 3.2). The content of study courses and modules is reviewed once per year, following yearly Industry Advisory Board meetings.
The VRST MA study programme is related to the requirements of the Software Engineer professional standard, but with a focus on virtual and augmented reality systems involving the use of mobile technologies (SAR of VRST MA, Chapter 3.2).
The VRST MA programme content is topical, interconnected and complementary. The courses in the programme are divided into 5 topical groups (SAR of VRST MA, Annex 50P): 1) VR/AR project planning and implementation (VR/AR Innovations and Actuality in Various Industries; VR/AR Hardware and Physical Structure; Interactivity, Scenarios Composition and Serious Games); 2) VR/AR

Authoring (Mobile Technology Solutions; Web Based VR and AR Applications; 3D Modelling Approaches and Scripting; Development of Advanced 3D Interactive Environments); 3) User experience design and implementation (UX Strategy Framework; Human Factors and Human-Computer Interaction; Motion Graphics and Environmental Effects); 4) Recognition services and intellectual environments (Geometry Processing and Visualization; Augmented Reality and Computer Vision Algorithms; Introduction in Machine Learning and Neural Networks); 5) VR/AR Project Sustainability and Transformation (Innovations and Project Management; research Methodologies and Scientific Publications; Simulation Modelling and Data 3D Visualisation; Hackathon and Teamwork). Study programme also includes Internship (6CP) and Master Thesis (20CP).
Additional 2 1CP courses (Civil Protection, Environment Protection) are included for the compliance with mandatory laws (the Environmental Protection Law, Civil Protection, Disaster Management Law) for those who did not take those courses at the Bachelor level (Annex 50P of VRST MA SAR).
The VRST MA study programme has clearly defined objectives and learning outcomes, and the mapping of individual study courses' learning outcomes to the program's learning outcomes is provided (Annex 53P of VRST MA SAR).
The sequence of courses, and their distribution among semesters is logical. However, the program is very fragmented due to a large number of small (2 CP) courses. All the courses, except Internship and Bachelor Thesis, are 2CP courses (SAR of VRST MA, Annex 50P). 9-10 courses per semester might be a rather big load for the students. During the meeting with experts, students also mentioned this as one of their desired improvements for the study programme.
Study course descriptions of all the courses in the programme are provided (Annex 51P. of ARST SAR). However, not all the descriptions include a clear definition of requirements for the acquisition of credit points (for example, in the description of the study course “Development of advanced 3D interactive environments”).
Compliance of the master's study program "Virtual Reality and Smart Technologies" with the Regulations of the Cabinet of Ministers of August 26, 2014 no. 512 "Rules on the state standard of second-level professional higher education" was carried out (Annex 49P of VRST MA SAR).
The compliance analysis was carried out correctly, and the results demonstrate that the master study programme fully complies with the state regulations.

2.2.2.

The content of the VRST MA is periodically discussed with Industry Advisory and representatives of the AR/VR industry, so this means that VRST MA is compatible with the newest trends in the field. Descriptions of courses also show that the study programme VRST MA content is up-to-date and in line with the achievements of the field (VRST MA SAR, Appendix 51P).

2.2.3.
The course descriptions of the VRST MA study programme indicate that rather basic study methods are used - lectures, practical activities, workshops, independent work (VRST MA SAR, Appendix 51P). Hackathon, indicated as a study method for one course, is probably only one exception. The programme lacks a larger variety of study methods and more advanced study methods.
The VRST MA study programme applies student-centred educational approach, by implementing the possibility for students to work on the topic of their individual final study work during the overall study process (VRST MA SAR, Chapter 3.2). Each student is motivated to define the topic of his/her final thesis at the beginning of the study process. In this way, during the study process, students can validate the relevance and topicality of their chosen topic in the field, and can contact lecturers and study programme management on the issues of study thesis topic development.
Regular student surveys are conducted after each study course to assess the organizational processes, study course content, and teacher performance of the VRST MA study programme. These

surveys also provide students with an opportunity to suggest improvements to the program, including study methods.

2.2.4.
If the study programme is implemented in a foreign language, provide an assessment of the provision of internship in a foreign language, including for foreign students.
The VRST MA study programme includes a 6-week internship (6CP, second semester) to test and consolidate the knowledge and skills acquired in the study programme by working in a specific company and participating in company projects. The requirements for the internship are defined in the regulations approved by the ViA Faculty of Engineering Council (VRST MA SAR, Chapter 3.2).
All students, including international students, have the opportunity to apply for an Erasmus+ international placement. As there are no language barrier challenges in the employment environment, there are no difficulties for foreign students to find internships in the Latvian labor market (VRST MA SAR, Chapter 3.2).
If students require assistance in finding an internship place, ViA staff offers help in this. ViA has cooperation agreements with companies and public institutions regarding this. During the meeting with experts, employers also expressed their willingness to take students for Internship, also stating that it could be the starting point for further employment.

2.2.5.
N/A
2.2.6.

The VRST MA study programme has so far had 15 graduates, as outlined in Annex 2P of SAR. The final theses of all the students have been listed and analyzed in VRST MA SAR Chapter 3.2. The topics covered in these theses are relevant to the field of virtual reality and smart systems. The topics of defended Master Thesis can be grouped in the following way: practical industrial and technological VR/AR challenges (4 topics); industrial training (3 topics); education (3 topics); medicine (3 topics) and tourism (2 topics).
ViA Faculty of Engineering) FE has the methodologic guidelines for preparing Master Thesis: “Guide for Preparation of Study Projects and Graduation Papers” (Annex 05_2021_IF_methodical_guidelines.docx to VRST MA SAR).

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
The VRST MA program’s content is topical, interconnected and complementary and allows for achievement of the study program’s objectives and learning outcomes. However, situation with study program VRST MA positioning and degree title should be clarified. Also, a larger variety of study methods would be useful for programme courses.
Strengths:
1. The VRST MA study programme has clearly defined objectives and learning outcomes
2. The sequence of courses, and their distribution among semesters is logical.
3. Student-centered educational approach is applied through the possibility for students to work on the topic of their individual final study work during the overall study process .
Weaknesses:
1. The VRST MA is very fragmented due to a large number of small (2 CP) courses, 9-10 courses per semester.
2. Very basic study methods are used in most study programme VRST MA courses.
3. Not all descriptions of study courses include a clear definition of requirements for the acquisition

of credit points.

Assessment of the requirement [5] (applicable only to master's or doctoral study programmes)

1 R5 - The study programme for obtaining a master's or doctoral degree is based on the achievements and findings of the respective field of science or field of artistic creation.

Assessment of compliance: Fully compliant

Participation of industrial partners in the implementation of the VRST MA, course content is relevant, course content is based on latest achievements in the field. However the VRST MA is very fragmented due to a large number of small (2 CP) courses, but this could be considered when further developing the VRST MA.

2.3. Resources and Provision of the Study Programme

Analysis

2.3.1.

Information about the resources and material and technical provision of the VRST MA, including the teaching staff, generally is common to all programmes and it is presented in this report: Resources and provision of the study field.
Study process is implemented at both buildings located in Valmiera. There are 38 classrooms, including 3 computer classrooms for practical classes with a total of 90 workplaces. For the implementation of the study process, 5 laboratories are used: Electronics and Electrical Engineering Laboratory's equipment provides for a possibility to perform various measurements of direct and alternating current, as well as to perform experiments with various direct and alternating current circuits; Computer Network Laboratory – laboratory equipment provides for a possibility to assemble and disassemble computers; Virtual and Augmented Reality Laboratory – laboratory equipment provides for a possibility to create various virtual and augmented reality projects; Mechatronics Laboratory's equipment is used to understand the fundamentals of Electric Machinery, Electric Drive, Electropneumatics etc.; Mobile Technology Laboratory equipment provides a possibility to create mobile apps for Android, iOS and Windows environments.
Virtual and Augmented Reality Laboratory is a major part for the implementation of this study programme. The laboratory equipment provides for a possibility to create various virtual and augmented reality projects. Traditional input devices are replaced by three-dimensional manipulators, data gloves, joysticks, touch-sensitive surfaces, gestures, hand or head position tracking devices, etc. Instead of traditional visual output devices, stereoscopic screens, CAVE systems, head displays or projection walls are used. The latest VR/AR system authoring platforms and CAD software are used in the design of interactive and training systems. Laboratories are available to students for classes, individual and group work and research purposes. (SAR p.40-41)
During the assessment visit, students and graduates all expressed their satisfaction with the available material technical basis.
The informative provision is provided by Valmiera Integrated Library, where books and archives of the best scientific papers are available. E-resources can be accessed from anywhere with individual login information. In 2022, there were purchased 4 titles of 4 copies in the IT field. Funding for Vidzeme University of Applied Sciences library collection is not divided by the study fields because during the study process the library resources are often used by students of several study fields. (SAR p.44)
Control and sustainability of the use of financial resources are laid down in the procedure for

development, approval, execution and control of the budget of Vidzeme University of Applied Sciences (approved on 26 October 2011 at the ViA Senate meeting, decision No. 10/7.1)
ViA provides all necessary resources and complies with specific features and the conditions for the implementation of the study programme.

2.3.2.
n/a

2.3.3.

Funding of the VRST MA consists of state funded budget places and income from studies paid by the students. Expenses are calculated per each student. Full time student expenses are planned accordingly: direct expenses 69% (salaries 53.2%, administrative salaries 14.3%, research activities compensation 0.4%, other administrative expenses 0.9%) and indirect expenses 31% (salaries 16.3%. other administrative expenses 5%, loan repayment 0.9%, capital expenses 0.6%, building management 8.2%). (Annex 15) The expenses are planned in a transparent and open manner.
In the next admissions (2023), there are 10 budget places for full time studies. The study fee is 4400 EUR for full time studies.
As per Annex 2 the number of students in the programme in study year 2022 /2023 is 9. From this number, 6 students are enrolled in state funded budget places and all students are full time. Their admissions numbers are not very high and not all budget places are filled, however there is a steady and positive tendency: in 2022 4 students were enrolled, in 2021 -5, in 2020 - 9. More should be done to increase the admissions number not to see this as a threat in the future.
The VRST MA has the minimum number of students to ensure the profitability of the study programme and facilitates the development of the study programme. This is to conclude that ViA has funding available to the study programme, funding sources and the use of funding ensures full implementation of the study process.

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
The study provision is sufficient for the implementation of the VRST MA. Studies are held at both buildings, the 5 laboratories offer the needed equipment for study process and research activities, including the Virtual and Augmented Reality Laboratory. The methodological and informative resources are accessible to students and sufficient.
The expenses are planned per each student in a transparent manner. The finances are balanced. The study programme is rentable and the number of students exceeds the minimal numbers.
Strengths:
1 There are 5 laboratories where each provides the needed equipment to gain practical knowledge, including Virtual and Augmented Reality Laboratory.
2 The students and graduates are satisfied with the available material technical basis.

Weaknesses:
1 The admissions are low.

Assessment of the requirement [6]

1 R6 - Compliance of the study provision, science provision (if applicable), informative provision (including library), material and technical provision and financial provision with the conditions for the implementation of the study programme and ensuring the achievement of learning outcomes

Assessment of compliance: Fully compliant

The resources are sufficient for the implementation of the VRST MA. The finances are balanced. One weakness was identified, however it doesn't pose a treat to rentability.

2.4. Teaching Staff

Analysis

2.4.1.

The SAR (p.162-164), attached Annexes 19P-Docetāju saraksts-List of lecturers-red, Apliecinajums-IF-valsts-valoda.edoc, Apliecinajums-IF-anglu-valoda.edoc and 20P-Docetaju_CV-Acad.Person._CV affirm that the qualification of the teaching staff complies with the requirements for the implementation of the professional bachelor study program and the requirements set forth in the Law of Higher Education Institutions and is appropriate for VRST MA implementation, allow to achieve the aims and ensure the learning outcomes of the VRST MA in both Latvian and English languages. Academic staff involved in implementation have the necessary academic (higher) education or professional qualifications.
In the academic year 2021/2022, 14 faculty members have been involved in the implementation of the VRST MA - both the elected academic staff of the University, as well as invited guest lecturers, industry professionals (46.7%), industry experts (SAR, p.163).
According to the prerequisite for involvement of academic staff in the implementation of study programmes defined by ViA, the candidate must have a Master's degree or doctoral degree, as well as knowledge of English at least at B2 level. But if there is no Master's degree, there has to be at least five years of practical work experience in the specialty according to the subject to be taught in the profile subjects of the professional study programmes, submitting documents confirming professional experience and the length of service (SAR, p.50). The attached list of teaching staff (Annex 9P-Docetāju saraksts-List of lecturers-red.xlsx) affirms that 4 members have a doctor degree, 9 members have master's degree and 1 member have bachelor degree. One member with a bachelor degree has more than 5 years long professional experience in the study field (SAR, p.162, Annex 20P-Docetaju_CV-Acad.Person._CV.zip).
In accordance with Article 55, Paragraph 1, Clause 3 of the Law on Higher Education Institutions, the description of study content and implementation should include the list of academic personnel involved in the implementation of the VRST MA, their qualifications and expected duties. Required information is provided.
The attached annexes Apliecinajums-IF-valsts-valoda.edoc and 19P-Docetāju saraksts-List of lecturers-red.xlsx affirms that all members of the teaching staff have knowledge of the official/national language complies with the Regulations on the extent of knowledge of the national language. All members of teaching staff that are involved in the implementation of VRST MA have English knowledge level C1 (Annex 19P-Docetāju saraksts-List of lecturers-red.xlsx).

2.4.2.

There have been no changes in the composition of the teaching staff during the reporting period (SAR, p.163). But the main criteria for selection of lecturers are defined: education (degree), professional experience, research and creative activity, communication skills (SAR, p.162).
According to the SAR (p.10) ViA has set a number of measures to ensure suitability of lecturers for working with students and verify qualifications and competence of lecturers to provide high-quality education.
ViA has defined requirements and prerequisites for involvement of academic staff in the

implementation of study programmes (SAR, p.50) that are laid down in ViA Regulations on Elections to Academic Positions.
ViA has defined job descriptions and responsibilities of lecturers, which lay down requirements for academic work, research, academic and scientific qualification improvement and also for administrative work that the Senate has approved.
ViA has defined Remuneration Regulations that contain the division of academic work, conditions for research work. In addition, once per academic year (in October), the lecturer has to submit to the Dean of the faculty a report on his or her achievements in scientific work, experience gained in projects, seminars and conferences, if any (SAR, p.49).
ViA implements various activities, including student surveys (course assessment surveys) of each study course taught by the lecturer in the relevant semester of the academic year that are mandatory and study course observations (Meeting with academic staff, meeting with faculty management). It provides an opportunity for lecturers to improve and monitor the quality of their academic work.
Once per academic year ViA organizes a seminar for lecturers on the study quality assurance issues in which they discuss their experience/observations gained during the lectures in order to ensure the assessment of the performance quality of ViA academic staff.
The Director of the study field organizes an additional meeting if it is necessary to address quality improvement issues in more detail and/or to conduct in-depth research of problems (including document review) (SAR, p.49).
In accordance with the Cabinet Regulations of the Republic of Latvia "Regarding Education and Professional Qualifications Necessary for Teachers and Procedure for Improving the Professional Competence of Teachers", professional development can include international mobility in accordance with the goals of professional development, participation in projects, conferences and seminars. According to the SAR (p.10) the academic staff is given an opportunity to supplement and expand his/her knowledge and professionalism by gaining foreign experience or engaging in internship at foreign higher education institutions/organizations, as well as by participating in relevant seminars and conferences – within Erasmus, etc. mobility programmes in order to ensure improvement of skills, work quality and professional development. The attached annex 23P_Mobilitate_Mobility.xls approves that teaching staff have used the opportunity to participate in staff mobility programme. Totally there were 39 cases of Academic staff mobility during the review period 2014-2021.

2.4.3.

N/A

2.4.4.

According to annex 21P_ Publikācijas_Publications.xls and 20P-Docetaju_CV-Acad.Person._CV.zip, the scientific activity of academic staff corresponds partly to the recommendations set in the Law on Higher Education Institutions paragraph 3 of the first part in Article 55. Only 5 from 14 members of academic staff involved in the implementation of the professional bachelor VRST MA have published publications during the review period. 4 members of academic staff have participated in the projects during the review period. Only 2 members have participated in scientific conferences during the review period 2014-2021. Non other scientific activities such as review of scientific journal articles, doctoral thesis, being a member of the editorial board of scientific journal or organizing conferences/workshops were carried out.
According to the SAR (p.163) 46.7% or 7 members of the teaching staff are industry professionals with at least five years of practical experience. So their practical experience and continuous

development of competences in the real work environment can be adapted to the performance of research activities.

2.4.5.
According to SAR (p. 164) cooperation between teaching staff is facilitated by the inclusion of study courses in modules. The study programme consists of five modules.
+ Lecturers work together and promote the integration of the content and objectives of the courses with the aim to ensure the learning experience is logical and interconnected.
+ The integration between the modules is ensured by the implementation of the courses in a defined sequence and without crossing clear module boundaries.
+ The content of the study process is analyzed through discussions with students on the complementarity of existing study modules and content, and the findings are discussed with the lecturers of the respective modules.
+ Discussions with industry in the form of an Advisory Board provide additional insights for complementing and updating the content and sequencing of modules and courses.

According to the SAR (p. 165), Via carries out several activities within the study programme to foster cooperation between lecturers that was approved by management of the faculty and academic staff during the visit.
+ At the end of the calendar year, all IF faculty members involved in the study programmes have the opportunity to participate in a meeting of the Engineering Faculty Council, during which the programme directors report on current developments, student evaluations and challenges in programme implementation.
+ During the implementation of the study process, the programme director regularly contacts the faculty members involved in the programme in order to clarify the necessary improvements and inform about other current developments of the study programme.

Conclusions on this set of criteria, by indicating strengths and weaknesses

Conclusions:
The qualification of the teaching staff complies with the requirements for the implementation of the study programme and the requirements set forth in the Law of Higher Education Institutions and is appropriate for master study program implementation, allow to achieve the aims and ensure the learning outcomes of the VRST MA in both Latvian and English languages. But the scientific activity of teaching staff is low. So the proper mechanisms for the involvement of teaching staff in high-level scientific research is missing. ViA carries out several activities within the VRST MA to foster cooperation between lecturers. The cooperation between teaching staff is facilitated by the inclusion of study courses in modules. However, there may be a lack of proper division of responsibilities in cooperation, as not all study course descriptions include a clear and complete description.
Strengths
1. Academic staff involved in implementation have the necessary academic (higher) education and/or professional qualifications.
2. 46.7% of the teaching staff members are industry professionals – practicing specialists, industry experts that are able to include up-to-date content and latest achievements of the field in study courses.
3. Well-thought-out procedure for selection of teaching staff and evaluation of qualifications and competence.

Weaknesses:
1. Low scientific activity of teaching staff. The scientific activity of only 4 members of academic staff

corresponds to the recommendations set in the Law on Higher Education Institutions paragraph 3 of the first part in Article 55, except industry professionals whose professional development in real work environment can be adapted to research activities.
2. Insufficient mechanisms for the involvement of teaching staff in scientific research organizing research conferences and workshops, reviewing doctoral theses at national and foreign universities, being a member of the editorial boards of pre-reviewed international journals, reviewing research articles in research journals, etc..
3. Insufficient cooperation between teaching staff.

Assessment of the requirement [7]

1 R7 - Compliance of the qualification of the academic staff and visiting professors, visiting associate professors, visiting docents, visiting lecturers and visiting assistants with the conditions for the implementation of the study programme and the requirements set out in the respective regulatory enactments.

Assessment of compliance: Partially compliant

The scientific activity of teaching staff could be higher. The proper mechanisms for the involvement of teaching staff in high-level scientific research is necessary. Insufficient cooperation between teaching staff.

2.5. Assessment of the Compliance

Requirements

1 1 - The study programme complies with the State Academic Education Standard or the Professional Higher Education Standard

Assessment of compliance: Fully compliant

The attached annex (49P_VR atbilstiba valsts standartam_Compliance_LV_Eng-red-corr.docx) affirms that study program complies with the regulations of the Cabinet of Ministers of August 26, 2014 no. 512 “Noteikumi par otrā līmeņa profesionālās augstākās izglītības valsts standartu”. Experts invite the management to pay attention to the quality of the program description. The defined tasks of the study programme are the same for all ViA bachelor and master level study programmes.
The same course “Inovācijas un projektu vadība (2KP)” appears in two groups of Mandatory content according to standard requirements: research and management and innovation study courses; study courses that ensure the achievement of professional competence in business.

2 2 - The study programme complies with a valid professional standard or the requirements for the professional qualification (if there is no professional standard required for the relevant occupation) provided if the completion of the study programme leads to a professional qualification (if applicable)

Assessment of compliance: Not relevant

3 3 - The descriptions of the study courses and the study materials have been prepared in all languages in which the study programme is implemented, and they comply with the requirements set forth in Section 561 , Paragraph two and Section 562 , Paragraph two of the Law on Higher Education Institutions.

Assessment of compliance: Partially compliant

Attached study course descriptions (Annex 51P_VRVT_Kursa apraksti-Course Descriptions.zip) are prepared in Latvian and English languages and comply with the requirements set forth in

Section 561, Paragraph two and Section 562 , Paragraph two of the Law on Higher Education Institutions.

Not all descriptions of study courses include a clear definition of requirements for acquisition of credit points, for example, in the description of study course “Development of advanced 3D interactive environments”, the final grade determination is described - “Final grade consists of oral and practical exam task grades” instead of requirements what student must do to pass the course.

4 4 - The sample of the diploma to be issued for the acquisition of the study programme complies with the procedure according to which state recognised documents of higher education are issued.

Assessment of compliance: Fully compliant

The provided Diploma and its annexes samples (48P_VRVT_Diploma-paraugs_Diploma-example-red-corr.zipp) comply with the criteria set in the Minister Cabinet regulation No.202 “Kārtība, kādā izsniedz valsts atzītus augstāko izglītību apliecinošus dokumentus”. But faculty management should pay careful attention to the information mentioned in the Minister Cabinet regulation No.202 Clause 15. The provided Diploma and its annexes samples have been translated partly. The title of university and text “profesionālā maģistra diploms” and word “Sērija ...” on page 2 are not translated. If ViA decides to use the duplicating text in English, experts invite management of ViA to translate Diploma and its annexes’ samples completely.

5 5 - The academic staff of the academic study programme complies with the requirements set forth in Section 55, Paragraph one, Clause 3 of the Law on Higher Education Institutions.

Assessment of compliance: Not relevant

6 6 - Academic study programmes provided for less than 250 full-time students may be implemented and less than five professors and associated professors of the higher education institution may be involved in the implementation of the mandatory and limited elective part of these study programmes provided that the relevant opinion of the Council for Higher Education has been received in accordance with Section 55, Paragraph two of the Law on Higher Education Institutions.

Assessment of compliance: Not relevant

7 7 - At least five teaching staff members with a doctoral degree are among the academic staff of an academic doctoral study programme, at least three of which are experts approved by the Latvian Science Council in the respective field of science. At least five teaching staff members with a doctoral degree are among the academic staff of a professional doctoral study programme in arts (if applicable).

Assessment of compliance: Not relevant

8 8 - The teaching staff members involved in the implementation of the study programme are proficient in the official language in accordance with the regulations on the level of the official language knowledge and the procedures for testing official language proficiency for performing professional duties and office duties.

Assessment of compliance: Fully compliant

The attached annexes Apliecinajums-IF-valsts-valoda.edoc and 19P-Docetāju saraksts-List of lecturers-red.xlsx affirms that the knowledge of the official/national language of the academic staff involved in the implementation of the study program complies with the Regulations on the extent of knowledge of the national language and the procedure for testing the knowledge of the national language for performing professional and official duties.

9 9 - The teaching staff members to be involved in the implementation of the study programme have at least B2-level knowledge of a related foreign language, if the study programme or any part thereof is to be implemented in a foreign language (if applicable).

Assessment of compliance: Fully compliant

The attached annexes Apliecinajums-IF-anglu-valoda.edoc and 19P-Docetāju saraksts-List of lecturers-red.xlsx affirms that English knowledge level of all teaching staff members involved in the implementation of the study programme is C1.

10 10 - The sample of the study agreement complies with the mandatory provisions to be included in the study agreement.

Assessment of compliance: Fully compliant

The attached Template of Study agreement (0P-Studiju-ligums-t.sk.-2.8.p.-KOMPENSACIJA_Study-agreement-also-2.8.p.-COMPENSATION.docx) comply with the requirements set in the Minister Cabinet regulation No.70 “Studiju līgumā oblgāti ietveramie noteikumi”.

11 11 - The higher education institution / college has provided confirmation that students will be provided with opportunities to continue their education in another study programme or another higher education institution or college (agreement with another accredited higher education institution or college) if the implementation of the study programme is terminated.

Assessment of compliance: Fully compliant

The Agreements with Riga Technical university on students take over in case of cancellation of study programs (see Vienošanās_studentu_pārņemšanai_VRVT.edoc in FINAL_ligumi_agreements.zip) affirms that students are provided with opportunities to continue their education in Riga Technical university academic master study program "Digital humanities" (“Digitālas humanitārās zinātnes”) if the implementation of the study program is terminated.

12 12 - The higher education institution / college has provided confirmation that students are guaranteed compensation for losses if the study programme is not accredited or the study programme’s license is revoked due to the actions (actions or omissions) of the higher education institution or college and the student does not wish to continue studies in another study programme.

Assessment of compliance: Fully compliant

ViA guarantee a compensation for losses to the Student for the credit points not obtained (for which it is not possible to issue an academic statement, if the credits are not obtained due to a fault of ViA) by transferring tuition fee paid by the Student to his or her specified bank account within 1 (one) month if the study programme is not accredited or the study programme license is taken away due to ViA’s activity (or inactivity), and the Student does not want to continue studies in another study programme (Annex 0P-Studiju-ligums-t.sk.-2.8.p.-KOMPENSACIJA_Study-agreement-also-2.8.p.-COMPENSATION.docx)

13 13 - The joint study programmes comply with the requirements prescribed in Section 55.(1), Paragraphs one, two, and seven of the Law on Higher Education Institutions (if applicable)

Assessment of compliance: Not relevant

14 14 - Compliance with the requirements specified in other regulatory enactments that apply to the study programme being assessed (if applicable)

Assessment of compliance: Not relevant

Assessment of the requirement [8]

1 R8 - Compliance of the study programme with the requirements set forth in the Law on Higher Education Institutions and other regulatory enactments.

Assessment of compliance: Partially compliant

Not all study courses include a clear description of the requirements for acquisition of credit points.
The same course “Inovācijas un projektu vadība (2KP)” appears in two groups of Mandatory content according to standard requirements: research and management and innovation study courses; study courses that ensure the achievement of professional competence in business.

General conclusions about the study programme, indicating the most important strengths and weaknesses of the study programme

Conclusions:
The VRST MA is evidently and fully compliant with the study field. These are mostly about some AR/VR related courses. The VRST MA program’s content is topical, interconnected and complementary and allows for achievement of the study program’s objectives and learning outcomes. However, situation with study program VRST MA positioning and degree title should be clarified. Also, a larger variety of study methods would be useful for programme courses. It is evident from the meetings, that the management and the teaching staff are fully aware of the need for continuous development and improvement of these courses, according to the development of the actual technology. The study provision is sufficient for the implementation of the study programme. The qualification of the teaching staff complies with the requirements set in the Law on Higher Education Institutions and allows to achieve the aims, as well as ensure the learning outcomes of the study programme in both Latvian and English languages.
Strengths:
1. The VRST MA is evidently and fully compliant with the study field.
2. The sequence of courses, and their distribution among semesters is logical.
3. Student-centred educational approach is applied through the possibility for students to work on the topic of their individual final study work during the overall study process.
4. The study provision is sufficient for the implementation of the study programme. The laboratories provide needed equipment to gain practical knowledge.
5. Academic staff involved in implementation have the necessary academic (higher) education and/or professional qualifications that allow to achieve the aims and ensure the learning outcomes of the study program in both Latvian and English languages.

Weaknesses:
1. The admissions are low.
2. The VRST MA is very fragmented due to a large number of small (2 CP) courses, 9-10 courses per semester.
3. Very basic study methods are used in most study programme VRST MA courses.
4. Not all descriptions of study courses include a clear definition of requirements for the acquisition of credit points.
5. Insufficient mechanisms for the involvement of teaching staff in scientific research organizing research conferences and workshops, reviewing doctoral theses at national and foreign universities, being a member of the editorial boards of per-reviewed international journals, reviewing research articles in research journals, etc.

Evaluation of the study programme "Virtual reality and smart technologies"

Evaluation of the study programme:

Good

2.6. Recommendations for the Study Programme "Virtual reality and smart technologies"

Short-term recommendations

Revise course descriptions, clarifying the requirements for the acquisition of credit points.
Translate all the study course material in the Moodle into English language.
Improve the quality of the study programme description, i.e. description of study programme tasks for each study programme should be unique.
The FE management should pay careful attention to the information mentioned in the Minister Cabinet regulation No.202 Clause 15. Make changes in the Diploma sample, i.e. translate all the text in English in the translated version of the diploma.
Develop and Implement the formal mechanism for the promotion of mutual cooperation between academic staff.

Long-term recommendations

Improve the admission rates to not face rentability issues in the future.
Consider reducing the number of small (2 CP) courses per semester.
Consider a larger variety of study methods.
Develop and implement mechanisms for the involvement of teaching staff in scientific research organizing research conferences and workshops, reviewing doctoral theses at national and foreign universities, being a member of the editorial boards of pre-reviewed international journals, reviewing research articles in research journals, etc.
Ensure higher involvement of teaching staff in scientific activities, for example, increase the number of publications published by teaching staff, i.e. at least one publication during each 2-3 years.
Cooperation with the ICT industry is needed in order to create the professional standard for Virtual reality and smart technologies occupational areas, thus enabling the possibility to award a professional qualification upon successful graduation of the study programme’s Professional Master “Virtual reality and smart technologies” 47484.

II - "Socio-technical systems engineering" ASSESSMENT

II - "Socio-technical systems engineering" ASSESSMENT

2.1. Indicators Describing the Study Programme

Analysis

2.1.1.

The doctoral study programme Socio-technical Systems Engineering 51482 is evidently and fully compliant with the study field Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science, and it is well justified by the SAR (pp.126-127).
The goal of the doctoral study programme Socio-technical Systems Engineering is to promote the development of the electrical engineering, electronics, information and communication technology industry and to raise a new internationally competitive generation of scientists who are able to introduce the latest scientific findings of system engineering into the national economy, increasing the efficiency and reliability of the industry, as well as achieving production and service quality improvements. It is fully in line with the aims of the study field.
The main task of the doctoral study programme Socio-technical Systems Engineering is to prepare scientists in the field of engineering and technologies and to promote the application of students' theoretical knowledge, cognitive and research skills, as well as research results in the following environments:
modelling of business and tourism information systems;
systemic planning of regional development;
modelling of the political system and public administration;
modelling of logistics information systems and organisation of transport;
modelling of production processes;
design of e-learning systems;
improvement of imitation modelling technology.

Learning outcomes of the doctoral study programme Socio-technical Systems Engineering are as follows:
1. Knowledge of the latest information technologies;
2. Managing and improving research methodology and modern research methods in the field of information technology;
3. Ability to independently evaluate and select appropriate methods for engineering research;
4. To contribute to the development of information technologies and to give new understanding to existing knowledge, as well as its application in practice by developing original research solutions (doctoral thesis), part of which is included in internationally cited publications;
5. Ability to perform independent critical analysis, synthesis and evaluation, to solve important research and innovative tasks;
6. Ability to independently propose a research idea, to plan, structure and supervise scientific research projects, int. al., international projects;
7. To assume responsibility for ethical aspects of research activity;
8. Ability to communicate orally and in writing about the area of research within the field of information technology and the sub-field of system analysis, modelling and design with wider scientific circles and society in general;
9. Ability to independently develop and improve one's own scientific qualification.

By fully completing the doctoral study programme Socio-technical Systems Engineering, doctoral students will acquire the following soft skills: modern research methods, as well as skills to apply them in their research; skills to prepare scientific publications, compile scientific reports, creatively solve theoretical and practical engineering issues in the field of information technology; skills to present their research and results at scientific conferences and seminars; They will also submit a doctoral thesis which is written in accordance with high scientific and technical standards.
The particular doctoral study programme Socio-technical Systems Engineering is an interdisciplinary programme, as it focuses mainly on socio-technical systems engineering, namely, on a sub-field of information technology, respecting both technical and social aspects of the systems, in order to

develop new system analysis and design methods, as well as new means of system modelling, which can be relevant to the computer science industry. This is very relevant to the study field.

2.1.2.

The title of the doctoral study programme Socio-technical Systems Engineering, as it is reported in the SAR (p. 125) has recently been changed in a good manner to better emphasize the practice oriented approach, corresponds to the aim and actual content. In accordance with the Latvian Law the name of the awarded degree is changed from "Doctor of Science degree (Ph.D.) in electrical engineering, electronics, information and communication technologies" to "Doctor of Science (Ph.D.) in Engineering and Technology".
The doctoral study programme Socio-technical Systems Engineering is offered in a full-time studies format over a period of 3 years in Latvian and English in the amount of 120 Latvian study credit points with admission requirements of Master's degree in sociotechnical systems modelling or information technology or computer science or other natural or management sciences or equivalent higher education qualification with previous training in mathematical and/or simulation modelling and minimum English level of B2 for a programme form in English.
The educational classification code is 51482 which according to Latvian Education Classification (Latvian Cabinet of Ministers Regulations (Cab, Reg.) No. 322, https://likumi.lv/ta/id/291524-noteikumi-par-latvijas-izglitibas-klasifikaciju), corresponds to the following codification: meaning of the first two digits `51` notes that this study programme is doctoral programme (level 8 of Latvian and European Qualification Framework) and the last three digits `482` indicate that this programme is related to the educational group of “Use of computers” .
The duration and scope of the doctoral study programme Socio-technical Systems Engineering implementation (including different study programme implementation options), as well as the implementation language, are reasonable and well justified.

2.1.3.

Based on the recommendations of the previous accreditation, some improvements have been made in the doctoral study programme Socio-technical Systems Engineering, as it is described in detail in the SAR (p.125). Most importantly, the goal and learning outcomes of the doctoral study programme Socio-technical Systems Engineering have been better specified, and some additional courses have been incorporated into the educational content mostly in the IT field. These are all well in line with the recommendations.
The division of credit points between the mandatory courses and the specific courses of the scientific sub-field and elective courses has also been revised and changed, which is further in line with the recommendations.
The detailed changes are as follows:
Due to the accreditation process, in discussions with the colleagues of Vidzeme University of Applied Sciences Sociotechnical Systems Engineering Institute (SSII) and Rēzekne Academy of Technology, who are involved in the implementation of the study program, the name change of the study program was discussed. To expand opportunities and offer the program to graduates of business management, economics, and finance, and to cover a wider range of research directions, it is proposed to change the name of the study program from "Sociotechnical Systems Modelling" to "Sociotechnical Systems Engineering" (SSId). Experience shows that many sociotechnical system engineering specialists have experience in the IT industry (system analysis and design), but their previous degree is in management sciences or economics. The name change will also help to ensure better compliance of the study program with the research directions implemented in the Sociotechnical Systems Engineering Institute of the Vidzeme University of Applied Sciences. The

name change of the study program was also approved at the Council meeting of the Engineering Faculty on December 8, 2022. In the following text, the study program is called Sociotechnical Systems Engineering.
The division of credit points between the mandatory courses, specific courses of the scientific subfield and elective courses has been revised and changed. The division of credit points in the previous reporting period was as follows:
Specific courses of the scientific sub-field (A): 7 CP
Mandatory courses (A): 10 CP
Elective courses (B): 3 CP
Currently, there is the following division of the credit points:
Specific courses of the scientific sub-field (A): 8 CP
Mandatory courses (A): 8 CP
Elective courses (B): 4 CP
The total amount of theoretical study courses (20 CP) has not been changed.
In accordance with the recommendations of the previous accreditation, the goal and learning outcomes of the doctoral programme have been specified, as well as educational content has been supplemented with IT courses.
In accordance with the amendments to the Education Law and 27.09.2022. Regulations of the Cabinet of Ministers no. 595 Regulations on Latvian scientific branch groups, scientific branches and sub-branches - the name of the awarded degree is changed from "Doctor of Science degree (Ph.D.) in electrical engineering, electronics, information and communication technologies" to "Doctor of Science (Ph.D.) in Engineering and Technology".
The changes are well justified and fully in line with the overall aim of the doctoral study programme Socio-technical Systems Engineering.

2.1.4.

The rationale behind the implementation of the interdisciplinary doctoral study programme Socio-technical Systems Engineering is well justified in the SAR (pp. 127-128) by the recent challenges in Latvia and Europe, which are related to the limited set of interdisciplinary skills and cooperation opportunities of specialists and scientists, although this need is not fully supported by factual data and statistics. Having that said, the doctoral study programme Socio-technical Systems Engineering well reflects these needs.
Graduates of the doctoral study programme Socio-technical Systems Engineering have the opportunity to work not only as lecturers for the study field “Information Technologies” of Vidzeme University of Applied Sciences and/or as researchers for the Institute of Sociotechnical Systems Engineering, but also for any other higher education institution or institute that provides information technology studies and research, as well as for any higher education institution or training centre where a lecturer having knowledge and skills in the field of information technologies and modelling is needed. After completing doctoral studies, graduates have possibilities to write and participate in a postdoctoral grant, as well as write and conduct other research projects. Wide employment opportunities are available within the framework of Horizon 2020 and Europe projects, both at Vidzeme University of Applied Sciences and also in industry companies, where the science and research component is one of the priorities. Due to globalization tendencies and exchange of workforce and experience, new doctors have also ample opportunities to engage professionally in a post-doctoral research project abroad, and such offers are made to both current and future graduates.
Concerning the data provided in SAR p.128 and Annex 2, during the reporting period, the average number of students enrolled per year is 2, the average number of students in the programme is 6. According to the Annex 2 (2P-Studentu-statistika-2013-2022-AIKA-visi-StudentStatistics-corr.xlsx”)

during the time period 2013-2022 19 students admitted the study programme and 14 students were deducted, not completed. Consequently, the drop out rate is almost 74%. During this period (last 10 years) only 3 doctoral students graduated from the programme “Socio-technical Systems Engineering”.
During the reporting period, studies were conducted only in Latvian. These data are currently not suitable for evaluating the dynamics of the number of students and the relevance of the doctoral study programme Socio-technical Systems Engineering from an academic and economic point of view as well.
Looking at Via's development as a university of applied sciences in a future perspective experts would invite the management of ViA pay careful attention to the requirement stated in the Minister cabinet regulation Nr.655 “Par valsts augstskolu tipiem” and Clause 3(3), point 3 of the Law on Higher Education institutions. It requires that university ensures that doctoral theses are defended and science doctoral degrees are awarded every year in doctoral study programs.

2.1.5.

It is well justified in the SAR (pp. 128-129) what is the rationale behind this doctoral study programme Socio-technical Systems Engineering accredited as a joint programme with a cooperation between Vidzeme University of Applied Sciences Sociotechnical Systems Engineering Institute and Rēzekne Academy of Technology, Overall they have the necessary competences to successfully deliver the doctoral study programme Socio-technical Systems Engineering.
The doctoral study programme Socio-technical Systems Engineering has been developed in accordance with the Law on Higher Education Institutions of the Republic of Latvia, the Law on Scientific Activities, and the Cabinet Regulations of the Republic of Latvia. The doctoral study programme Socio-technical Systems Engineering is practically implemented together with Rēzekne Academy of Technologies. As part of the study process, the following is jointly organized: seminars for doctoral students and exchange of academic staff (within study courses), as well as joint work in the promotion council.
The cooperation model between the two partner universities is based on common lines of research and study. The academic staff is complementary, which ensures inter-institutional knowledge flows. The choice of a partner university is therefore based on a common and complementary base of faculty and other resources. Cooperation has so far been informal, with agreements on topical issues related to the programme of study, but with accreditation an inter-university joint programme council is being introduced. The Council's role is to monitor and coordinate the activities necessary for the successful implementation of the programme, including the approval of the study plan for each academic year, agreement on student and faculty exchanges, jointly organised doctoral seminars and other relevant issues. The work of the ViA and Rezekne Academy of Technologies in Electrical Engineering, Electronics, Information and Communication Technologies Promotion Board is organized jointly. Equal representation of each university in the composition of the Promotion Board has been established, taking into account and respecting all established rules concerning the necessary representation of experts in the composition of the Board.
Having that said, during the assessment visit experts identified some issues related to this study doctoral study programme Socio-technical Systems Engineering.
Notably, there is a lack of systemic cooperation within the joint doctoral study programme Socio-technical Systems Engineering, which would ensure continuous active involvement of doctoral students, mostly the study courses are divided between partners and meetings once a month are organized. During the meeting with doctoral students experts noticed that students do not participate in monthly seminars regularly and some of them reported on topic of thesis with varying regularity. One of the doctoral students has presented his efforts in a seminar only once in the last two years.

Although the management noted that summer schools for doctoral students are jointly organized once a year, including local and international guest lectures, as well as presentations by doctoral students on the topics of doctoral theses (SAR, p.137), during the meeting with the doctoral students, the experts did not gain confidence about the doctoral student participation in this event. Only one PhD student had appreciated his participation once in this event. During assessment visit interviews with students, experts noticed that students are not familiar with academic staff from Rezekne Academy of the Technology. Only one of them has communicated with one of the members from Rezekne Academy of Technology during the summer school event and got useful recommendations for further scientific research. The cooperation must be improved and upgraded to a systematic level. Further on, it is not clear from the SAR until which date the Promotion Council has been approved.

During interviews with academic staff and management it was mentioned that monthly meetings/seminars are organized with the purpose to monitor and control the students' progress. During the interviews with students experts identified that students report about their progress with different frequency, for example, one has reported once per year, another student has not reported during two years. Based on the above mentioned, it can be concluded that the doctoral study programme Socio-technical Systems Engineering lacks proactive management and universal procedure of checking progress of students.

According to BiA comments, "The doctoral program has had a new program director since April 3, 2023, a graduate Oskars Java, who has vivid memories of the program's strengths and weaknesses. As a proactive manager, already on April 25, at the meeting of the Council of the Doctoral Program, he proposed the initiative to hold two of the monthly seminars of doctoral students in person, which would take place in the ViA in the spring semester, and in the RTA in the fall semester. All doctoral students and (as far as possible) their scientific supervisors, program directors and invited researchers from both institutions would participate in these seminars. In these seminars, all PhD students and degree applicants are expected to give progress presentations, while PhDs provide feedback. The program also includes a visit to at least one laboratory, which can potentially be used for research by doctoral students, and a discussion about current research issues and mutual cooperation. This activity will be launched in 2023/2024. in the academic year". Experts evaluate what has been done during the reporting period, not further planned activities.

According to the Minister Cabinet Regulation Nr.1001 the council must include at least five scientists who have the right of an expert of the Latvian Science Council in the field of science, two of them in the sub-field of science in which the doctoral thesis is defended. The attached rector's order on the approval of the doctoral council "2022.04.26.-62-p-it-promocijas-padome-e_20220427091854.edoc" (No. 62-p, 26.04.2022) approves that the council include 7 scientists where 6 of them have the right of an expert of the Latvian Science Council in the field of science and in the sub-field of science in which the doctoral thesis is defended.

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:

The doctoral study programme Socio-technical Systems Engineering is evidently and fully compliant with the study field. The rationale behind the implementation of the interdisciplinary doctoral programme is well justified in the Report by the recent challenges in Latvia and Europe, which are related to the limited set of interdisciplinary skills and cooperation opportunities of specialists and scientists, although this need is not fully supported by factual data and statistics. During the reporting period, the average number of students enrolled per year is 2, the average number of students in the programme is 6. In total, 3 students have obtained the degree of Doctor of Science, successfully defending their doctoral theses. These data are currently not suitable for evaluating the

dynamics of the number of students and the relevance of the doctoral study programme Socio-technical Systems Engineering. It is well justified in the Report why this doctoral study programme Socio-technical Systems Engineering is accredited as a joint programme with a cooperation between Vidzeme University of Applied Sciences Sociotechnical Systems Engineering Instituteand Rēzekne Academy of Technology, However, the cooperation is currently based mostly on the distribution of course, instead of a deeper, systemic collaboration.

Strengths
1 The doctoral study programme Socio-technical Systems Engineering is highly interdisciplinary, reflecting the need for experts with interdisciplinary knowledge and skills.

Weaknesses
1 The number of graduates is very low.
2 There is a lack of cooperation within the joint doctoral study programme Socio-technical Systems Engineering, which would ensure continuous active involvement of doctoral students, mostly the study courses are divided and meetings once a month organized.
3 Doctoral study programme Socio-technical Systems Engineering lacks proactive management and universal procedure of checking progress of students.

2.2. The Content of Studies and Implementation Thereof

Analysis

2.2.1.

The duration of the coctor study programme Socio-technical systems engineering 51482 (doctor study programme) is 3 years in the form of full-time studies. The degree awarded is Doctor of Science (Ph.D.) in Engineering and Technology. The total amount of studies amounts to 120 CP, of which 20 CP are for theoretical classes (lectures, practical works, laboratory assignments and seminars), and 100 CP are for the writing of a doctoral thesis (doctor study programme SAR, Chapter 3.2).
Study work is carried out accordance to the individual study plan for each doctoral student. The structure of the doctor study programme is the following: Theoretical courses: 20 CP Scientific-academic work: 100 CP (SSMd SAR, Chapter 3.2). The Theoretical courses are split into the following groups: Specific courses of the scientific sub-field: 8 CP; Compulsory courses: 8 CP; Elective courses (corresponding to the environment of the problem): 4 CP. The following courses are included in the first two groups – Professional Foreign Language; Research Methodology and Modelling Data Processing I; Research Methodology and Modelling Data Processing II; Sociotechnical Systems Requirements Engineering; Sectoral Modelling (according to the research direction). One Elective course is chosen from Modelling of Business Information Systems, GIS Integrated Solutions and a Sectoral Modelling course (not selected before).
The topical coverage of the Theoretical course group covers the main strategic ViA research directions in the field, as presented in ViA SAR Chapter 2.4.
A 4CP course “Latvian language” is included for international students according to their individual study plan (Annex 43P of doctor study programme SAR). Civil Defense (1CP) and Environmental Protection (1CP) courses are included in the additional programme, if these have not been studied in lower level study programmes (Annex 43P- 43P_SSId_plans_English.xlsx of doctor study programme SAR). These requirements are in place to ensure compliance with Latvian state regulations.
The doctor study programme has clearly defined objectives and learning outcomes, and the course objectives and outcomes are interlinked with the study programme objectives and outcomes (Annex 45P - 45P_SSId_Kartēšana_Mapping_labots.xlsx of doctor study programme SAR).

The content of the courses is developed in line with the latest trends in the industry and the development trends in the field of Electrical Engineering, Electronics, Information and Communication Technologies, taking into account the research and academic experience of the professors of both universities, participating in the implementation of the doctor study programme (doctor study programme SAR, Chapter 3.2).

Analysis of compliance of the joint doctor study programme with the requirements of the Law of Higher Education Institutions was carried out (Annex 42P of doctor study programme SAR). The results of the analysis demonstrate that the doctor programme Socio-Technical Systems Engineering fully complies with the state regulations – both partners correspond to the doctoral level, a cooperation agreement between partners is signed, each partner implements not less than 25% of the programme, study programme is managed by a joint Study Council, both partners have unified requirements.

2.2.2.

The doctor study programme is aligned with ViA research directions: Virtual reality technologies and visualization; Sociotechnical systems modelling technologies and security; E-study management and technologies; Smart technologies and eco-buildings in the national economy. Research topics are formulated so that it would be possible to provide new scientific findings in the field.
The promotion council of the doctor study programme evaluates whether research has been conducted independently and whether it provides new scientific findings in the field of engineering and technologies, as well as whether research results published/accepted for publication in scientific publications that are anonymously reviewed published in high-level international journals (doctor study programme SAR, Chapter 3.2).
This ensures that the awarding of the Doctoral degree is based on the achievements and findings of the field of science.

2.2.3.

(In 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, analyze in detail the methods used for the implementation of such a study programme).
Doctoral students of the doctor study programme conduct research, which is carried out in accordance with an individual plan of scientific research activities of each doctoral student in accordance with the problem environment (doctor study programme SAR, Chapter 3.2). The individual plan is approved by the thesis supervisor, the doctoral student and the Director of the doctor study programme. The scientific supervisor and the Director of the doctor study programme control the execution of the individual plan.
Study methods, used in theoretical courses, include: lectures, practical works, laboratory demonstrations and seminars (Annex 44P of SSMd SAR). Theoretical classes can be conducted face-to-face classes, as well as remotely, using electronic means of communication.
The principles of student-centered education are taken into account when implementing the doctor study programme. Teachers of the doctor study programme take into account the diversity of students' needs in the study process by choosing learning methods that suit them. Innovative pedagogical methods and an individual approach is used (doctor study programme SAR, Chapter 3.2; input from the expert meeting with students).
As doctor study programme is a joint study programme, its content and the study plan have been developed by both partner universities, forming a unified study programme and determining

responsibility of each partner for every study course (Annex 42P of doctor study programme SAR). At least one representative of the other partner institution's academic staff teaches at each partner institution, and doctoral students are able to choose a supervisor from any of partner universities. Teaching is done both in face-to-face, and in online mode. Students of the joint programme have opportunities for mobility in jointly organized doctoral seminars and summer/winter schools. The study quality process is monitored by the study program council, and guided by the study quality systems of both universities.

2.2.4.
N/A

2.2.5.

ViA has been awarded the right to award the doctoral degree in “Electrical engineering, electronics, information and communication technologies” by the Cabinet of Ministers of the Republic of Latvia since 2005.
The procedure of defending the doctoral thesis and awarding the doctoral degree is clearly defined. The doctoral student, who has completed the academic part of the doctor study programme, must independently write and publicly defend doctor thesis, containing results of original scientific research, providing new findings in the relevant research direction. The Promotion Council of Sociotechnical Systems Modelling (SSM) takes care of the final stage of the process.
The Promotion Council evaluates the thesis in accordance with the procedure established in the Regulations of the Promotion Council and Cabinet Regulations No. 1001 “Procedure and Criteria for Awarding (promotion) of Doctoral Degree”. Upon successful defense of the thesis, the Ph.D. candidate receives a Doctor of Science (Ph.D) degree in engineering and technology (SSMd SAR, Chapter 3.2).
2.2.6. The topics of students' final theses are relevant to the field and correspond to the study programme.
Three doctoral theses were defended before joint Promotion Council of RTA and ViA during the review period (1 in 2019, and 2 in 2022) (ViA SAR, Appendix 2). The topics of these doctoral thesis are fully relevant to the field, and correspond to research directions formulated in ViA strategy (doctor study programme SAR, Chapter 3.2).

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
The content of the doctor study programme has clear and logical structure, corresponds to the objectives of the programme and ensures the achievement of learning outcomes. It is based on student-centered education, study work is carried out in accordance to the individual study plan for each doctoral student.
Strengths:
1. Student-centered approach - individual plans for course content and thesis preparation, individual study method selection.
2. The procedure of defending the doctoral thesis and awarding the doctoral degree is clearly defined.

Weaknesses:
none

Assessment of the requirement [5] (applicable only to master's or doctoral study

programmes)

1 R5 - The study programme for obtaining a master's or doctoral degree is based on the achievements and findings of the respective field of science or field of artistic creation.

Assessment of compliance: Fully compliant

The content of the doctor study programme is clear and logical, The content of the courses is developed in line with the latest trends in the industry and the scientific field, joint partner activities are in place for implementing the joint doctor study programme.

2.3. Resources and Provision of the Study Programme

Analysis

2.3.1.

Information about the resources and material and technical provision of the doctor study programme, including the teaching staff, generally is common to all programmes and it is presented in this report: Resources and provision of the study field.
According to the nature of the joint programme, resources and provision of two higher education institutions are combined to implement the programme, including scientific capacity of the staff, as well as scientific and technical base. On ViA side, the study process is implemented at both buildings located in Valmiera. There are 38 classrooms, including 3 computer classrooms for practical classes with a total of 90 workplaces. For the implementation of the study process, 5 laboratories are used: Electronics and Electrical Engineering Laboratory's equipment provides for a possibility to perform various measurements of direct and alternating current, as well as to perform experiments with various direct and alternating current circuits; Computer Network Laboratory – laboratory equipment provides for a possibility to assemble and disassemble computers; Virtual and Augmented Reality Laboratory – laboratory equipment provides for a possibility to create various virtual and augmented reality projects; Mechatronics Laboratory's equipment is used to understand the fundamentals of Electric Machinery, Electric Drive, Electropneumatics etc.; Mobile Technology Laboratory equipment provides a possibility to create mobile apps for Android, iOS and Windows environments. Laboratories are available to students for classes, individual and group work and research purposes. (SAR p.40-41)
The informative provision is provided by Valmiera Integrated Library, where books and archives of the best scientific papers are available. E-resources can be accessed from anywhere with individual login information. In 2022, there were purchased 4 titles of 4 copies in the IT field. Funding for Vidzeme University of Applied Sciences library collection is not divided by the study fields because during the study process the library resources are often used by students of several study fields. (SAR p.44)
Control and sustainability of the use of financial resources are laid down in the procedure for development, approval, execution and control of the budget of Vidzeme University of Applied Sciences (approved on 26 October 2011 at the ViA Senate meeting, decision No. 10/7.1)
ViA provides all necessary resources and complies with specific features and the conditions for the implementation of the doctor study programme.

2.3.2.
The CAD/ CAE/ CAM laboratory, Physics laboratory, Electronics laboratory, Chemistry laboratory, Ecology laboratory, Mechatronics laboratory, Hydraulics laboratory of Rezekne Academy of Technologies (RAT) are also available for the PhD students of Vidzeme University of Applied Sciences (SAR p. 137)

During the assessment visit, students mentioned that not much cooperation is felt from the other university. Only the study courses are divided and that is the main communication with the other university. Research is mostly done at ViA. According to ViA comments, "One of the goals of the face-to-face doctoral seminars, mentioned in the previous point, is to bring together the doctoral students of ViA and RTA with researchers and teaching staff of both universities to discuss and build deeper collaborations." The justification points out the goal, which is bringing together students, however during the meeting with the students of the study program, it was pointed out that there are still barriers between the both universities and the cooperation is not always felt from the students point of view.
It was mentioned by the study director that laboratories are available to students at RAT, however none of the students have used it.
A good practice between ViA and RAT is the meetings together, where students from both universities of the programme, join to present their update of their thesis.

2.3.3.

Funding of the doctor study programme consists of state funded budget places and income from studies paid by the students. Expenses are calculated per each student. Full time student expenses are planned accordingly: direct expenses 62.4% (salaries 57.2%, administrative salaries 3.1%, research activities compensation 0.7%, other administrative expenses 1.4%) and indirect expenses 37.6% (salaries 26%. other administrative expenses 7.9%, loan repayment 1.5%, capital expenses 0.9%, building management 1.3%). (Annex 15) The expenses are planned in a transparent and open manner.
In the next admissions (2023), there are 4 budget places for full time studies. The study fee is 8800 EUR for full time studies.
As per Annex 2 the number of students in the programme in study year 2022 /2023 is 10. From this number, 9 students are enrolled in state funded budget places and all students are full time. Their admissions numbers are not very high and not all budget places are filled, however there are admissions every year: in 2022 1 students were enrolled, in 2021 -5, in 2020 - 2. More should be done to increase the admissions number not to see this as a threat in the future.
The doctor study programme has the minimum number of students to ensure the profitability of the study programme and facilitates the development of the study programme. This is to conclude that ViA has funding available to the study programme, funding sources and the use of funding ensures full implementation of the study process.

Conclusions on this set of criteria, by specifying strengths and weaknesses

Conclusions:
The study provision is sufficient for the implementation of the doctor study programme. Studies are held at both universities. ViA provides the 5 laboratories that offer the needed equipment for study process and research activities. The methodological and informative resources are accessible to students and sufficient.
The cooperation between both universities is not very strong and the students don’t feel the benefit from it. RAT research provision is available, however not really used by ViA students.
The expenses are planned per each student in a transparent manner. The finances are balanced. The doctor study programme is rentable and the number of students exceeds the minimal numbers.
Strengths:
1 There are 5 laboratories where each provides the needed equipment to gain practical knowledge.
2 The students and graduates are satisfied with the available material technical basis.

Weaknesses:
1 The cooperation between both universities is not very strong and the students don’t feel the benefit from it.

Assessment of the requirement [6]

1 R6 - Compliance of the study provision, science provision (if applicable), informative provision (including library), material and technical provision and financial provision with the conditions for the implementation of the study programme and ensuring the achievement of learning outcomes

Assessment of compliance: Fully compliant

The resources are sufficient for the implementation of the doctor study programme. The finances are balanced. One weakness was identified, however it doesn’t pose a threat to the implementation of the doctor study programme, however more a place for improvement.

2.4. Teaching Staff

Analysis

2.4.1.

The SAR (p.138-145), attached Annexes 19P-Docetāju saraksts-List of lecturers-red, Apliecinajums-IF-valsts-valoda.edoc, Apliecinajums-IF-anglu-valoda.edoc and 20P-Docetaju_CV-Acad.Person._CV affirm that the qualification of the teaching staff complies with the requirements set forth in the Law of Higher Education Institutions and is appropriate for doctor study programme implementation, allow to achieve the aims and ensure the learning outcomes of the doctor study programme in both Latvian and English languages. Academic staff involved in implementation have the necessary academic (higher) education and scientific experience.
According to the SAR (p. 138) 14 faculty members are involved in the implementation of doctor study programme - 2 elected professors, 3 elected associated professors and 1 elected assistant professor, 3 assistant guest professors, 1 associate guest professors, 2 guest professor. 13 members have a doctor's degree, 1 member has a master's degree (Annex 19P-Docetāju saraksts-List of lecturers-red.xlsx).
In accordance with Clause 55, Paragraph 1, Clause 3 of the Law on Higher Education Institutions - not less than five professors and associate professors altogether who are elected to academic positions in the relevant higher education institution take part in the implementation of the compulsory part and the limited elective part of academic study programmes. The attached annex “Apliecinajums-Par SSMd akademiska personala sastavu_v2.edoc” and information provided in SAR (p.140) confirms that the composition of academic staff of doctor study programme meets the requirements specified in Clause Three of Paragraph One of Section 55 of the Law of Higher Education Institutions, while there are 5 elected professors and associated professors. Of which four are experts approved by the Latvian Council of Science in the relevant field of science in which the programme awards a scientific degree (SAR, p.140). It confirms 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.
The attached annexes Apliecinajums-IF-valsts-valoda.edoc and 19P-Docetāju saraksts-List of lecturers-red.xlsx affirms that all members of the teaching staff have knowledge of the official/national language complies with the Regulations on the extent of knowledge of the national language. All members of teaching staff that are involved in the implementation of doctor study programme have English knowledge level at least C1 and higher (Annex 19P-Docetāju saraksts-List

of lecturers-red.xlsx).
In addition, ViA has involved 1 visiting assistant professor from the Czech Republic to teach one study course " GIS integrated solutions" (4 credit points) and to facilitate the acquisition of international experience, share of foreign academic and professional experience in a broader perspective of the field (Annex 19P-Docetāju saraksts-List of lecturers-red). It refers to Article 56, Paragraph 3 of the Law on Higher Education Institutions. The Law states: "the study programs must be implemented in the national language in universities. In a study program that is implemented in the national language, no more than one-fifth of the credit points of the study program may be implemented in other official languages of the European Union, taking into account that this part cannot include final and state exams, as well as the development of qualifications, bachelor's and master's theses". ViA fulfills the Article 56, Paragraph 3 requirements of the law.

2.4.2.

During the reporting period, new lecturers have been attracted, further strengthening the competence of the teaching staff in this field. Since the previous accreditation, the overall scientific and academic qualifications of the two partner universities in the field have increased allowing it to involve much more local teaching staff. Some of the lecturers have increased their competence by obtaining a doctoral degree or have been promoted from associate professor to professor (SAR, p.139).
According to the SAR (p.10) ViA has set a number of measures to ensure suitability of lecturers for working with students and verify qualifications and competence of lecturers to provide high-quality education.
ViA has defined requirements and prerequisites for involvement of academic staff in the implementation of study programmes (SAR, p.50) that are laid down in ViA Regulations on Elections to Academic Positions.
ViA has defined job descriptions and responsibilities of lecturers, which lay down requirements for academic work, research, academic and scientific qualification improvement and also for administrative work that the Senate has approved.
ViA has defined Remuneration Regulations that contain the division of academic work, conditions for research work. In addition, once per academic year (in October), the lecturer has to submit to the Dean of the faculty a report on his or her achievements in scientific work, experience gained in projects, seminars and conferences, if any (SAR, p.49).
ViA implements various activities, including student surveys (course assessment surveys) of each study course taught by the lecturer in the relevant semester of the academic year that are mandatory and study course observations (Meeting with academic staff, meeting with faculty management). It provides an opportunity for lecturers to improve and monitor the quality of their academic work.
Once per academic year ViA organizes a seminar for lecturers on the study quality assurance issues in which they discuss their experience/observations gained during the lectures in order to ensure the assessment of the performance quality of ViA academic staff.
The Director of the study field organizes an additional meeting if it is necessary to address quality improvement issues in more detail and/or to conduct in-depth research of problems (including document review) (SAR, p.49).
The requirements for academic staff comply with the Law of Higher Education Institutions, the Law of Scientific Activity and other regulatory enactments.

In accordance with the Cabinet Regulations of the Republic of Latvia "Regarding Education and Professional Qualifications Necessary for Teachers and Procedure for Improving the Professional Competence of Teachers", professional development can include international mobility in

accordance with the goals of professional development, participation in projects, conferences and seminars. According to the SAR (p.10) the academic staff is given an opportunity to supplement and expand his/her knowledge and professionalism by gaining foreign experience or engaging in internship at foreign higher education institutions/organizations, as well as by participating in relevant seminars and conferences – within Erasmus, etc. mobility programmes in order to ensure improvement of skills, work quality and professional development. The attached annex 23P_Mobilitate_Mobility.xls approves that teaching staff have used the opportunity to participate in staff mobility programme. Totally there were 39 cases of Academic staff mobility during the review period 2014-2021.

2.4.3.

According to the SAR (p.141-144) and Annex PAPILDUS_PIEL_Publikācijas_Doktorantura_SSMd_LV_ENG.docx and CV (Annex 20P-Docetaju_CV-Acad.Person._CV.zip) 12 members of teaching staff have published in pier-reviewed editions and 8 out of them have participated in scientific projects as project managers or prime contractors/ Sub-project manager/ team leader/ leading researchers/researchers that contribute to the implementation of a high-quality doctor study programme.
The research topics are related to the Technology-Based Communication, use of AI and ML for Improving Employee Motivation and Satisfaction, as well as for attrition estimation, Adults digital competences and online learning, Massive Virtual World Generation and Simulation, Augmented Reality Environments, Augmented Reality, Virtual Reality, and Computer Graphics, Cybersecurity education, Multi-perspective Modelling, Remote Sensing and Image Recognition Technologies etc..
The minimum requirements for the activity in science are defined In the Minister Cabinet Regulation No 129 "Profesora vai asociētā profesora amata pretendenta un amatā esoša profesora vai asociētā profesora zinātniskās un pedagoģiskās kvalifikācijas vai mākslinieciskās jaunrades darba rezultātu novērtēšanas kārtība" for the applicant for the position of associate professor or professor or for existing ones. Accordingly, the elected professor and associate professor (applicant or incumbent) in the field of natural sciences (mathematics, physics and chemistry) and engineering sciences (electrical engineering, electronics; information and communication technologies) must have at least 5 (for professor) or 4 (for associated professor) anonymously peer-reviewed scientific publications, in a scientific journal or conference report edition, which indexed in the database SCOPUS or Web of Science Core Collection and h-index 3 or 2 accordingly. The elected professors and asociated professors of ViA fulfill these requirements. There are three researchers with h-index in the Scopus as 6, two have as 5, one has as 4 and one associate professor as 2. The visiting professors have higher h-index as 9 and 16.

2.4.4.

All members of teaching staff have published in peer-reviewed editions, including international editions in the last six years (Annexe PAPILDUS_PIEL_Publikācijas_Doktorantura_SSMd_LV_ENG.docx , Annex 20P-Docetaju_CV-Acad.Person._CV.zip).
There is one teaching staff that has published only one publication at the beginning of the report period in 2014.

2.4.5.

A mechanism for mutual cooperation of the teaching staff in the implementation of the doctor study programme has been established.
+ The teaching staff cooperates in the implementation of courses and supervision of doctoral

theses, and also within the framework of monthly seminars for doctoral students.
+ Once a month, but no less than once a semester, joint seminars for doctoral students are held, within the framework of which the teaching staff of Vidzeme University of Applied Sciences and Rēzekne Academy of Technologies, and also various visiting lecturers give presentations on various types of topics within the field which are topical for doctoral students.
+ Programme council which monitors and coordinates activities necessary for the successful implementation of the programme. The council consists of 6 people, 3 of whom will be appointed by RAT, and 3 will be appointed by ViA in accordance with the procedures specified in the regulatory documents of each higher education institution.
+ The interconnection of courses of study is monitored and managed by the Programme Director and the Programme Board. The Board of the Study Programme is composed of professors, associate professors or researchers involved in the field of study.
+ The meetings of the programme council, the faculty council and the general meetings of the faculty promote cooperation between teaching staff in the context of the programme, the programme and the faculty.
+ At the end of the calendar year, all faculty members involved in study programmes have the opportunity to participate in a Faculty Council meeting or a general meeting, during which programme directors report on current developments, student evaluations and challenges in programme implementation

As some of the horizontal directions of action for the implementation of strategic priorities, ViA has noted the human resources and strategy implementation control (external and internal monitoring) mechanism, Collecting information about the scientific activities of teaching staff, such as organizing research conferences and workshops, being a member of the editorial boards of pre-reviewed international journals, reviewing research articles in research journals, reviewing doctoral theses at national and foreign universities etc.., would allow not only monitoring scientific activities to be carried out, but also to develop/improve the motivation system of teaching staff, which would be based on a complete information base on the research and scientific activities performed by each employee. There is insufficient mechanism for recording/collecting information about the teaching staff activities, which is necessary for determining the support and motivation system of teaching staff.

Conclusions on this set of criteria, by indicating strengths and weaknesses

Conclusions:
The qualification of the teaching staff complies with the requirements for the implementation of the doctor study programme and the requirements set forth in the Law of Higher Education Institutions. The qualification of the teaching staff is appropriate to achieve the aims and ensure the learning outcomes of the doctor study programme in both Latvian and English languages. There is insufficient mechanism for recording/collecting information about the teaching staff activities, which is necessary for determining the support and motivation system of teaching staff.

Strengths
1. Academic staff involved in implementation have the necessary academic (higher) education and scientific experience that ensures the inclusion of new findings, knowledge and gained research experience in study courses to improve their content.
2. Well-thought-out procedure for selection of teaching staff and evaluation of qualifications and competence.

Weaknesses:

1. There is one teaching staff that has published only one publication at the beginning of the report period in 2014.
2. There is insufficient mechanism for recording/collecting information about the teaching staff activities, which is necessary for determining the support and motivation system of teaching staff.

Assessment of the requirement [7]

1 R7 - Compliance of the qualification of the academic staff and visiting professors, visiting associate professors, visiting docents, visiting lecturers and visiting assistants with the conditions for the implementation of the study programme and the requirements set out in the respective regulatory enactments.

Assessment of compliance: Partially compliant

The composition of the academic staff of the doctor study programme meets the requirements specified in the Law of Higher Education Institutions, except for one member that has not made any scientific activity during the last six years.

2.5. Assessment of the Compliance

Requirements

1 1 - The study programme complies with the State Academic Education Standard or the Professional Higher Education Standard

Assessment of compliance: Not relevant

2 2 - The study programme complies with a valid professional standard or the requirements for the professional qualification (if there is no professional standard required for the relevant occupation) provided if the completion of the study programme leads to a professional qualification (if applicable)

Assessment of compliance: Not relevant

3 3 - The descriptions of the study courses and the study materials have been prepared in all languages in which the study programme is implemented, and they comply with the requirements set forth in Section 561 , Paragraph two and Section 562 , Paragraph two of the Law on Higher Education Institutions.

Assessment of compliance: Fully compliant

Attached study course descriptions (Annex 44P-SSId_Kursu apraksti-Course Descriptions.zip) are prepared in Latvian and English languages and comply with the requirements set forth in Section 561, Paragraph two and Section 562 , Paragraph two of the Law on Higher Education Institutions.

4 4 - The sample of the diploma to be issued for the acquisition of the study programme complies with the procedure according to which state recognised documents of higher education are issued.

Assessment of compliance: Partially compliant

The provided Diploma and its annexes samples (41P_SSId_Diploma_paraugs_Diploma_example-red-corr.docx) comply partly with the criteria set in the Minister Cabinet regulation No.202 “Kārtība, kādā izsniedz valsts atzītus augstāko izglītību apliecinošus dokumentus”. There is a wrong number of series in the diploma sample. Faculty management should pay careful attention to the information mentioned and the example given in Annex 3 of the Minister Cabinet regulation No.202. According to the sample given in Annex 6 of the regulations, for

doctoral diplomas, the series is denoted by KD on page 2 of the Diploma.

5 5 - The academic staff of the academic study programme complies with the requirements set forth in Section 55, Paragraph one, Clause 3 of the Law on Higher Education Institutions.

Assessment of compliance: Not relevant

6 6 - Academic study programmes provided for less than 250 full-time students may be implemented and less than five professors and associated professors of the higher education institution may be involved in the implementation of the mandatory and limited elective part of these study programmes provided that the relevant opinion of the Council for Higher Education has been received in accordance with Section 55, Paragraph two of the Law on Higher Education Institutions.

Assessment of compliance: Not relevant

7 7 - At least five teaching staff members with a doctoral degree are among the academic staff of an academic doctoral study programme, at least three of which are experts approved by the Latvian Science Council in the respective field of science. At least five teaching staff members with a doctoral degree are among the academic staff of a professional doctoral study programme in arts (if applicable).

Assessment of compliance: Fully compliant

Information provided in SAR (p.140-141), attached Affirmation (Apliecinajums-Par SSMd akademiska personala sastavu_v2.edoc) and list of publications (46P_PAPILDUS_PIEL_Publikācijas_Doktorantura_SSId_LV_ENG.docx) affirms that ViA has 8 elected members and 4 unelected members with doctoral degree among the academic staff of the doctoral study programme and 4 elected members are experts approved by the Latvian Science Council in the " Engineering and Technology - Electrical Engineering, Electronics, Information and Communication Engineering" field of science. Information on the rights of experts was checked in the National Scientific Activity Information System

8 8 - The teaching staff members involved in the implementation of the study programme are proficient in the official language in accordance with the regulations on the level of the official language knowledge and the procedures for testing official language proficiency for performing professional duties and office duties.

Assessment of compliance: Fully compliant

The attached annexes Apliecinajums-IF-valsts-valoda.edoc and 19P-Docetāju saraksts-List of lecturers-red.xlsx affirms that the knowledge of the official/national language of the academic staff involved in the implementation of the study program complies with the Regulations on the extent of knowledge of the national language and the procedure for testing the knowledge of the national language for performing professional and official duties.

9 9 - The teaching staff members to be involved in the implementation of the study programme have at least B2-level knowledge of a related foreign language, if the study programme or any part thereof is to be implemented in a foreign language (if applicable).

Assessment of compliance: Fully compliant

The attached annexes Apliecinajums-IF-anglu-valoda.edoc and 19P-Docetāju saraksts-List of lecturers-red.xlsx affirms that English knowledge level of the teaching staff involved in the implementation of the study programme is C1 and higher.

10 10 - The sample of the study agreement complies with the mandatory provisions to be included in the study agreement.

Assessment of compliance: Fully compliant

The attached Template of Study agreement (0P-Studiju-ligums-t.sk.-2.8.p.-KOMPENSACIJA_Study-agreement-also-2.8.p.-COMPENSATION.docx) comply with the requirements set in the Minister Cabinet regulation No.70 “Studiju līgumā oblgāti ietveramie noteikumi”.

11 11 - The higher education institution / college has provided confirmation that students will be provided with opportunities to continue their education in another study programme or another higher education institution or college (agreement with another accredited higher education institution or college) if the implementation of the study programme is terminated.

Assessment of compliance: Fully compliant

The Agreements with Riga Technical university on students take over in case of cancellation of doctor study programme (see Vienošanās_studentu_pārņemšanai RTA_RTU_VIA SSM.edoc in FINAL_ligumi_agreements.zip) affirms that doctoral students are provided with opportunities to continue their education in Riga Technical university in the doctoral study program "Computer Science and Information Technology" (Datorzinātne un informācijas tehnoloģija) if the implementation of the study program is terminated.

12 12 - The higher education institution / college has provided confirmation that students are guaranteed compensation for losses if the study programme is not accredited or the study programme’s license is revoked due to the actions (actions or omissions) of the higher education institution or college and the student does not wish to continue studies in another study programme.

Assessment of compliance: Fully compliant

ViA guarantee a compensation for losses to the Student for the credit points not obtained (for which it is not possible to issue an academic statement, if the credits are not obtained due to a fault of ViA) by transferring tuition fee paid by the Student to his or her specified bank account within 1 (one) month if the study programme is not accredited or the study programme license is taken away due to ViA’s activity (or inactivity), and the Student does not want to continue studies in another study programme (Annex 0P-Studiju-ligums-t.sk.-2.8.p.-KOMPENSACIJA_Study-agreement-also-2.8.p.-COMPENSATION.docx)

13 13 - The joint study programmes comply with the requirements prescribed in Section 55.(1), Paragraphs one, two, and seven of the Law on Higher Education Institutions (if applicable)

Assessment of compliance: Fully compliant

The joint study programmes comply with the requirements prescribed in Section 55.(1), Paragraphs one, while the partner institution - Rezeknes Academy of Technologies is an accredited university in Latvia.
The joint study programme complies with the requirements prescribed in Section 55.(1), Paragraphs two and seven. The attached sample of the diploma (41P_SSId_Diploma_paraugs_Diploma_example-red-corr.docx) affirms that its content is determined. As a result of learning the joint study programme, in accordance with the agreement referred to in the first part of Article 55.(1), ViA issues a joint diploma for the obtained higher education.
Looking at Via's development as a university of applied sciences in a future perspective experts invite the management of ViA pay careful attention to the requirement stated in the Minister cabinet regulation Nr.655 “Par valsts augstskolu tipiem” and Clause 3(3), point 3 of the Law on Higher Education institutions.

14 14 - Compliance with the requirements specified in other regulatory enactments that apply to the study programme being assessed (if applicable)

Assessment of compliance: Not relevant

Assessment of the requirement [8]

1 R8 - Compliance of the study programme with the requirements set forth in the Law on Higher Education Institutions and other regulatory enactments.

Assessment of compliance: Partially compliant

The Diploma sample has inconsistency with the Minister Cabinet regulation No.202.
There is a lack of cooperation within the joint doctoral study programme Socio-technical Systems Engineering, only the study courses are divided and meetings once a month organized.
Doctoral study programme Socio-technical Systems Engineering lacks proactive management and universal procedure of checking progress of students.
Looking at Via's development as a university of applied sciences in a future perspective experts invite the management of ViA pay careful attention to the requirement stated in the Minister cabinet regulation Nr.655 “Par valsts augstskolu tipiem” and Clause 3(3), point 3 of the Law on Higher Education institutions.

General conclusions about the study programme, indicating the most important strengths and weaknesses of the study programme

Conclusions:
The doctor study programme is evidently and fully compliant with the study field. The content of the doctor study programme has clear and logical structure, corresponds to the objectives of the programme and ensures the achievement of learning outcomes. It is based on student-centered education. The rationale behind the implementation of the interdisciplinary doctoral programme is well justified in the Report by the recent challenges in Latvia and Europe, which are related to the limited set of interdisciplinary skills and cooperation opportunities of specialists and scientists, although this need is not fully supported by factual data and statistics.
The study provision is sufficient for the implementation of the study programme. The cooperation between both universities is not very strong and the students don’t feel the benefit from it. RAT research provision is available, however not really used by ViA students.
The qualification of the teaching staff complies with the requirements for the implementation of the doctor study programme and the requirements set forth in the Law of Higher Education Institution., as well as is appropriate to achieve the aims and ensure the learning outcomes of the doctor study programme in both Latvian and English languages. However, scientific activity of the teaching staff is limited to writing publications and participating in projects. There are insufficient mechanisms for the involvement of teaching staff in scientific research.
Looking at Via's development as a university of applied sciences in a future perspective experts invite the management of ViA pay careful attention to the requirement stated in the Minister cabinet regulation Nr.655 “Par valsts augstskolu tipiem” and Clause 3(3), point 3 of the Law on Higher Education institutions.

Strengths:
1. The doctor study programme is highly interdisciplinary, reflecting the need for experts with interdisciplinary knowledge and skills.
2. Student-centered approach - individual plans for course content and thesis preparation, individual study method selection.
3. The procedure of defending the doctoral thesis and awarding the doctoral degree is clearly defined.
4. The study provision is sufficient for the implementation of the study programme. The students

and graduates are satisfied with the available material technical basis.
5. Academic staff involved in implementation have the necessary academic (higher) education and scientific experience that ensures the inclusion of new findings, knowledge and gained research experience in study courses to improve their content.

Weaknesses:
1. The number of students is very low.
2. There is a lack of cooperation within the joint doctor study programme, only the study courses are divided and meetings once a month organized.
3. Doctor study programme lacks proactive management and universal procedure of checking progress of students.
4. The students don’t feel the benefit from cooperation between ViA and RAT partnership.
5. There is a teaching staff that has published only one publication at the beginning of the reporting period in 2014 and has not published publications/articles in peer-reviewed editions during last 6 years.

Evaluation of the study programme "Socio-technical systems engineering"

Evaluation of the study programme:

Average

2.6. Recommendations for the Study Programme "Socio-technical systems engineering"

Short-term recommendations

Consider implementing a consistent plan for the reduction of the student drop-out rate.
The FE management should pay careful attention to the information mentioned and the example given in Annex 3 of the Minister Cabinet regulation No.202. Make changes in the Diploma sample, i.e. include correct number of series in the diploma sample. According to the sample given in Annex 6 of the regulations, for doctoral diplomas, the series is denoted by KD on page 2 of the Diploma.

Long-term recommendations

Develop and implement procedures that would strengthen cooperation between partner universities within the joint programme, for example, organize common events in a regular manner activly involving there doctoral students.
To establish proactive management and universal procedure of checking progress of students
Organize regular meetings/seminars/workshops for academic staff and doctoral students to share the experience gained in scientific research.
Ensure higher involvement of teaching staff in scientific activities, for example, increase the number of publications published by teaching staff in peer-reviewed editions, i.e. at least one publication during each 1.5 or 2 years.
Improve the existing mechanism for recording/collecting information about the teaching staff activities, which is necessary for determining the support and motivation system of teaching staff.

III - Assessment of the Requirements for the Study Field and the Relevant Study Programmes

III - Assessment of the Requirements for the Study Field and the Relevant Study Programmes

Assessment of the Requirements for the Study Field

Requirements	Requirement Evaluation			Comment
R1 - Pursuant to Section 5, Paragraph 2.1 of the Law on Higher Education Institutions, the higher education institution/ college shall ensure continuous improvement, development, and efficient performance of the study field whilst implementing its internal quality assurance system:	Fully compliant			The ViA complies with all the requirements of the criteria since it ensures continuous improvement, development, and efficient performance of the study field whilst implementing its internal quality assurance system, as justified in the sub-criteria below. Improvements can still be made in the way of clearly defining calculation of dropout methodology and further efforts should be made to encourage students and graduates to fulfill the questionnaires. (See comments above, and SAR pages 27-33.)
R2 - Compliance of scientific research and artistic creation with the level of development of scientific research and artistic creation (if applicable)		Partially compliant		Scientific research activities are well-organized and seamlessly integrated into the study process at all levels. However, a potential weakness arises from variations in academic staff research activity, which can be effectively addressed through the introduction of supplementary motivation mechanisms. Further insights into this matter are detailed in chapter 2.4 of each respective study programme analysis.
R3 - The cooperation implemented within the study field with various Latvian and foreign organizations ensures the achievement of the aims of the study field.	Fully compliant			ViA has established a strong cooperation network with Latvian and international partners ensuring compliance of study programs objectives with job market requirements and research level compliance with ICT industry trends. Additional efforts should be made to promote proactively students and teachers outgoing Erasmus+ mobility

Requirements	Requirement Evaluation		Comment
R4 - Elimination of deficiencies and shortcomings identified in the previous assessment of the study field, if any, or implementation of the recommendations provided.		Partially compliant	While progress has been made on some of the recommendations made by previous accreditation and licensing experts, such as improving the infrastructure of study programs and enhancing the capacity of academic staff, there are several recommendations that require more urgent attention and implementation. For example, a funding plan needs to be developed in case the target numbers of students for the new professional Master programmes "Virtual Reality and Smart Technologies" 48484 and the Master “Cybersecurity Engineering” 47482 is not achieved. Additionally, the document "Internal Quality Assurance of Vidzeme University of Applied Sciences in the Study Process" needs to be reviewed and updated with the involvement of external parties in the quality assurance process to ensure effective quality monitoring.

Assessment of the Requirements for the Relevant Study Programmes of the Study Field

No.	Study programme	R5	R6	R7	R8	Evaluation of the study programme (excellent, good, average, poor)
1	Information Technologies (42484)	Not relevant	Fully compliant	Partially compliant	Partially compliant	Good
2	Mechatronics (42523)	Not relevant	Fully compliant	Partially compliant	Partially compliant	Good
3	Cybersecurity Engineering (47482)	Fully compliant	Fully compliant	Fully compliant	Partially compliant	Good

No.	Study programme	R5	R6	R7	R8	Evaluation of the study programme (excellent, good, average, poor)
4	Virtual reality and smart technologies (47484)	Fully compliant	Fully compliant	Partially compliant	Partially compliant	Good
5	Socio-technical systems engineering (51482)	Fully compliant	Fully compliant	Partially compliant	Partially compliant	Average

The Dissenting Opinions of the Experts

n/a