

# Expert group joint opinion

Evaluation Procedure: Assessment of Study Field

Higher Education Institution: Vocational education competence center "Riga Technical College"

Study field: Manufacture and Processing

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

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

Riga Technical College implements the study field “Manufacture and Processing” with the study program “Wood Processing” which is developed in accordance with the Law on Education of the Republic of Latvia, the law on Vocational Education, and the Law on Higher Education Institutions, as well as the regulations of the Cabinet of Ministers. Management of the study field complies with the basic requirements of regulatory acts. The study field and the relevant study program comply with the main directions of the strategic development of the college and at moderate level meet the needs and the development trends of the society and national economy. The demand for the program in the labor market is certain and is confirmed by the surveys done in the largest Latvian companies: JSC “Latvijas finieris”, “Attēls R” (Riga Technical College - RTC, Self Assessment Report - SAR, page 13). It is stated that 100% of graduates work in the relevant field and it was confirmed by the students and graduates during the meetings, that almost every student (except one) do work in the relevant field. Also, the potential and need for the specialists were specified by the employers during the meeting with the experts - all employers did agree that there is a potential for this type of specialists and it corresponds to the future growth at the national and international level that is described in the SAR. Although the insufficient number of students is the biggest threat to the College and it is more concerning that there is no strategic plan identified how it could be increased, also there isn't a marketing strategy or plan on how to increase the number of students. Riga Technical College's internal quality assurance system focuses on: continuous improvement of the study program and/or study courses; Regular evaluation of lecturer's work; Evaluation of the results of the study process (SAR, page 21). The College summarizes a lot of important information from which changes can be made for better performance. This data is important and shows yearly changes and general trends in the implementation of the study programs. Although there are many concerns - It is unclear how the feedback is given to the stakeholders - students, graduates, and employers. There is a lack of documentation that proves changes that are made to improve study quality. Employers foresee closer cooperation and are not fully informed about the documents, for example, documents concerning the practice evaluation or other statistical data about the College and the study program. Riga Technical College has established a system for determining and redistributing the financial support required for the implementation of the study field and the corresponding study programs, but there is no system for funding scientific or applied research. The information and communication technology solutions used to ensure the study process are appropriate and effective. The infrastructure resources, material and technical support necessary for the implementation of theoretical and practical studies in the study field have been identified in Riga Technical College, but there is almost none of the aforementioned for scientific and research work in direct disposal of the College. Riga Technical College has developed a system for the improvement and purchase of methodological and informative provisions. Library resources and databases are available to students. The information and communication technology solutions used to ensure the study process are appropriate and effective. In fact, computerized processing and cataloging of the collection's books are available in the library. Readers are able to search for the necessary publications both on-site and remotely via the internet. The College has defined and implemented procedures for attracting qualified teaching staff, still, the scientific background lacks for part of the academic staff members, but this is compensated by their work experience in the industry. Needs for professional and didactic development of the teaching staff are determined and improvement measures are used. The workload of the teaching and administrative staff is moderately balanced, still, improvements could be made for a more balanced distribution of responsibilities at the study field's management level. The academic staff should be more actively involved in scientific research, because the connection to “Wood Processing” research and development activities is too

weak compared with different other applied research branches in the College (electronics, mechatronics, pedagogy, etc.). Conference proceedings of Riga Technical College should more correspond to international scientific research publication standards where there is a clearly defined methodical part and should include international references - at least 10 or more from publications that are not older than 5 years from the date of publication of the paper of the RTC conference. There is very low scientific research collaboration with other HEI. Scientific research in CNC and CAD/CAM technologies innovative solutions are applied in the study field, which has a significant positive impact on the vocational study process if it is methodically improved and further developed in scientific research. Riga Technical college has agreements with different local partners, but strong existing cooperation can be noticed only with some employers that actively provide internship places for students. Collaboration with universities and scientific institutes to boost scientific research and study program quality lacks. The college has indicated some collaborations with partners from abroad, but these connections are not often used. Since there has been only 1 occasion of a student undergoing an internship abroad and 2 cases of short-term outgoing mobility for academic staff members, collaboration with institutions abroad is considered as absent. Riga Technical college has not developed a system for attracting foreign lecturers and students. Including potential foreign students or lecturers in the study process is difficult since the program is implemented only in Latvian language. It is alarming, that contrary to information Riga Technical College provided in the "Report on the implementation of the recommendations of the study program "Wood Processing" ", experts could identify that only part of the given recommendations are implemented to the full extent. Still, the contribution of the college to the analysis of recommendations and their application to the specifics of the study field and the corresponding study programs is evident. The study program "Wood Processing" complies with the study field of "Manufacture and Processing". Study program aims, and tasks, aren't closely related to each other and with current scientific activity - implementation of the program can not be fully achieved. The dropout rate of the students is very high. Only information about changes in the study program was obtained from the interviews. So it is hard to tell if any implemented changes have been in fact implemented and analyzed. Student count in the program is declining. The college has no calculations on what is the optimal student amount in the study year or per group for the program to be rentable. Alumni are demanded in the labor market. In accordance with available information and site visit, all of the graduates are employed, in most cases closely related to the study field. The review of the detailed description of the study courses confirmed that the content of the program is topical - study subjects cover the knowledge required by the study field and meet the needs of study program "Wood Processing ". The content of the study program is topical in the professional skills segment. The content of the study courses is interconnected and complementary. According to the detailed description of the study courses, the study program is clearly practical oriented. Also, the number of practical hours is accomplished both in the school labs and in the company. The content of the study courses is interconnected and complementary as seen in the objectives of the study program. The sustainability of the program referring to the environment is shown by the fact that the results and outputs of the program are durable. The aims are clearly defined in the detailed descriptions of the study course and meet the needs and expectations of employers. The study provision, informative provision (including library), material and technical provision, and financial provision comply with specific features and the conditions for the implementation of the study program, create prerequisites for the achievement of the learning outcomes, but lack the aforementioned in the provision in scientific and research work, that is needed to ensure a high-quality study process. The funding available to the study program, funding sources, and the use of funding ensure full implementation of the study process, but there are no calculations available to identify the profitability of the study program. The study provision complies with the specific conditions for the implementation of the study program and creates prerequisites for the achievement of the learning outcomes and indicates the possibility to ensure a high-quality study

process and future employability. The study provision complies with the specific conditions for the implementation of the study program. Laboratories are well equipped with woodworking machines that support a wide scope of technical/technological woodworking topics. They have technology machinery for the wood procession. For example, some of the machines used in laboratories are thicknesser, CNC machines, spindle moulder, circular panel saw, membrane press for 3D, jointer, bandsaw, drill press, etc. The academic staff comprises 18 members and only 12 are suitable for academic positions according to Law on Higher Education Institutions and Cabinet Regulation No. 147. One academic staff member has a bachelor's degree and 5 vocational academic staff members have a first-level vocational higher education which is at the same level as the study program "Wood Processing". The college employs four assistants who do not have a scientific and academic degrees and need a five-year practical work experience corresponding to the subject to be taught.

## **I - Assessment of the Study Field**

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#### **1.1 Management of the Study Field**

##### **Analysis**

1.1.1. In the given self-assessment report (SAR) the aim of a study field "Manufacture and Processing", is identified as to prepare specialists for wood industry companies, production and processing companies, state and public organizations. After the review of SAR documents and during the meetings it was confirmed that the aims of the study field are clearly defined and attainable. A high level of the graduates and students work in the wood industry companies, there are some who work in schools or companies of other industries - not in the Woodworking sector. Updating strategic goals of the study field (Field of the study development plan, SAR annex 2.1.) should also be in the context of recent changes in the Vocational Education Law of Latvia, as it is now defined, that first level professional higher education, (which gives the opportunity to obtain a fifth-level professional qualification) is a part of first-cycle professional higher education which gives the opportunity to obtain a sixth-level professional qualification. And respecting that Republic of Latvia Cabinet Regulations No. 141 regarding the State Standard for the First Level Professional Higher Education has also defined that one of the aims of such programs is to create motivation for continuing education and provide an opportunity to prepare for obtaining the professional higher education and the sixth level professional qualification, it would be very important that the aims of this study field are defined in synergy with the study field of "Manufacture and Processing" implemented by Latvia University of Life Sciences and Technologies and Riga Technical University, where students can obtain the professional higher education and the sixth level professional qualification - corresponding study programs Wood processing and Material technology and design. Riga Technical College has an ambitious mission and vision to reach in a certain time period which is described in "Development and Investment Strategy for 2021-2027". But since there are no clear reachable goals identified it is hard to say if they complement the study field and the study program. The demand for the program in the market is certain and confirmed by the surveys done in the largest Latvian companies: JSC "Latvijas finieris", "Attēls R" (SAR, page 13). It is stated that 100% of graduates work in the relevant field and it was confirmed by the students and graduates during the meetings, that almost every student (except one) do work in the relevant field. Also, the potential and need for the specialists were specified by the employers during the meeting with the experts - all employers did agree that there is a potential for this type of specialists and it corresponds to the future growth at the national and international level that is described in the SAR. Experts are concerned that during the meeting with the college students, it was revealed that most students already work when they start studies in the College and it also shows that there should be more focus and strategic goals for the reskilling of the specialists who are not in high demand in the

labor market and lack the possibility to find a job or increase their possibilities to get higher position in the relevant sector. Riga Technical College implements the study field "Manufacture and Processing" with the study program "Wood Processing" which is developed in accordance with the Law on Education of the Republic of Latvia, the Law on Vocational Education, and the Law on Higher Education Institutions, as well as the regulations of the Cabinet of Ministers.

1.1.2. Riga Technical College has analyzed the strengths, weaknesses, opportunities, and threats of the study field and they are given in the SAR. Though the given strengths are a little bit concerning. In the SAR, it was given that the College cooperates with other institutions like Universities and companies but during the visit and in explanation in SAR experts saw that there are only a few partner Universities - Riga Technical University, Latvia University of Life Sciences and Technologies and companies - JSC "Latvijas finieris", "Attēls R" with high cooperation interest. Only one representative of the association - the executive director of the Latvian Association of Wood Processing Companies and Exporter has confirmed that there is a cooperation agreement between association and the College. While other employers said the opposite. It is good that during the meeting graduates confirmed that they know about the possibilities to continue their studies in Latvia University of Life Sciences and Technologies. Social partners said to be involved in various study process activities: updating study courses (SAR, page 15) cited: "Social partners involved in the study process (updating study courses, study tours, lectures, providing support at various events)" - but there is no given explanation or proof of that and the employers could't confirm it during the visit, except the given notice about the need of more practice skills for the students. Erasmus mobility could be identified as an opportunity, but not as strength since the given data of actual mobilities is really low in reality - only one student was in a practice abroad (SAR, page 34) cited: "One second-year student 2020/2021. participated in ERASMUS + internship in Germany, wood processing company HOLTA 9, Hamburg". Professional development of the academic staff is questionable since the lectures in the study program lack master and doctor degrees, except for lectures of the general courses. Department of General education courses have lectures with master's and doctor degrees, but not the ones that are specialized in Woodworking specialty. During the meetings with the students and graduates, experts could really identify and confirmed as strengths, that students have a lot of practical experience, visit various companies during the study process and the equipment purchased by the College is at a high level.

Addressing the weaknesses, they were agreed during the visit and discussions with the representatives of HEI management and members of the group responsible for the preparation of Self-Assessment Report and QA system related issues, but they are not fully clarified and the College has to work more on identifying them in more detail than explained in the SAR.

Looking at Threats - an insufficient number of students (SAR, page 16) is the biggest threat of the College and it is even more concerning that there is no strategic plan identifying how it could be solved. During the visit it also wasn't clarified who is really responsible for this important issue and if the marketing strategy is prepared or not.

The opportunities given in the SWAT analysis are clear and mostly focus on the more active involvement of the employers in the study process, opportunities for students and academic staff to participate in various projects and events, development and improvement of methodological material, etc. But there is a gap between them and the development plan that concerns experts. The given Development and Investment Strategy for 2021-2027 is for six years and it is not detailed. It is not clear what will be done in the short or long term, but the most important thing is that there is no information given about the goals that are specified and need to be reached so that the strategy could be confirmed as fulfilled during the 6 years. Also, there is no specified information about the participants responsible for reaching the short term goals and if there will be changes according to the development in the labor market or if there are any risks specified that could be conducted during this period.

Although the educational institution has a Development and investment strategy for 2021-2027 ("PROFESIONĀLĀS IZGLĪTĪBAS KOMPETENCES CENTRA "RĪGAS TEHNISKĀ KOLEDŽA" ATTĪSTĪBAS UN INVESTĪCIJU STRATĒGIJA 2021. - 2027.GADAM, precizēta". Available in Latvian (College website), there is no references to this document in the development plan of the study field (an appendix to the SAR 2.1. "Studiju virziena attīstības plāns.docx"). Because of it, their connection isn't clear. Unfortunately, the aforementioned development plan of the study field lacks precisely defined and measurable goals, as well as precise actions and division of responsibilities in the institution for achieving these goals. For example, one of the main objectives in this document is defined as to "Promote research activities among the academic staff and the students", but there is no information on how Riga Technical College is planning to achieve this goal or whose responsibility it is to lead this process in the study field.

As short, mid-term, as well as long-term labor market analysis shows, there is no doubt that graduates of this study field will be in rapidly growing demand both as a qualified workforce and as middle-level managers. By 2027 there will be lack of 4000 qualified specialists in the wood processing industry (Source: short and mid-term <https://prognozes.nva.gov.lv/lv/profession>; long-term <https://prognozes.em.gov.lv/lv/darbaspeka-pieprasijums>).

1.1.3. In the SAR it is written that the study program "Wood Processing" corresponds to the study field "Manufacture and Processing" and the study field and the only study program in it are managed by one person - the director of the study program. He is administratively subordinated to the head of the Department of Motor Transport and Production Technologies. The Department consists of a combination of the lecturers who lead study courses in the study program "Wood Processing" and general education study courses. Leading person is the Head of the Department. Though the changes in the lectures are supervised by the director of a certain study program. The improvement of the technical base is considered at the department meeting level, but about the financial part with the College council or College director (SAR and meetings during the visit). Experts are concerned that the Study Department is mostly responsible for the changes and implementation of improvements in the study program. Because there isn't a detailed plan from the program director and it isn't described how decisions on improvements are made. Experts think that the development of the study field including a practical base has to be discussed more with social partners and employers taking into account changes in the industry. Representatives of the students and graduates also should be part of it, for example, of the board responsible for the updates and actual changes.

It can be stated that administrative support is not fully provided to ensure all needs of the study program of the study field. The lack of detailed plans, and structure of the group responsible for the implementation of the improvement does indicate that. As for the technical support the students, graduates, and the lecturers did confirm the information given in the SAR about the software given to the students by the College and the possibility to use it in a distant way.

1.1.4. Riga Technical College describes the admission of student candidates to the study programs of RTC based on their grades of general or secondary vocational education. The given admission criteria and procedure are described on the website (College website) and it corresponds to the rules of the Ministry of Education and Science of Latvia for a state budget student position bypassing the normal competition. Also, there is the procedure (annex: Regulation on recognition of study results achieved in previous education or professional experience) if the student has a higher degree or previous experience. The mentioned document is given, but there are some questions about the composition of the commission. If the professional experience is evaluated the lectures with precise practical experience should participate and evaluate the student's knowledge.

In the SAR it was stated that - "at the beginning of the studies, the students are informed of how their knowledge and skills are to be assessed as part of every study course. The information

obtained motivates students to study, makes it possible for them to assess themselves, and for the instructors to assess the study process of the student group". During the meeting with the experts, this information was confirmed by the students and academic staff of the study program. Experts confirm that the College has clear definitions of the goals and objectives of the courses and their assessment criteria are a mandatory part of the development of course programs. Thus, as they begin with a course, the students are familiar with its content, the requirements for successfully completing it, as well as the assessment criteria.

1.1.5. Riga Technical College in the SAR has written that they are using the unified approach and point out Bloom's taxonomy for assessing academic performance. At the beginning of the studies, the students are informed of how their knowledge and skills will be assessed in the study course. The information obtained suggests that it motivates students to study, makes it possible for them to assess themselves, and for the instructors to access the study process in the study group. This information was confirmed during the meetings in the Riga Technical College: first the students and lectures did confirm that the lecturers inform students about the study course evaluation and specific goals that have to be reached within the semester work - during the studies. The Moodle system is used to give information and methodics so that the procedures are clear for students' self-assessment and they would know course details. Experts are concerned that each study course has its own evaluation system - there isn't a unified one in Riga Technical College and it gives students various understandings of how the course should be completed. At the same time there is good cooperation with the instructors. Also, it is good that in this program experts see a lot of effort in problem solving skills in a practical manner and that there are academic staff office hours - then students can meet lectures for consultations - that are assigned every semester (official College website, College Moodle system) to increase the motivation for studies and support for the students. During the meetings, students told and lecturers also confirmed, that lecturers answered questions even after working hours. Experts are concerned that it isn't fully clear how the students are really self-assessing themselves, since there was insufficient information about it, despite the given workshops, midterm tests, or practical projects. There is no information if there are self-control tests given or other types of self-assessment practices. Also, it isn't clear who foresees and makes strategy and evolves renewing of these processes. Unfortunately, also it is relatively difficult to evaluate the methods of assessing the acquisition of skills and knowledge during and after student internships. The expert group had access to student practice books, in which the learning results of the content of the practice program is assessed with grades from 1 to 10, however, it is not clear how the employer and the educational institution cooperate and control this assessment process, and there are reasonable doubts about the comparability of the assessment results between internships that take place at different companies.

1.1.6. As described in the SAR, Riga Technical College follows the principles of academic fairness, including the use of equipment and procedures that prevent instances of plagiarism, fraud, and unethical behavior among its staff and students. Riga Technical College has joined the plagiarism control system "plag3.lu.lv" maintained by the University of Latvia and uses it for the review of qualification papers to foresee the forgery. If it is found the ethics commission is convened for the investigation. The tool and the possibilities to review the qualification papers was confirmed during the discussion with the representatives of the group responsible for the preparation of the Self-Assessment Report and QA system-related issues, but there was no information given of the requirements to the commission (SAR, page 21) cited: "In case of suspicion of non-compliance with the ethics (code), an ethics commission is convened) which investigates the circumstances" and the procedure which has to be taken if the plagiarism was detected. The stakeholders are informed about this by specified information given in the official College website and during the meetings with the program lectures and the director of the program.

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

Riga Technical College implements the study field "Manufacture and Processing" with the study program "Wood Processing" which is developed in accordance with the Law on Education of the Republic of Latvia, the law on Vocational Education and the Law on Higher Education Institutions, as well as the regulations of the Cabinet of Ministers. Management of the study field complies with the basic requirements of regulatory acts. The study field and the relevant study program comply with the main directions of the strategic development of the college and at moderate level meet the needs and the development trends of the society and national economy. The demand for the program in the labor market is certain and confirmed by the surveys done in the largest Latvian companies: JSC "Latvijas finieris", "Attēls R" (SAR, page 13). It is stated that 100% of graduates work in the relevant field and it was confirmed by the students and graduates during the meetings, that almost every student (except one) do work in the relevant field. Also, the potential and need for the specialists were specified by the employers during the meeting with the experts - all employers did agree that there is a potential for this type of specialists and it corresponds to the future growth at the national and international level that is described in the SAR. An insufficient number of students is the biggest threat to the College and it is even more concerning that there is no strategic plan identifying how it could be solved - there isn't a marketing strategy or plan on how to increase the number of students. Also as it was investigated were is no no clear reachable goals identified in the "Development and Investment Strategy for 2021-2027" that gives even bigger concerns about the potential to increase the amounts of the students in next five years. It can be stated that administrative support is not fully provided to ensure all needs of the study program of the study field. The lack of detailed plans, and structure of the group responsible for the implementation of the improvement does indicate that.

### **Strengths:**

1. The demand for the program in the market is certain and confirmed by the surveys done in the largest Latvian companies.
2. Graduates have the possibility of continuing their studies at Latvia University of Life Sciences and Technologies.
3. Overall assessment of academic performance in study courses is clearly defined and supports learning/teaching processes.
4. Students have a lot of practical experience, visit various companies during the study process and the equipment purchased by the College is at a high level.
5. The College gives a lot of effort to increase the motivation for studies and support for the students and it is really seen since the lectures are open even after working hours.

### **Weaknesses:**

1. The identified flaws of measurable strategic development planning and implementation lead to a heavy management structure and ineffective decision-making processes.
2. Main aims of the study field are defined, but they should be updated, more detailed, measurable, and in synergy with respective sixth-level programs in other higher education institutions - universities.
3. SWOT analysis and its documentation insufficiently describe how self-identified threats and weaknesses will be strategically managed.
4. The College doesn't give enough attention to how student self-assessment processes are carried out and methods are defined, as well as the assessment of internship results should be improved.
5. There are only a few partner Universities and companies with high cooperation value - low agreement level.
6. Actual mobility is really low - only one student was in a practice abroad.



7. An insufficient number of students is the biggest threat to the College and it is even more concerning that there is no strategic plan identifying how it could be solved - there isn't a marketing strategy or plan on how to increase the number of students.

## **1.2. Efficiency of the Internal Quality Assurance System**

### **Analysis**

1.2.1. Riga Technical College internal quality assurance system focuses on: continuous improvement of the study program and/ or study courses; Regular evaluation of lecturer's work; Evaluation of the results of the study process (SAR, page 21). But this information about the quality policy is not publicly available, except the data given in the "YEARBOOK" consisting of the general trend in the implementation of the study program ([www.rtk.lt](http://www.rtk.lt)). In the SAR it is stated that there are regular reviews and that necessary changes are made to the study program study plan and / or study course description - "The study program "Wood Processing" at RTK has been implemented since 2011. During this time, changes were made in the study plan and descriptions of study courses in 2016 and 2018. Changes are currently being prepared, which are planned to be implemented from the 2022/2023 academic year" (SAR, page 21). This is done by the director of the respective study program based on the results of discussions and surveys with employers, lectures and students. The necessary changes are approved at the meeting of the respective department, Study Department and by Council decision. As for the surveys it was written in the SAR that the student surveys were done and it was confirmed by the students and the graduates of the study program during the visit. Thow there wasn't clear answers about what was implemented according to theses results and wasn't given a full explanation of the improvements of the study program according to the needs of the students, except that students did appreciate the tolerant time table and possibilities to work and study, but experts think that this can not be stated as the improvement of the study quality. As for the lectures there is no information suggesting the surveys are done by them, as it was stated during the meetings with the academic staff and also described in the SAR that lectures do fill in their SAR. What is concerning is that the staff is changing the study course content during lectures and it is not clear in what period and by whom the study course description is reviewed and if description corresponds to the content given to the students. Also during the meeting with the employees, they told experts that there is only some oral feedback from them to the college management. For example many of them gave a notice that they think that students should have more practice in the study program, but they didn't told if it was implemented or stated in some written report for a study programme improvement. This indicates that there is not sufficient collaboration with the employers and that the quality assurance system does not contribute to the achievement of the aims and learning outcomes of the study field and the relevant study programmes, since the main aim of "Wood Processing" study program is to prepare specialists for wood industry companies, for wood industry companies, production and processing companies, state and public organizations. To be precise there is no noticeable data that could show what was actually done to improve the study content due to a given feedback. This indicates that the quality system does not fully ensure the continuous improvement, development, and the relevant study program.

1.2.2. Riga Technical College describes in the SAR that the evaluation of the study field / study program takes place by reviewing the annual self-evaluation of the program. It is stated that in Riga Technical College it is the main tool and document for the evaluation of the study program / study field for compliance with the quality and quality system. After the meetings with the representatives of the College (that include the graduates, students and lectures of the program) it is still not clear for experts how the feedback is given to the stakeholders - students, graduates and employees. As there isn't a described mechanism how the SAR results are presented to the stakeholders and if

there are some measures done to improve the results. Experts think that it is due to the lack of the documentation which would provide the information in written form (not the oral one) for the stakeholders that there was feedback and collected data was shown to the stakeholders in some manners like meetings, information days or specified other ways. Although the students said that there are regular - twice a year meetings with the program director to share their ideas, there isn't procedure (except for evaluation given in the website) to show what was done and to give a full feedback. The same was said during the meetings with the employers as they do foresee more close cooperation and are not fully informed about the documents, for example, documents concerning the practice evaluation or other statistical data about the College and the study program. And though the Riga Technical College provides an internal communication system created to enable the circulation of the information in both the horizontal and vertical dimension (SAR, page 21) there are many concerns described above that do suggest that the feedback mechanism is not fully available for all stakeholders as much as it lacks efficiency.

1.2.3. Riga Technical College describes the system in the SAR that - "At the end of each study year, students are given questionnaires with questions about the study courses, which were easier and more difficult to learn. What is the satisfaction with the list of classes, as well as whether the opinion about the specialty to be studied has changed and whether there is existing or previous experience in the specialty of woodworking. Students also have the opportunity to write their proposals in the questionnaires". This information was also confirmed by the students representatives and the team responsible for the SAR and QA system related issues during the meetings with the experts. In the SAR experts saw a clear description of appeals procedure - as the students who have justified complaints regarding the evaluation of their tested skills and knowledge may submit a reasoned written request to revise the grade within one business day after the test results are announced. But there is no clear information about the responsible person or group of persons who wouldn't have a conflict of interest. In the meetings with the Riga Technical College members (academic staff of the study programme) it was confirmed that students can write the complaints and retake the exams or address the complaints for the College director, for example, about the defense work. Riga Technical College states (statement: There have been no negative evaluations of the implementation of the study program "Wood Processing", SAR, page 25) that there were no complaints yet for this study program. Also some information came from the statements during the meetings with the academic staff of the study programme - that some information about the complaints is given in the study contract (not confirmed) and that students can retake the exams to higher grade as many times as they want (this statement is also concerning fact).

1.2.4. In the SAR experts read that the Study Department in Riga Technical College is responsible for the report and forms which are compiled. Most data and information is presented in the "YEARBOOK", there Riga Technical College summarizes: Qualification exam results, Contingent changes in general and individual study programs, Admission results, Lecturers involved in the implementation of the study programs, Further progress of graduates, Participation in projects, Economic activity, including investments in the technical provision of the study program materials. This data is important and shows yearly changes and general trends in the implementation of the study programs. It can be stated that data collected in the "YEARBOOK" shows that there is mechanism for regular data collection. Summarizing the student's progress and changes in the contingent helps to see the situation and foresee the possible strategies. In the SAR, page 25 cited: that "During this time, changes were made in the study plan and descriptions of study courses in 2016 and 2018". As for surveys of students conducted by the Study Department and the directors of the respective study programs on the satisfaction with the organization of the study process, experts have some concerns. In the SAR it was stated that they are regularly conducted after each semester - once in the semester or two times in the year, but in the meetings with the students and

graduates it was stated that it is done only once in the year. During the meeting graduates could identify the questionnaire of the study quality but not the one for the graduates, specifying the full study process that they have participated in. The meetings revealed that students and graduates could not reveal the improvements - specifying examples - that have been implemented after the surveys have been done and notes were given to the College representatives. Practices are an important part of student practical skills development, but there is no feedback gathered from the employers. During the meetings with the companies experts heard that only few employers have given feedback to Riga Technical College and it was done only orally - no surveys were conducted. During the meeting employers stated that they would like to participate more in the study process improvement, but there wasn't enough involvement yet - no social meetings and discussions of the study program evaluation given.

1.2.5. In the SAR experts can see that important information given by the authorities is given only in Latvian language. The information given in English does not correspond to the one given in Latvian, for example, there is no information about the study course programme with the subjects and credits in English, only in Latvian (College website). Also two more internet links given in the SAR are directed to the Riga Technical College internal Moodle system that is only available for authorized users. It is not clear how applicants can see the information in this system, as when this system was presented by the IT specialist during the meeting it was stated that students are given the accounts when they start the study process. As for information available in the official registers (VIIS) as it is stated in the SAR there is a person responsible for entering the information.

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

Riga Technical College internal quality assurance system focuses on: continuous improvement of the study program and/ or study courses; Regular evaluation of lecturer's work; Evaluation of the results of the study process (SAR, page 21). The College summarizes a lot of important information from which changes can be made for better performance. This data is important and shows yearly changes and general trends in the implementation of the study programs. Summarizing the student's progress and changes in the contingent helps to see the situation and foresee the possible strategies. Although there are many concerns - It is unclear how the feedback is given to the stakeholders - students, graduates and employees. Lack of documentation that proves changes that are made to improve study quality. Employers foresee closer cooperation and are not fully informed about the documents for example, documents concerning the practice evaluation or other statistical data about the College and the study program.

#### **Strengths:**

1. The College summary a lot of important information from which changes can be made for better performance.
2. Students did appreciate the tolerant time table and possibilities to work and study at the same time.

#### **Weaknesses:**

1. In the SAR experts saw that the important information given by the College is given only in Latvian language. The information given in English does 2. not correspond to the one given in Latvian, for example there is no information about the study course programme with the subjects and credits in English, only in Latvian.
3. It is unclear how the feedback is given to the stakeholders - students, graduates and employees. As there isn't a described mechanism how the self assessment report results are presented to the stakeholders and if there are some measures done to improve the results.

4. Employers foresee closer cooperation and are not fully informed about the documents for example, documents concerning the practice evaluation or other statistical data about the College and the study program.
5. Lack of documentation that proves changes that are made to improve study quality.

### **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:** Partially compliant

Lack of given documentation makes it difficult to understand and prove that there are some changes made and effort given to improve the study quality. It is not clear how the feedback is given to the stakeholders as students, graduates and employees. As there is also no shown and described mechanism within the efficiency that could be measured. Insufficient number of students is the biggest threat of the College and it is more concerning that there is no strategic plan identified how it could be increased also no marketing strategy or plan how to increase the numbers of the students.

Riga Technical College internal quality assurance focuses on: continuous improvement of the study program and/ or study courses; Regular evaluation of lecturer's work; Evaluation of the results of the study process. But there is a lack of the established policy and procedures, suggested like ISO standard for management to ensure quality in full manner.

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

**Assessment of compliance:** Partially compliant

Riga Technical College internal quality assurance focuses on: continuous improvement of the study program and/ or study courses; Regular evaluation of lecturer's work; Evaluation of the results of the study process. But there is a lack of the established policy and procedures, suggested like ISO standard for management to ensure quality in full manner.

- 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:** Partially compliant

The study program "Wood Processing" at RTK has been implemented since 2011. During this time, changes were made in the study plan and descriptions of study courses in 2016 and 2018. Changes are currently being prepared, which are planned to be implemented from the 2022/2023 academic year" (SAR, page 21). The implementation of the study process is regularly monitored. The most important processes are depicted in graphs, such as admission, so that the rules can be followed more precisely, and they are regulated by internal regulatory documents. What is concerning is that the staff is changing the study course content during lectures and it is not clear in what period and by whom the study course description is reviewed and if description corresponds to the content given to the students.

- 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:** Partially compliant

Experts are concerned that it isn't fully clear how the students are really self assessing themselves, since it was given low information about it, despite the given workshops, midterm tests or practical projects. But there is no information given if there are self control tests given or other types of self assessment practices. Also it isn't clear who foresees and makes strategy and evolves renewing of these processes.

- 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:** Partially compliant

In the SAR it is stated that the work of lectures is regularly monitored. The director of the respective study program regularly organises the observation of lecturers' classes. At the end of each study year, lecturers submit a self-assessment to the head of the respective department. The results of student surveys are added to this. But for the academic staff there is no information suggesting the surveys are done by them, as it was stated during the meetings with the academic staff and also described in the SAR that only lectures do fill in their SAR.

- 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

Riga Technical College summarises: Qualification exam results, Contingent changes in general and individual study programs, Admission results, Lecturers involved in the implementation of the study programs, Further progress of graduates, Participation in projects, Economic activity, including investments in the technical provision of the study program materials. The work of lectures is regularly monitored. The director of the respective study program regularly organises the observation of lecturers' classes. At the end of each study year, lecturers submit a self-assessment to the head of the respective department. The results of student surveys are added to this.

- 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:** Partially compliant

To be precise there is no noticeable data that could show what was actually done to improve the study content due to a given feedback. This indicates that the quality system does not fully ensure the continuous improvement, development, and the relevant study program.

### 1.3. Resources and Provision of the Study Field

#### Analysis

1.3.1. Riga Technical Colleges funding consists of a state grant (~95% to 98% of total RTC budget), its own revenues from paid services, funding obtained as a result of international cooperation projects and voluntary donations (~2% to 5% of total RTC budget) (SAR section 1.1., reference to development and investment strategy for 2021-2027 ("PROFESIONĀLĀS IZGLĪTĪBAS KOMPETENCES CENTRA "RĪGAS TEHNISKĀ KOLEDŽA" ATTĪSTĪBAS UN INVESTĪCIJU STRATĒGIJA 2021. - 2027. GADAM, precizēta". Available in Latvian: <https://rtk.lv/?sadala=203>)). The state grant fully covers the costs of the study process. The amount of the state grant is distributed on the basis of the student place costs specified in the regulatory enactments of the Republic of Latvia (SAR section 2.3.1.). RTC

provides a possibility for self-paid studies as it is stated in the established Study payment procedure (Available: <https://www.rtk.lv/?fails=1611926108.pdf>). By 2020./2021. study period RTC had in total 15 students that self-financed studies.

Students of RTC have scholarship opportunities within the limits of state grant funding. The procedure for awarding scholarships is determined by the Scholarship Award Regulations, which are publicly available on the RTC website (<https://www.rtk.lv/?fails=1644315666.pdf>)

As it is stated in the Development and investment strategy for 2021-2027 ("PROFESIONĀLĀS IZGLĪTĪBAS KOMPETENCES CENTRA "RĪGAS TEHNISKĀ KOLEDŽA" ATTĪSTĪBAS UN INVESTĪCIJU STRATĒGIJA 2021. - 2027.GADAM, precizēta". Available in latvian: <https://rtk.lv/?sadala=203>)), during the period from 2016, RTC has invested in equipment and inventory modernization from state and EU funding, and until 2027 RTC are planning to increase investments about four times. The specification of the planned investments show that it would be equipment for practical training. There are no plans on investments in equipment needed for science and research. It must be noted that availability of any funding mainly is the responsibility of the Ministry of Education and Science Republic of Latvia rather than the College.

SAR and its annexes, as well as RTC`s budget (available publicly at <https://www.kase.gov.lv/parskati-un-tames/valsts-budzeta-tames>) does not indicate any systematic funding for scientific or applied research.

1.3.2 The infrastructure resources and material and technical support are at the disposal of the college and resources are available to students and teaching staff.

As was observed during the expert visit and interviews with teaching staff and students RTC combines the available resources and knowledge from other study fields and programs in the implementation of the assessed study field and study program. Students have opportunities to use resources from, for example, metalworking, electronics, mechatronics, engineering mechanics, etc. - study programs that significantly improve future woodworking technologists' understanding of production processes and technologies.

Experts identified that RTC has a good material and technical base for the implementation of practical training - modern CNC machinery, positional woodworking machines, mechatronics training stands, CNC simulators, electrical hand tools etc. (SAR 2.3.2.), however, there is a lack of facilities and equipment that would be necessary for conducting scientific and practical research. There are examples of good practice at RTC where students carry out their research at other HEI and scientific institutes for example State Wood Chemistry institute, however these are isolated cases rather than a systematic approach. Also, learning the basics of research methodology would require at least some basic equipment, for example, for evaluating the physical-mechanical properties of materials and their combinations.

The infrastructure resources and material and technical support necessary for the implementation of the study field have been identified in RTC and they are at the disposal of the College.

During the experts' visit was found that the study programme uses modern technology as are computers, multimedia and online resources. For example study rooms are equipped with computers and projectors for lectures.

1.3.3. College has developed a system for the improvement and purchase of methodological and informative provision. Library resources and databases are available to students and meet the needs of the study field as described on the college Internet site (<https://www.rtk.lv/?sadala=1659>).

The service is available with 31 study places, computers and a multifunctional photocopier in the reading room with 117,4 m<sup>2</sup>. The computers are connected to the Internet through the local area network, which is a free of charge service for college pupils and students. The library reading room provides free access to reference literature, latest publications in various branches and fiction for pupils, students and academic personnel. The library contains study and methodological materials in foreign languages, i.e. English, German and Russian. The library utilizes alphabetical and systematic catalogues (<https://skolas.biblioteka.lv/Alise/lv/69/home.aspx>). The library is included in the unified

state library information system, which envisages performing library processes in the automated information system SCHOOL ALISE (<https://www.rtk.lv/?sadala=432>). Computerized processing and books catalog is used in the library. Readers are able to search for the necessary publications both on-site and remotely via the internet (<https://www.rtk.lv/?sadala=432>).

1.3.4. The information and communication technology solutions used to ensure the study process are appropriate and effective. As seen during the experts' group visit Moodle is used as the main tool for lectures and exercises. Students arrive very well prepared for online work. Moodle as a Course Management System (CMS) is designed based on known pedagogical principles to help the educators in creation of effective online learning communities. Moodle is a free platform under the GNU Public License which is used by the College and was presented in details during the experts' group visit in College (<https://muu.rtk.lv/login/index.php>).

Moodle allows students the access learning resources and has learner support systems such as:

- access to literature materials
- advice and counseling,
- opportunities to provide and receive formal feedback on their experience on the course

As was observed during the expert visit and interviews with teaching staff and students RTC uses distance (online) learning methods, however, their application is limited in the implementation of practical exercises. During the pandemic, it was the only possibility to continue the study process. Although remote learning is evaluated as convenient and effective, especially by those students who, in parallel with their studies, work in one of the companies based in the regions, educators highlight problems in the quality control of the learning process. As it was demonstrated during experts visit to RTC, distance learning opportunities are also implemented in the MOODLE environment. Similar to other educational institutions, where remote studies were a solution to the crisis, experts recommend investing in academic staff support solutions for the transfer of learning materials and methods in the digital environment.

1.3.5. According to the SAR section 2.3.5. the academic staff of the College is elected in an open competition in accordance with the procedure specified in the Law on Universities and in accordance with the regulatory document "Regulations on academic positions and the procedure for their election" adopted and approved by the College Council. If there is a vacant or temporarily vacant assistant professor or lecturer position in the College, the College Council may decide not to announce a competition, but to hire a visiting assistant professor or visiting lecturer for a period of up to two years, who have exactly the same rights and duties and remuneration as elected assistant professors and lecturers.

As it was observed by experts, the qualification of the teaching staff members involved in the implementation of the study programme complies with the requirements for the implementation of the study programme. Only eight of eighteen academic staff members are practical proceeding with applied research and publishing articles. (AIKA e-platform. Annexes. II - Description of the Study Field - 2.3. Resources and Provision of the Study Field. Biographies of the teaching staff members). Still, experts think that those teaching staff members, who are not actively engaged in science and research are industry professionals and make a contribution to the implementation of the program through the transfer of practical knowledge and competences from the industry.

1.3.6. By the opinion of experts, the needs of professional and didactic development of the teaching staff are purposefully determined, appropriate improvement measures are used, evaluating the results and effectiveness of the implemented measures. RTC has developed a procedure for the annual assessment of the quality of lecturers' work. During the academic year, the director of the study program, with the participation of the head of the department or a representative of the administration, observes and evaluates two lessons for each lecturer (SAR 2.2.1.).

Not less than once during the academic year, the director of the study program, with the participation of the head of the department or a representative of the administration, conducts a student survey. At the end of the academic year, each lecturer submits to the director of the study

program his self-evaluation of his work and information about the success of students in their respective subject. (SAR 2.2.4.).

As it is stated in SAR section 2.3.6. Lecturers (teachers) have opportunities to improve and maintain their qualifications. SAR contains one example: Christoffer Stokkebro - PLM Group - Cloud Data Management February 15, 2022 , but the CV's of lecturers and other teaching staff includes also other activities of professional and didactic development:

- participation in professional skill competitions (national level);
- participation in seminars and workshops organized by National Centre for Education of the Republic of Latvia (for example "Application of hand power tools in the production of wooden products", "Innovative furniture decorative coatings", "Fundamentals of automated programming of CNC machine tools", "Current events in the furniture industry - development and challenges in times of change");
- participation in the working groups for the development of professional education programs, qualification exam content, methodological materials;
- participation in internships within the ESF project "Effective management of professional education institutions and improvement of staff competence".
- participation in other seminars (for example "Protection of children's rights", "Mentoring - effective support for new teachers").

RTC has developed ANNUAL PERFORMANCE QUALITIES OF TEACHERS EVALUATION PROCEDURE (Available :

[https://muu.rtk.lv/pluginfile.php/18841/mod\\_resource/content/1/Docētāju%20ikgadējās%20darba%20kvalitātes%20izvērtēšanas%20kārtība.pdf](https://muu.rtk.lv/pluginfile.php/18841/mod_resource/content/1/Docētāju%20ikgadējās%20darba%20kvalitātes%20izvērtēšanas%20kārtība.pdf)).

During this procedure (once a year) activities of professional development, methodological work, participation in internships and experience exchange activities of lecturers are evaluated by a commission nominated by the director of RTC.

Also during the expert visit in RTC at teaching staff interview, it was established that the study programme activities were analyzed monthly at the department meeting acknowledging progress of study processes issues and on the mutual cooperation development opportunities.

1.3.7. As it was concluded by the experts during the RTC and can be seen in SAR section 2.1.3. and its annex "Provision of the study field", the workload of the teaching and administrative staff is moderately balanced. But the programme director has a large workload, as he is responsible for administrative processes and is directly involved in the teaching processes, as well have a crucial part in quality assurance and in development of the study field. Academic staff mostly are on part-time workload, as they also work in other academic or scientific institutions.

1.3.8. RTC does not have any students from abroad in the study field (SAR section 2.5.3. and its annexes). According to information provided during the visit of expert group, there is significant support for students already working in the sector, as the study process is organized in the second half of the day and it is combined with distance learning solutions. This unlocks the possibility to attract a higher number of adults as students for reskilling and upskilling aims.

The higher education institution has identified the necessary support for students with special needs, which is indicated in the CEDEFOP archives (European Regional Development Fund (ERDF) project 'Modernization of the Riga Technical College premises and facilities for improving study programme quality':

<https://www.cedefop.europa.eu/en/news/latvia-real-work-environment-riga-technical-college>). During the project, reconstruction work was carried out at one of Riga Technical College building (heat insulation of the facade and the roof; access for students with special needs). Still only part of RTC infrastructure is adapted for students with special needs. If it is not possible to eliminate this deficiency with reasonable investments in infrastructure, then it would be necessary to develop a clear action plan on how the RTC adapts the implementation of training in such cases. As it is mentioned before, experts identified that academic and management staff of RTC provide support



for student needs, but during the interviews it was identified as a case-to-case based approach, rather than a developed and documented system.

A functioning support system for students is provided by giving assistance and consultations of academic personnel. Control of intermediate results is performed to promote achievement of study programme results in planned time and to increase study motivation (from evaluation survey).

The College focuses on creating a working environment where the lecturer and the student develop a good communication level. The first lectures' aim is the familiarization with a detailed course description, but there are also weekly individual consultations, cumulative study work evaluation system and result analyses, presentation of practice and analyses of its results, evaluation of practice involving students and practice lecturers, organization of student questionnaires on study programme courses to collect student opinion. The College motivates students to read literature published in foreign languages and invite guest lecturers from enterprises (from evaluation survey).

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

RTC has established a system for determining and redistributing the financial support required for the implementation of the study field and the corresponding study programmes, but there is no system for funding scientific or applied research.

The information and communication technology solutions used to ensure the study process are appropriate and effective. The infrastructure resources, material and technical support necessary for the implementation of theoretical and practical studies in the study field have been identified in RTC, but there is almost none of the aforementioned for scientific and research work in a direct disposal of College.

College has developed a system for the improvement and purchase of methodological and informative provision. Library resources and databases are available to students. The information and communication technology solutions used to ensure the study process are appropriate and effective. In fact computerized processing and cataloging of the collection's books has started in the library. Readers will be able to search for the necessary publications both on-site and remotely via the internet.

The College has defined and implemented procedures for attracting qualified teaching staff, still the scientific background is lacking for part of the academic staff members, but this is compensated by their work experience in the industry.

Needs of professional and didactic development of the teaching staff are determined and improvement measures are used. The workload of the teaching and administrative staff is moderately balanced, still improvements could be made with more balanced distribution of responsibilities on study field's management level.

RTC provides support for students when it is necessary.

#### **Strengths:**

1. RTC has made investments in the development of the material and technical provision of the study field, and in its 3. investment strategy it foresees significant financial investments in the future.
2. RTC effectively uses the material and technical base at its disposal and the competences of teaching staff to create synergy of the evaluated study field and program implementation with other study fields and programs.
3. Combination of academic staff and industry professionals has a positive effect on the versatility of the study field.
4. Organization of implementation of study courses are adapted to the needs of students that are already employed in the field. This unlocks the possibility to attract a higher number of adults as students for reskilling and upskilling aims.

5. Guest teachers are invited by the College to teach practical lessons, because the College's aim is to give students their practical experience.

**Weaknesses:**

1. No investments are planned for basic science and research work at the RTC.
2. Lack of scientific degree for a part of academic staff reduces capacity of scientific and research work in this study field.
3. More support for academic staff should be allocated to promote development of distance learning materials and methodology.
4. There are facilities of RTC that are not available to students with disabilities.
5. The range of responsibilities of the program director is very wide and creates risks for the effective and high-quality performance of his duties.

#### **1.4. Scientific Research and Artistic Creation**

##### **Analysis**

1.4.1. The direction of applied research of the study field corresponds to the development goals of the college and are relevant to the study field and industry but is poorly performed in publishing the scientific articles. "Wood Processing" research and development activities is too weak compared with different RTC scientific research branches - electronics, mechatronics, pedagogy ect. The directions of applied research for this study field is in CNC technologies and engineered wood base materials. Conference proceedings of RTC should correspond more to international scientific research publication standards where there is clearly defined methodical part (research methodology and standards) and should include international references - at least 10 or more from publications which are not older than 5 years from the date of publication of the paper of the RTC conference (Since 2003, Collage has been organizing the international scientific - practical conference, HIGHER VOCATIONAL EDUCATION IN THEORY AND PRACTICE and issuing volumes of scientific articles. <https://rtk.lv/?sadala=470>).

RTC operates based on Cabinet Regulation No. 147 dated 27 February 2007 'Statute of the vocational education competence center "Riga Technical College" (Ministru kabineta noteikumi Nr.147 "Rīgas Tehniskās koledžas nolikums"). One of the tasks of the college - point 7.4. - is to perform scientific research in the fields of engineering, information technology, social knowledge and transport services.

Employers are not involved in the applied research development, although, during expert interview, they recognised that they have considered the possibility of involvement in these areas. The teaching staff is aware that applied research is an important component for the study field and for high-quality studies, but there is no adequate motivation and a set of knowledge to achieve this advanced objective (AIKA e-platform. Annexes. II - Description of the Study Field - 2.3. Resources and Provision of the Study Field. Biographies of the teaching staff members). The College has very passive applied science collaboration with other higher education institutions which do not promote the possibility of publishing articles in the study field (AIKA e-platform. Annexes. II - Description of the Study Field - 2.4. Scientific Research and Artistic Creation. List of the publications, patents, and artistic creations of the teaching staff over the reporting period.).

1.4.2. The connection of applied research of the study field with the study process is very weak. The study process emphases is directed towards professional skills and knowledge development rather than applied research. For applied research, the College has a very good technical base, for example, CNC technology applied research topics could be more actively promoted (Since 2003, Collage has been organizing the international scientific - practical conference, HIGHER VOCATIONAL EDUCATION IN THEORY AND PRACTICE and issuing volumes of scientific articles. <https://rtk.lv/?sadala=470>). Academics and graduates of the study program "Wood Processing" have

the opportunity to publish the topic of their qualification paper in the collection of scientific articles organized by Riga Technical College, if the topic of the paper meets the requirements and the student wants to publish his work.

Since 2003 RTC has been organizing international scientific and practical conferences. Issued 18 volumes of conference proceedings (<https://rtk.lv/?sadala=470>). The total number of scientific articles is 269. Only 3 scientific articles are related to the study field and the study program "Wood Processing". Only 1% of all scientific research is related to the study program "Wood Processing" (<https://rtk.lv/?sadala=470>). In 2011 conference proceedings - Volume 9 there is only one article K.Stekelis "Darba vides parametru ietekme uz darbinieku kokapstrādē". That is only 4 % of all scientific articles in issue (<https://rtk.lv/?sadala=470>, AIKA e-platform. Annexes. II - Description of the Study Field - 2.4. Scientific Research and Artistic Creation. List of the publications, patents, and artistic creations of the teaching staff over the reporting period.) that are related to woodworking topics. In 2019 conference proceedings - Volume 16 there are only two articles K. Berens, K.Stekelis, U.Grīnfelds "Making Process of oil-based Finishing Material" and A.Stamers, K.Stekelis "Analysis of Computer Programs Used in Woodworking Industry". That is only 10 % of all scientific articles in issue (2,4) that are related to woodworking topics (<https://rtk.lv/?sadala=470>, AIKA e-platform. Annexes. II - Description of the Study Field - 2.4. Scientific Research and Artistic Creation. List of the publications, patents, and artistic creations of the teaching staff over the reporting period.).

1.4.3. International cooperation in the applied research within the study field is non and it is not purposely promoted. The College's middle level management during expert interviews acknowledged that applied research is not a priority. The only research relationship with international cooperation (SCOPUS) is done by guest lecturers who have worked on it in their basic workplaces, for example, RTU or other scientific institutes. There are some conference papers which are indexed in the Scopus database and partly support the research related to the study field and study program "Wood Processing" (AIKA e-platform. Annexes. II - Description of the Study Field - 2.4. Scientific Research and Artistic Creation. List of the publications, patents, and artistic creations of the teaching staff over the reporting period.).

- U. Grīnfelds, Use of fine fiber cellulose for reinforcing paper., Cellulose Chemistry and Technology, 2020, 54(1-2), pp. 113-117.
- U. Grīnfelds, Effect of extraction on the coatings produced from nanoparticle gels obtained from hardwood and softwood bark. IOP Conference Series: Materials Science and Engineering, 2019, 500(1), 012005.
- U. Grīnfelds, Dissolution of various cellulosic materials and effect of regenerated cellulose on mechanical properties of paper Key Engineering Materials, 2019, 800 KEM, pp. 138-144.

1.4.4. The College has not developed clear mechanisms for the involvement of the teaching staff in applied research. Only references given by College management representative's at interview are to the student qualification papers where only two of them lately are published in the College conference proceedings. This aspect is not efficient because of insufficient funding and because of management, according to the College representative's answers .

1.4.5. The College has partly developed mechanisms to promote the involvement of the students in applied research. The students are slightly involved in the applied research process but only by guest lecturer (Chemical woodworking technologies) in his study field and students rarely visit RTU and LAU MEKA laboratories. Only applied research results are to the student qualification papers where only two of them lately are published in the Colleges conference proceedings. In 2019 conference proceedings - Volume 16 there are only two articles K. Berens, K.Stekelis, U.Grīnfelds "Making Process of oil-based Finishing Material" and A.Stamers, K.Stekelis "Analysis of Computer Programs Used in Woodworking Industry". (Since 2003, Collage has been organizing the international scientific - practical conference, HIGHER VOCATIONAL EDUCATION IN THEORY AND PRACTICE and issuing volumes of scientific articles. <https://rtk.lv/?sadala=470>). This aspect is not efficient and poorly performed.

1.4.6. There are some innovative solutions which could be applied in the study field, but they partly stopped due students' involvement in the labor market during the study period after graduation, for example, oil-based Finishing material (K. Berens, K.Stekelis, U.Grinfelds "Making Process of oil-based Finishing Material") or CNC program efficiency CAD/CAM analysis (A.Stamers, K.Stekelis "Analysis of Computer Programs Used in Woodworking Industry") . Only the applied research results are published in RTC conference proceedings and no further research is developed on this topic. Those innovative solutions have some practical improvements in oil-finishing and CNC related study courses. According to the College representative's interview answers the narratives of students' diploma paper structure is made good enough that it could be integrated in local college proceeding articles but students are not motivated to do so.

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

The academic staff should be more actively involved in scientific research, because the connection to "Wood Processing" research and development activities is too weak compared with different RTC applied research branches (electronics, mechatronics, pedagogy ect.). Conference proceedings of RTC should correspond more to international scientific research publication standards where there is clearly defined methodical part and should include international references - at least 10 or more from publications which are not older than 5 years from the date of publication of the paper of the RTC conference. Very low scientific research collaboration with other HEI. Scientific research in CNC and CAD/CAM technologies innovative solutions are applied in the study field, which have a significant positive impact on the vocational study process if it is methodically improved and further developed in scientific research.

#### **Strengths:**

1. Material technical base is very good to carry out applied research activities (CNC).
2. Qualification paper structure is made good enough that it could be integrated in local college proceeding articles.

#### **Weaknesses:**

1. Scientific work in the "Wood Processing" study program is weak.
2. Only a few of the activities in "Wood Processing" studies are related to the applied research results and are published in RTC conference proceedings with no further research developed.
3. Very low scientific research collaboration with other HEI.

### **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

Only a few activities "Wood Processing" study is related to the applied research results published. A few vocational academic staff members and students are writing some proceeding articles, it is a serious quality issue.

### **1.5. Cooperation and Internationalisation**

#### **Analysis**

1.5.1. The College cooperates with some local institutions, but overall cooperation and collaboration activities can be evaluated as poor. The College has provided several cooperation agreements, for example with Daugavpils university for Information technologies ( annex:

Daugavpils\_Universitate\_ligums) or with Ventspils university (annex: Ventspils\_Augstskola\_ligums) for the same study programme etc. but they are not applicable for this study field. The only available agreement that is relevant for this study field is with Riga Technical university about mutual experience and knowledge exchange see annex: RTU\_ligums. During the interviews administration members could only name that they have this agreement, but no actual evidence about cooperation could be given. The College is not fully using the potential of this agreement, for example, at the College there is low scientific activity, which could be improved with the help of the Riga Technical university. This casts doubts about actual cooperation activity with other HEI locally. During the meeting with study programme academic staff members they could name one example of how a student has cooperated with Latvian Institute of wood chemistry. But this activity and collaboration with institutes also can be considered as weak. There are some specialists from institutes working as academic staff for example lecturer from woodworking chemistry technologies study course, but this can not be considered as collaboration since they are employed and all of scientific activity is carried out in the institutes based on interviews with staff members. There is no evidence of the College's cooperation with Riga or any other municipality. Regarding the specifics of the study field and that internship takes a great role in the study process, College has good collaboration with stakeholders. Employers are involved in evaluation of qualification papers, providing internship places at their companies information confirmed during the meetings with study programme directors and employers. but with some exceptions. During the site visit with employers, there were some representatives that could not comment anything about implementation of the study programme, alumni, the quality of studies etc. Which confirmed that not all of employers are actually involved in improving or evaluating the study field and the study programme. Regarding internships, there is evidence of some agreements for example with Latvijas finieris, which is the leading place to provide internships see annex: sadarbība ar partneriem. During the study process there are several excursions to different companies or institutes, but they are organized based on persons, who are connected to them, not based on any mutual agreements. For example, during the visit a student provided an example of how he was leading an excursion at the company where he works. Such activities should be beneficial to widen the knowledge about industry and create new potential connections not to show off your own job place. This also limits achieving study programme aim: Promote skill and knowledge acquiring, attitude formation, that provides for students to get qualification and promotes their competitiveness in variable social and economical circumstances acquired from SAR page 39. Graduates can not be competitive in the industry if during the studies the only options regarding professional training and internships are held in companies that they are working in. Unfortunately during the interview with employers experts also found out that stakeholders are not involved in providing potential qualification work topics for students, but they showed interest in such activity. Another issue is that most of the cooperation between college and the industry is based on personally knowing each other, and is not documented. There is a lack of such agreements and the study programme director could not name examples of such agreements. There are several examples of really good collaboration of students and academic staff members, for example creating works about wood oil topping, different testing and calculation about cost efficiency of materials that can replace wood, but this activity is insufficient for the higher education institution (SAR 2.4.5.). There are some local guest lecturers that are occasionally attracted to give lectures, but students could name only a few examples. Students confirmed that most of these lectures are held for all students and are not specifically designed for this study field. College has picked good potential cooperation partners that can support and help to improve the study field and study process for example Riga Technical university, wood chemistry institute, Kaunas technical college etc. But these partners are not actively involved in developing the study field or improving the study programme. Regarding internship places College and academic staff members can provide a broad network based on personal contacts where students can find and undergo internship. Potential internship places are for example in

Latvijas finieris, Mūsas amatnieks, AC galdniecība etc. (annex: sadarbība ar partneriem) all of the employers chosen are relevant to the study field and study programme of Wood processing and can provide specific features that correspond to needs of the labor market afterwards.

1.5.2. Riga Technical college has indicated (annex: sadarbība ar partneriem), that they also have partners from abroad, but no mutual agreements to support this statement have been provided. At the same time only 2 short outgoing mobility of staff members have been indicated (SAR section 2.5.3.) which clearly indicates lack of actual cooperation. Students are not promoted and encouraged to use these indicated partners from abroad, since only 1 student has undergone internship in Germany during the previous reporting period (SAR section 2.5.3.). There is no other evidence of strong existing international cooperation partners. International partners do not provide input in improving the study programme and study field of Manufacturing and processing. These partners are chosen based on involvement in woodworking industry or based

1.5.3. Currently there is no system for the attraction of foreign students or academic staff members. One of the directions included in the latest college Development and investment strategy (page 7 <https://www.rtk.lv/?sadala=203>) is regarding internationalization, that they will try to work on attracting lecturers and students from other countries, so they could use full ERASMUS potential. This aim with the current setting in the College will not be achieved. Scientific activity is very low and can't be used to attract foreign lecturers. Another issue is language barrier since study implementation language is Latvian and most of the students and staff members can not fluently speak in English. Since college does not have to confirm English language proficiency level of staff members, this statement is concluded based on all interviews all together. Almost all of the members during the interviews had to use the help of a translator. Incoming mobility of students is absent, there have not been any incoming students. Regarding outgoing mobility in the previous reporting period there has been only one student taking internship in Germany (SAR section 2.5.3.). Similar situation is with academic staff activities, college in annex "Ārvalstu stud\_mac\_sp" indicates that there have not been any incoming teaching staff as well. Therefore experts conclude that ERASMUS opportunities are not used to their full potential. It has to be taken into account that in this field there is only one study programme and it is held only in Latvian, so it is practically impossible to have incoming student mobility. Riga Technical college can consider creating some part of the study programme curriculum in English, for example the internship part, so students from abroad could visit Latvia's woodworking industry and potentially provide input about tendencies from abroad. No other available records or mentions during the site visit about systemic approach to attracting lecturers or students from abroad. This academic staff outgoing and incoming activity is also considered too low for higher education institution. Attendance of conferences or lifelong education courses can not be considered as cooperation activities.

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

Riga Technical college has agreements with different local partners, but only strong existing cooperation can be noticed with some employers that actively provide internship places for students. Collaboration with universities and scientific institutes to boost scientific research and study programme quality is lacking. College has indicated some collaborations with partners from abroad, but these connections are not often used. Since there has been only 1 occasion of student undergoing internship abroad and 2 cases of short term outgoing mobility for academic staff members, collaboration with institutions abroad are considered as absent. Riga Technical college has not developed a system for attracting foreign lecturers and students. Including potential foreign students or lecturers in the study process is difficult since the programme is implemented only in Latvian language. Overall cooperation activities in the college can be evaluated as low.

Strengths:

1. The College has a lot of partners in the industry to provide students with internships.

Weaknesses:

1. There is no system or plan for attracting foreign lecturers and students.
2. Collaboration in the field of science is absent.
3. Most of the connections that college has are based on mutual verbal agreements, these collaborations are not documented.
4. Incoming and outgoing mobility of students and academic staff members is very low and insufficient for the higher education institution.

### **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:** Partially compliant

The College is lacking international collaborations, the ones that are created are not sustainable and are not used very often. This is supported by absent incoming mobility for staff and for students and for only 2 short term outgoing mobilities for academic staff members and only 1 outgoing mobility among students in previous accreditation period. This also is limited by the fact that the study programme is implemented only in Latvian language. Locally Riga Technical college have good collaborations with employers, but also with serious limitations, employers are only providing internship places, not all of them are involved in improvement of the study programme and are not providing qualification work topics. Collaborations with RTU and LLU are almost non existent and are not used to their full potential. Academic staff members that are employed in other HEI or institutes does not count as collaborations. College has provided documents for great connections locally and abroad, but these connections and agreements are not related to this study field.

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

#### **Analysis**

1.6.1. In the previous assessment procedure (accreditation) in 2012 related to the study field and the corresponding study programmes (Joint report of experts about the RTC study field Material science, production and processing) several weaknesses were identified and recommendations for improvement made. By the experts opinion, contrary to what was mentioned in the "Report on the implementation of the recommendations of the study program "Woodworking" prepared by the RTC, only part of given recommendations are implemented to full extent:

- College has managed to improve assessment methods of learning outcomes, still more work has to be done to improve student self assessment processes and evaluation procedures within internships (SAR annex "Descriptions of study courses", also see section 1.1.5. of this report).
- College has not only substantially improved the structure and content of the study programme according to the recommendations given in the previous assessment, but also reacted to the recent changes in the occupational standard of qualification (additionally provided annex to SAR "Compliance of the "Woodworking" study program with the occupational standard").
- College has allocated additional financial resources and invested into infrastructure and material-technical resources, as it was recommended in the previous assessment (according to Development and investment strategy for 2021-2027 ("PROFESIONĀLĀS IZGLĪTĪBAS KOMPETENCES CENTRA "RĪGAS TEHNISKĀ KOLEDŽA" ATTĪSTĪBAS UN INVESTĪCIJU STRATĒGIJA 2021. - 2027.GADAM,

precizēta". Available in Latvian: <https://rtk.lv/?sadala=203>), also see section 1.3.1. of this report).

- College has not managed to substantially improve international and local cooperation with other HEI in fields of scientific work, research and development, mobility of students and academic staff (SAR section 2.5., also see 1.1.2., 1.4.3., and 1.5.1. sections of this report).

- A relatively small progress has been made within scientific publications, although there are a number of good quality RTC student diploma projects with a great potential for such publications to be made. Though, it must be noted, that some of academic staff are also employed at scientific research institutes, and publications they make within the field of wood processing are usually attributed to those institutes, as well as some students with best diploma projects are continuing their education in HEI, where these projects are further developed and scientific publications are made including those results that were developed at RTC (SAR section 2.4., also see section 1.4. of this report).

- Cooperation with employers has been improved, still it is more focused on internship processes, rather than improvement of the content and implementation of study programme. Communication with employers organizations is still more reactive than proactive (see section 1.5.1. of this report).

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

It is alarming, that contrary to information RTC provided in "Report on the implementation of the recommendations of the study program "Woodworking"", experts could identify that only part of given recommendations are implemented to full extent. Still the contribution of the college to the analysis of recommendations and their application to the specifics of the study field and the corresponding study programmes is evident.

Strengths:

1. College has implemented a number of very important recommendations and tackled weaknesses identified in previous assessment procedures, such as content of the study program and teaching/learning methodology.
2. Investments in material-technical resources have been made and are planned in future.

Weaknesses:

1. Small progress within fields of local and international cooperation related to research and mobility have been made.

### **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

College has implemented a number of very important recommendations and tackled weaknesses identified in previous assessment procedures, still there is no or small progress within fields of local and international cooperation related to research and mobility.

### **1.7. Recommendations for the Study Field**

#### **Short-term recommendations**

1. The identified flaws of measurable strategic development planning and implementation lead to a heavy management structure and ineffective decision-making processes which need to be improved.



2. SWOT analysis and its documentation insufficiently describe how self-identified threats and weaknesses will be strategically managed which need to be improved. .

3. The College doesn't give enough attention to how student self-assessment processes are carried out and methods are defined, as well as the assessment of internship results should be improved.

### Long-term recommendations

1. Create a self-sustainable system that is known for all involved parties (students, academic staff members, employers) for attracting foreign lecturers, students. Success of this system can be measured as incoming mobility, advertising College to the foreign partners, a certain person that is responsible for coordinating mobility, etc.

2. College has to involve scientific institutes, other partners in research activities that are relevant in this study field, at least one publication per year.

3. Start using and advertising exchange possibilities with all existing agreements between College and local or international partners.

4. Find foreign partners, where students could go for mobility. Create an academic staff motivation system, to promote gaining new experience abroad. Encourage students to attend outgoing mobility not only during the internship.

5. Revision of the division of responsibilities in the management structure of the study field should be done to balance the workload of the programme director of this study field and thus improve quality aspects of his tasks and responsibilities.

6. Continuous investments in support solutions for academic staff for the transfer of learning materials and methods in the digital environment are recommended.

7. Investments and improvements of cooperation in scientific work and research activities should be made.

8. For the next accreditation RTC should have a capable next level higher education management system established for teaching staff.

## II - "Wood Processing" ASSESSMENT

### II - "Wood Processing" ASSESSMENT

#### 2.1. Indicators Describing the Study Programme

##### Analysis

2.1.1. The First level professional higher education study programme "Wood Processing" (41543) is a study programme under the "Manufacturing and Processing" study field. The programme's name and syllabus complies with this study field. Study programme prepares specialists in wood production. Graduates have to be able to control the technical condition of woodworking equipment, plan and organize the repair of basic woodworking equipment and ensure compliance with environmental and labor protection legislation SAR page 39.

2.1.2. The First level professional higher education study programme "Wood Processing" (41543) after graduation awards students qualification - Woodworking technologist. The total volume of the

study programme is 100 CP which equals 150 ECTS. Study programme is held as full time studies and is 2 years 6 months long. To achieve tasks set by the professional standard the duration and scope of study programme is reasonable and justified. Admission requirements to enroll is Secondary education, taking into account that this is first level higher education level this requirement is appropriate. Implementation language is Latvian which also is justified based on specifics of the woodworking field in Latvia.

One of the programme goals is to "Promote skill and knowledge acquiring, attitude formation, that provides for student to get qualification and promotes their competitiveness in variable social and economical circumstances." obtained from SAR page 39. This goal can not be achieved fully due to several reasons. First of all, students indicated that in most cases their internship is held at a company where they have already been working for some time, so they don't have opportunity to get acquainted with different technologies, different environments, work approaches etc. elsewhere. This can not lead to obtained skill competitiveness, since students have not seen different approaches in different companies. Also, this goal can not be achieved with outdated methodological materials and literature. (See more in section 2.5. point 3.).

One of the tasks of the programme is as follows: To make applied research in the working field, organize student conferences and to publish the results (SAR page 39). College has identified in several annexes and SAR that they are not focusing on research activities, which also can be observed in only a few scientific articles in this study field. During the site visit experts also got confirmation that there is lack of scientific research in the College and this issue has not been resolved since previous accreditation where experts included relevant recommendations. The amount of applied research is too low for higher education institution.

Another task of the study programme: To provide participation of employers in design of content of studies and organization of qualification exams (SAR page 39). It is irrelevant, study programme tasks should focus on students - how to provide the knowledge and practical skills, not how to involve stakeholders into evaluation of qualification exams. During the interviews several employers also could not state examples how they have influenced the study programme syllabus.

The statement from SAR page 40 that the study programme of woodworking provides the competitiveness and professional growth opportunities of the graduates is overrated since only 43% (Based on annex. P5\_studentu\_statistika) of enrolled students acquire qualification.

To highlight inconsistency between study programme goals, tasks and outcomes here is summary based on SAR pages 39-40:

First study programme goal is: To prepare students for working in wood production according to 4. level of qualification of wood production technologie standard and first level higher education requirements, that are capable to do work, can organise and manage stuff. This goal can be achieved with the task : To provide a process of studies with metodic material, to develop material and technical basis with modern technical equipment and modern equipment. Although, most of the study literature can be considered outdated. This also is not helping to fully achieve programme learning outcomes of knowledge in woodworking.

Second study programme goal is: Promote skill and knowledge acquiring, attitude formation, that provides for student to get qualification and promotes their competitiveness in variable social and economical circumstances. This goal is not supported by any task. And outcomes from this goal also are poorly achieved first of all because more than 50% of students which do not obtain qualification.

Third study programme goal is: Create motivation for professional development and continuing education in engineering or other areas and to give students the possibility to get higher professional education. This study programme goal also is not supported by any tasks. Also based on interviews with study programme directors, QA system representatives' abundance of graduates do not pursue next education levels in other HEI.

There are two other study programme tasks:

"To provide participation of employers in design of content of studies and organisation of qualification exams." Employers are involved in evaluation of qualification papers, but they could not name any examples of how they have influenced study programme syllabus. So it is hard to track outcomes from this task.

"To make applied research in the working field, organise student conferences and to publish the results." Scientific research and collaboration with other scientific institutes is very poor, refer to section :scientific research and artistic creation. Study programme outcomes also mostly are focused on obtaining practical skill rather than developing applied research skills to boost students' confidence to continue studies in higher education levels.

In SAR page 39 study programme results are divided in sections which are as follows knowledge, skills and competencies. In total there are 18 results described which are relevant to the study programme but they have to be reduced below 10 to be more precise and specific. College has to make sure that these section do not overlap with each other and give a clear view of achievable learning outcomes in this study programme. For example knowledge of environmental protection, occupational safety, fire safety and hygiene requirements can be joined with skill -is able to critically evaluate risk factors and offer solutions. All indicated study programme results are more focused on practical implementation and are not corresponding to tasks set by study programme. Therefore study programme aims, objectives, results are not closely interrelated.

2.1.3. Professional standard "Kokapstrādes tehnologa profesijas standards" has been updated in 11th August 2021. (<https://registri.visc.gov.lv/profizglitiba/dokumenti/standarti/2017/PS-157.pdf>) in SAR 3.1.1. section it is mentioned that the study programme has been modified in accordance with the new standard, but no examples have been provided. During the site visit, the programme director mentioned that there was a study course in electric technologies, and this course has been changed to computer sciences. These changes were appropriate and helped to improve the study programme, students and academic staff members also supported this statement. During the interviews with academic staff members another issue arose, there is a lack of system and procedures how changes in study courses are implemented. There is no available documentation of any changes in the programme syllabus, and how these changes are reviewed or approved.

2.1.4. Study programme has a unique position in the labor market, since this is the only higher education institution that provides 1st level professional education in the woodworking field SAR section 2.1.1. page 14. During the visit employers confirmed that specialists with qualification in woodworking technologist are still highly needed in the industry. Based on annex P5\_studentu\_statistika each year enrolled student count is decreasing. This trend can lead the programme to a situation where it is not rentable. College representatives during the site visit could not provide any numbers or student amount that is necessary for the programme to be rentable or profitable. Regarding the student employment there are no issues, SAR 3.1.3. section, alumni, students, college administration all indicated that after the studies every graduate is employed and more than 90% in the field of woodworking. More detailed analysis for economic substantiation of the programme is lacking in SAR section 3.1.3.

2.1.5. N/A

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

Study programme "Wood Processing" complies with the study field of "Manufacture and Processing". Study programme aims, tasks, are not closely related to each other and with current scientific activity, implementation of the programme can not be fully achieved. The drop out rate of the students is very high. Only information about changes in the study programme were obtained from the interviews. So it is hard to tell if any implemented changes have been in fact implemented and analyzed. Student count in the programme is declining. Alumni are demanded in the labor market. In accordance to available information and site visit all of the graduates are employed, in most cases

closely related to the study field.

Strengths:

1. Study programme has a unique position in providing first level professional education in the field of woodworking.
2. High level of employment of graduates more than 90%

Weaknesses:

1. Study programme aims, tasks, outcomes are not closely related and can not be fully achieved .
2. Study programme results should be reduced below 10.
3. Documentation that is provided for the study programme is incomplete or not provided at all.
4. Study programme has a very high dropout rate of students.
5. The corrections made to the study programme's parameters within the assessment of the study field are not analyzed
6. SAR lacks any analysis about social and economical justification of the study programme.

## **2.2. The Content of Studies and Implementation Thereof**

### **Analysis**

2.2.1. The review of the detailed description of the study course confirmed that the content of the programme is topical in the professional skills segment: subjects cover the knowledge required by the study field and meet the needs of "Wood Processing". The detailed description of the study course describes a wide range of specific knowledge offered by the College which is based on the use of CNC machines, wood construction and design, machinery, CNC programming, technical mechanics and measurements, automation, CAD/CAM design (AIKA e-platform. Annexes: III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof. Studiju kursu apraksti-KOKAPSTRĀDE-EN.7z). The content of the study courses corresponds to the objectives of the programme and ensures the achievement of theoretical learning outcomes ( AIKA. e-platform. Annexes. III - Description of the Study Programme - 3.2. The Content Of Studies and Implementation Thereof. III - Description of the Study Programme - 3.2.The curriculum of the study programme (for each type and form of the implementation of the study programme)) .

They also cover knowledge about mechanical and physical properties, microscopic and macroscopic structure of wood which is very important for getting a basic knowledge about wood material. But for strengthening the quality of lecture scope in mechanical and physical properties, microscopic and macroscopic structure, it should be used a microscope tool and volume of preparations as are basic cross-sections of microscope slides of different tree species of soft and hardwood and also tropical wood. (Questionnaire - Agenda of experts' visit group: Meeting with the academic staff of the study programme).

The subjects "Material studies" and "Woodworking chemical technologies" are divided into three semesters in an appropriate range of hours (AIKA e-platform. Annexes: III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof. Studiju kursu apraksti-KOKAPSTRĀDE-EN.7z).

The strengths of the study programme is the amount of practical-oriented hours accomplished in labs.

In study subject "Material studies" where the "Course calendar" (point 8) is described, class topic of "Finishing materials for woodworking" should be more detailed divided on academic hours in fact it has 20 lectures academic hours and 6 practical academic hours where is not more detailed described as topic of surface treatment should be.

The content of the study courses is interconnected and complementary as seen in the objectives of the study programme - they cover the necessary knowledge in the study programme according to

the documents Detailed description of the study course. For example, study courses “Materials learning” and “Wood processing and equipment” are parallel integrated in the first and second study course (AIKA e-platform. Annexes. III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof. The curriculum of the study programme (for each type and form of the implementation of the study programme)). In the detailed description of the study course the “Study course structure” of each subject is clearly defined in point 3 (semester, credit points, lectures/practical/individual study academic hours and type of assessment). In the same document the “Intended learning outcomes” are also clearly defined in point 7, point 8 describes the “Course calendar” (class topics of the subject are divided into academic hours) (AIKA e-platform. Annexes: III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof. Studiju kursu apraksti-KOKAPSTRĀDE-EN.7z). According to the plan of the study programme there is no distinction made between mandatory and optional study courses and it is requirement by Law On Higher Education Institution.

The content described in the Detailed description of the study course is practical-oriented for the industry in fact subjects such as CNC programming and CAD CAM are taught and Internship in company is accomplished and offers a quick employability - all students after graduation are employed (Questions - Agenda of experts' group visit, Preliminary feedback: point 6). Partly (practical skills and knowledge) as well as meets the needs of industry and labor market according to the employer's interview during the experts meeting at RTC. Graduates obtain competences relevant for the employers and the needs of the society - local and regional. At the end of March 2022, the registered unemployment rate was the lowest in Riga (4,6 %) and the Riga region (4,7 %): [https://ec.europa.eu/eures/public/living-and-working/labour-market-information/labour-market-information-latvia\\_en](https://ec.europa.eu/eures/public/living-and-working/labour-market-information/labour-market-information-latvia_en) . The objectives described in the study programme are relevant for the local and regional environment where the college is located. Only issue is that the “Wood Processing, 41543” study programme of compulsory and recommended literature is generally outdated and mostly local origin ( AIKA. e-platform. Annexes. III - Description of the Study Programme - 3.2. The Content Of Studies and Implementation Thereof. III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof). There are very few sources of nowadays literature - of years 2017-2022 and international literature - 6.

During the interview with the teaching staff it was said that the College monitors the delivery of the study programme, reviews and improves it by taking into consideration the development of study, scientific, professional, research field and disciplines - development of the profession. But the content of the study courses slightly corresponds with scientific trends, for example, study course “Wood processing chemical technologies” is with applied science approach in wood base engineered materials ( AIKA. e-platform. Annexes. III - Description of the Study Programme - 3.2. The Content Of Studies and Implementation Thereof. III - Description of the Study Programme - 3.2. The curriculum of the study programme (for each type and form of the implementation of the study programme)) . According to the teaching staff interviews the students are slightly involved in the applied research process but only by guest lecturer in his study field and students rarely visit RTU and LLU MEKA laboratories. The study programme content complies with professional qualification requirements in professional skills and knowledge segment. The Automated design systems (CAD, CAM, CAE) and CNC practice is a good example of the study programme. (<https://registri.visc.gov.lv/profizglitiba/dokumenti/standarti/2017/PS-157.pdf>).

The changes and updates of the programme are made according to the study programme objectives and connection of its content and courses. Lecturers are allowed to change the content according to their experience and following the steadily changing trends of the market (Questionnaire - Agenda of experts' visit group: Meeting with employers for study programme).

Sustainability of the programme referring to the environment is shown by the fact that the results and outputs of the programme are durable.

2.2.2. Not applicable.

2.2.3. The study implementation methods contribute to the achievement of the aims in the sphere of wood mechanical processing which is to train students for independent and high quality work and to practical know-how skills improvement, for example, CNC and CAD/CAM systems are methodically upgraded and the results are published in the proceeding article (A.Stamers, K.Stekelis "Analysis of Computer Programs Used in Woodworking Industry". (Since 2003, Collage has been organizing the international scientific – practical conference, HIGHER VOCATIONAL EDUCATION IN THEORY AND PRACTICE and issuing volumes of scientific articles. <https://rtk.lv/?sadala=470>).) . The objectives are clearly defined in the detailed descriptions of the study course (point 6; Objectives of the study program) and they are relevant for training students for independent and high quality work. The study implementation methods are described in each Detailed description of the study course (point 8; Course calendar: the class topics, the class type and the number of hours) for achieving the aims and the learning outcomes (AIKA e-platform. Annexes: III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof. Studiju kursu apraksti-KOKAPSTRADE-EN.7z). In fact the study programme involves for 1 credit point 40 academic hours divided into 20 contact academic hours and 20 individual work academic hours per week of practical oriented work which is the strength of the programme itself (AIKA e-platform. Annexes: III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof. P9\_studiju plans\_2021\_ENG.xls).

In the detailed description of the study course the indented study results are described (point 7; Intended study results) and relevant information about criteria for the assessment of learning outcomes are given. Good examples are the following subjects:

Machinery components and transportation equipment and  
Automated design systems (CAD, CAM, CAE)

which additionally describe criteria for assessments such as lecturers' attendance (ex. 95 - 100%), accomplished tasks of seminar works and independent task covering all the topics must be completed (ex. 50% of the topics must be completed correctly in a specific job). As an example the criteria is additionally described above it is also necessary to improve the criteria for assessment of the following course descriptions down below - a tabular form description of 10 points scale is not enough (AIKA e-platform. Annexes: III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof. Studiju kursu apraksti-KOKAPSTRADE-EN.7z):

- Programmable controllers,
- Woodworking machine practice,
- CNC programming,
- Woodworking chemical technologies
- Technical measurement in woodworking
- Wood product design
- Material studies

The programme focuses also on the individual work of the student which is considered as a method to achieve learning outcomes and contributes development a mentally independent, responsible and creative personality. In fact lecturers offered student the opportunity to choose a topic (related to the respective course descriptions and literature) that will be discussed in more detail and to take a deeper interest in topic that are relevant for students. Individual work is represented by the student where he also improves presentation skills, which are essential for the defense of the qualification paper (Additional questionnaire - Agenda of experts' visit group: Akreditācijas - papildinājumi\_1\_4\_punkti).

2.2.4. An Internship in the company is foreseen during the study programme and it lasts 200 hours, accomplished during the 4th semester when students already have a practical knowledge of production technological processes, equipment, tools, devices and apparatus.

Experts think that the Internship in the company of 200 hours of working with machines and tools in the technological process is relevant. In fact the study programme is clearly practical oriented

according to the “Detailed description of the study course”. In fact there are four study subjects focused only on practical work which are separated on semesters. The number of practical hours are separated: in the 2nd semester “Woodworking machine practice” - 120 practical work (academic hours); in the 3rd semester “Internship CNC” - 120 practical work (academic hours); in the 4th semester “Internship in the company” - 200 practical work (academic hours); in the 5th semester “Qualification practice” - 200 practical work (academic hours) (AIKA e-platform. Annexes: III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof. Studiju kursu apraksti-KOKAPSTRADE-EN.7z). Those hours are accomplished both in the College laboratories and in the company.

The organization and the administration of the practical training is appropriate for its aims. In description of the organization of the internship of the students (Macibu practice organization) are formal described rules of engagement between College and company in five main points: the way of implementation the course of practice, practice organization documents and duties of the practice manager, laws and rights of the place of practice, intern's rights and duties and Assessment practice (AIKA e-platform. Annexes: III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof. Mācību prakses organizēšana.pdf).

In the meeting with the College management the representatives said they have agreements signed with 3 parties. They also mentioned some sort of site where students can obtain information about internship places. The College receives information from employers as well about possible job opportunities and informs students about the options. (Questionare - Agenda of experts' visit group: Meeting with the members of the group responsible for the preparation of Self-Assessment Report and QA system related issues).

In the meeting with the College management the representatives indicated how they choose the internship places. In fact College provides a list of work in a place. Also where students are working, they can easily combine internships (Questionare - Agenda of experts' visit group: Meeting with students of the study programme).

The objectives of the internship are relevant for the study course. Details about content are given in “Detailed description of the study course” of “Internship in a company” in point 8 “Course calendar” and more specifically in class topic and class type. Students learn about technological process of the production plant, working with woodworking machines and work organization and safety equipment. The tasks of students during Internship in a company are described in point 9 (Criteria for the assessment of the learning outcomes) and are relevant for the study course. Students accomplished internship report.

The goals are described in point 6 (Objective of the study program) in fact the students are acquainted with the structure of a particular company, the work to be preformed and the services provided, also they get acquainted with production technological processes, equipment, tools, devices, etc.

The learning outcomes are described in point 7 (Intended study results) . The focus is on providing skills in the analysis of the technological process of the factory, skills in working with machine tools in their setup and regulation.

In the meeting with the College management the representatives said that internships are evaluated by the employer supervisor and students have to defend their internship in college under supervision of the study programme director.

Weakness is that the criteria of learning outcomes for study subject “Internship in the company” and “Qualification practice” should be improved. The student should be assessed on a 10 point scale.

2.2.5. Not applicable to college study programmes.

2.2.6. The topics of students' final theses are relevant to the “Woodworking” study field and correspond to the study programme. The topics include engineered wood materials, CNC and optimization technologies, finishing systems, transport and logistics. For example, in 2019

conference proceedings - Volume 16 there are only two articles K. Berens, K.Stekelis, U.Grinfelds "Making Process of oil-based Finishing Material" and A.Stamers, K.Stekelis "Analysis of Computer Programs Used in Woodworking Industry". (Since 2003, Collage has been organizing the international scientific - practical conference, HIGHER VOCATIONAL EDUCATION IN THEORY AND PRACTICE and issuing volumes of scientific articles. <https://rtk.lv/?sadala=470>).

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

The review of the detailed description of the study course confirmed that the content of the programme is topical - study subjects cover the knowledge required by the study field and meet the needs of woodworking. The content of the study programme is topical in the professional skills segment. The content of study courses is interconnected and complementary. The study programme is clearly practical oriented according to the detailed description of the study course. Also the number of practical hours are accomplished both in the school labs and in the company. The content of the study courses is interconnected and complementary as seen in the objectives of the study programme. Sustainability of the programme referring to the environment is shown by the fact that the results and outputs of the programme are durable. But it is noted that two study subject (Internship in the company and Qualification practice) are not marked with 10 point scale assessment. The aims are clearly defined in the detailed descriptions of the study course and meet the needs and expectations of employers. But in the study subject "Material studies", class topic Finishing materials for "Wood Processing" should be more detailed described in fact it has 20 lectures academic hours and 6 practical academic hours where no detailed topic is described as topic of surface treatment should be.

#### **Strengths:**

1. The amount of practical-oriented hours accomplished in laboratories are with emphasis-.
2. The theoretical and practical content of study courses is interconnected and complementary.
3. The content is practical-oriented for the industry - CNC programming, CAD CAM, Internship in company and other and offers a quick employability - all students after graduation are employed.
4. The study programme involves 40 academic hours (divided into 20 contact academic hours and 20 individual work academic hours) per week of practical -oriented work which is the strength of the programme itself.

#### **Weaknesses:**

1. In study subject "Material studies" where the "Course calendar" (point 8) is described, class topic Finishing materials for "Wood Processing" should be more detailed divided in fact it has 20 lectures academic hours and 6 practical academic hours where no detailed topic is described as topic of surface treatment should be.
2. There isn't enough cooperation with enterprises outside Riga as far as the organization of internships is concerned.
3. There are very few sources and references of nowadays literature (2017-2022) and international literature.
4. According to the plan of the study programme "Wood Processing" there is no distinction made between mandatory and optional study courses.
5. In the subject "Internship in the company" and "Qualification practice" where the criteria of learning outcomes (point 9) is described the students are not marked on a 10 scale assessment. Weakness is because the student doesn't get a visible mark as assessment and it is not considered in his final assessment mark (must influence on average rating of final assessment).

### **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

Not applicable.

## 2.3. Resources and Provision of the Study Programme

### Analysis

2.3.1 The study provision complies with the specific conditions for the implementation of the study programme and creates prerequisites for the achievement of the learning outcomes and indicates the possibility to ensure a high-quality study process and future employability.

As was observed during the expert visit and interviews with teaching staff and students RTC combines the available resources and knowledge from other study fields and programs in the implementation of the assessed study field and study program. Students have opportunities to use resources from, for example, metalworking, electronics, mechatronics, engineering mechanics, etc. - study programs that significantly improve future woodworking technologists' understanding of production processes and technologies. In the expert opinion there are enough lecture rooms and laboratories for practical work, but there were no facilities identified by experts specifically for science and research purposes. RTC SAR section 2.4.1. confirms that scientific and research work is not in the focus of this study program.

The study programme offers a wide scope of technical/technological subjects important for companies' needs on the market. In fact the following study subjects are: Programmable controllers, Woodworking machine practice, CNC programming, Technical measurement in woodworking, Wood product design, Wood manual processing and equipment, Automated design system, Woodworking automation etc. (AIKA e-platform. Annexes: III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof. P8\_studiju kursu kartējums\_Eng.doc).

As has been seen at College visit, laboratory is well equipped with woodworking machines which support a wide scope of technical/technological woodworking topics.

The provision complies with the specific features of the study programme - lecture-rooms are provided with computers, internet, clerical aids, textbooks, audio-video equipment, CAD/CAM programme, computer graphics programmes for the creation of 2D and 3D objects, CNC software Mastercam (CPV tools). Academic staff and students in their study and scientific work can use digital book index, Google Scholar, Research gate, OAPEN on-line library.

The informative provision also complies with the specific feature of the study programme. As seen during the experts' group visit Moodle is used as the main tool for lectures and exercises. Students arrive very well prepared for online work. Moodle as a Course Management System (CMS) is designed based on known pedagogical principles to help the educators in creation of effective online learning communities. Moodle is a free platform under the GNU Public License which is used by the College and was presented in details during the experts' group visit in College (<https://muu.rtk.lv/login/index.php>). The library is included in the unified state library information system, which envisages performing library processes in the automated information system SCHOOL ALISE (<https://www.rtk.lv/?sadala=432>). Computerized processing and books catalog is used in the library. Readers are able to search for the necessary publications both on-site and remotely via the internet (<https://www.rtk.lv/?sadala=432>).

In the detailed description of the programme almost all subjects propose a compulsory or recommended literature in English. Weakness is that the following subjects down below do not propose neither a compulsory neither a recommended literature in English (AIKA e-platform.

Annexes: III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof. Studiju kursu apraksti-KOKAPSTRADE-EN.7z):

- Basics of research work
- Material studies
- Basics of construction of wooden products
- Technical mechanics and wooden construction
- Machinery components and transportation equipment

Experts recommend adding books in English as compulsory literature for these subjects.

Material and technical provision complies with the feature of the study programme. During the experts visit it was seen that the College laboratories are well-equipped - have the newest technology machinery for wood procession enough for the number of practical hours accomplished. For example machines used in laboratories are thicknesser, CNC machines, spindle moulder, circular panel saw, membrane press for 3D, jointer, bandsaw, drill press etc.

From questionnaire during the experts' visit the academic staff said they are using microscopes in chemistry but in woodcraft study subjects they are looking in general (macroscopic) structure of wood material (Questionnaire - Agenda of experts' visit group: Meeting with the academic staff of the study programme). Microscopes, tools, volume of preparations - cross-section of microscope slides of different tree species of soft and hardwood and also tropical wood should be used at study course "Material studies".

2.3.2 N/A

2.3.3. As the Riga Technical Colleges has only one study program in this study field, the analysis of this criteria is covered in sections 1.3.1. and 1.3.2. of this report. The state grant fully covers the costs of the study process. The amount of the state grant is distributed on the basis of the student place costs specified in the regulatory enactments of the Republic of Latvia (SAR section 2.3.1.). In SAR there are no available calculations on what is the optimal student amount in the study year or per group for the programme to be rentable.

As it is stated in the Development and investment strategy for 2021-2027 ("PROFESIONĀLĀS IZGLĪTĪBAS KOMPETENCES CENTRA "RĪGAS TEHNISKĀ KOLEDŽA" ATTĪSTĪBAS UN INVESTĪCIJU STRATĒGIJA 2021. - 2027.GADAM, precizēta". Available in latvian: <https://rtk.lv/?sadala=203>)), during the period from 2016, RTC has invested in equipment and inventory modernization from state and EU funding, and until 2027 RTC are planning to increase investments about four times. The specification of the planned investments show that it would be equipment for practical training. There are no plans on investments in equipment needed for science and research. It must be noted that availability of any funding mainly is the responsibility of the Ministry of Education and Science Republic of Latvia rather than the College.

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

The study provision, informative provision (including library), material and technical provision and financial provision comply with specific features and the conditions for the implementation of the study programme, create prerequisites for the achievement of the learning outcomes, but lacks the aforementioned in the provision in scientific and research work, that is needed to ensure a high-quality study process. The funding available to the study programme, funding sources and the use of funding ensures full implementation of the study process, but there are no calculations available to identify the profitability of the study programme.

The study provision complies with the specific conditions for the implementation of the study programme and creates prerequisites for the achievement of the learning outcomes and indicates the possibility to ensure a high-quality study process and future employability.

The study provision complies with the specific conditions for the implementation of the study programme.

Laboratories are well equipped with woodworking machines which support a wide scope of technical/technological woodworking topics. They have technology machinery for wood procession. For example some of the machines used in laboratories are thicknesser, CNC machines, spindle moulder, circular panel saw, membrane press for 3D, jointer, bandsaw, drill press etc.

#### Strengths:

1. The study programme offers a wide scope of technical subjects important for companies' needs on the market. In fact the following study subjects which are focus on technical and technological scope of knowledge are: Programmable controllers, Woodworking machine practice, CNC programming, Technical measurement in woodworking, Wood product design, Wood manual processing and equipment, Automated design system, Woodworking automation
2. RTC has made investments in the development of the material and technical provision of the study area, and in its investment strategy it foresees significant financial investments in the future.
3. RTC effectively uses the material and technical base at its disposal and the competences of teaching staff to create synergy of the evaluated study direction and program implementation with other study directions and programs.

#### Weaknesses:

1. No investments are planned for basic science and research work at the RTC. For strengthening the quality of lecture scope "Material studies" it should be used microscope tools and volume of preparations – cross-section of microscope slides of different tree species of soft and hardwood and also tropical wood. Also the equipment for evaluating different mechanical properties of wood materials was not noticed during the experts' visit.
2. Several study courses do not include the industry's latest mandatory or recommended English literature.

### 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:** Partially compliant

The study provision complies with the specific conditions for the implementation of the study programme and effectively uses the material and technical base at its disposal and the competences of teaching staff. Though there is a lack of technical provision for scientific and research work, as well as availability of industry's latest international literature in some study courses.

## 2.4. Teaching Staff

### Analysis

2.4.1. The qualification of the teaching staff members involved in the implementation of the study programme partly complies with the requirements for the implementation of the study programme. According to CV data one person has first level higher education and teaches "Organizational psychology" courses. She is an assistant and does not have a scientific and academic degree. From 2015 till 2020 she visited six professional training courses in her subject field. Compliance with Law on Higher Education Institutions and Cabinet Regulation No. 147 regulatory requirements is insufficient (1,8). Second person with first level higher education teaches "CNC programming" courses. He is a guest assistant and does not have a scientific and academic degree. From 2013 till

now he has been working in "ABPLANALP BALTICA" LTD as CNC specialist. Third person has first level higher education and teaches "Programmable controllers" and "Woodworking automation" courses. He is a guest assistant and does not have a scientific and academic degree. From 2014 till 2015 he got work experience in companies with automatisisation related activities. Compliance with Law on Higher Education Institutions and Cabinet Regulation No. 147 regulatory requirements is insufficient. Fourth person has a bachelor degree in economics and teaches "Labor protection" courses. She is a guest assistant and does not have a scientific and academic degree. From 2006 till now she has been working as labor safety specialist in "Latvijas meliorācija" LTD. Compliance with Cabinet Regulation No. 147 regulatory requirements is insufficient. Fifth person has first level higher education and teaches "Woodworking machinery practice" courses. He is an assistant and does not have a scientific and academic degree. From 2011 till 2015 he visited four professional training courses in his subject field. Compliance with Law on Higher Education Institutions and Cabinet Regulation No. 147 regulatory requirements is insufficient. Sixth person has first level higher education and teaches "CNC practice" courses. He is an assistant and does not have a scientific and academic degree. From 2004 till 2011 he visited four professional training courses in his subject field. From 1986 till 1991 he has been working as lathe operator in "Inženiertehnoloģiskais centrs" LTD. Compliance with Law on Higher Education Institutions and Cabinet Regulation No. 147 regulatory requirements is insufficient. Other twelve academic staff members have Master or Phd degrees. The practical skills (wood technologies, machinery, materials, CNC, CAD, CAM) and knowledge (AIKA e-platform. Annexes. II - Description of the Study Field - 2.3. Resources and Provision of the Study Field. Biographies of the teaching staff members) of academic staff in general is good but does not meet the requirements of regulatory enactments (Law on Higher Education Institutions and Cabinet Regulation No. 147 (Dated 27 February 2007) 'Statute of the vocational education competence center "Riga Technical College"). One academic staff member has bachelor degree and 5 vocational academic staff members have first level vocational higher education which is the same level with study program "Wood Processing" graduates (AIKA e-platform. Annexes. II - Description of the Study Field - 2.3. Resources and Provision of the Study Field. Biographies of the teaching staff members).

In the Law on Higher Education Institutions section 39. it is written: "Academic Staff of Vocational Study Programmes By taking into account the necessity to acquire practical skills and knowledge, the position of a docent, lecturer, and assistant in the subjects of the vocational study programme profile may be held by a person with higher education without the doctoral degree or without vocational Ph. D. in Arts if he or she has sufficient practical work experience corresponding to the subject to be taught. In order to elect a person in a position of a docent who has no doctoral degree or vocational Ph.D. in Arts, such a person requires at least a seven-year practical work experience. The requirements to be defined for the candidates of such position of a docent shall be approved in a higher education institution and college by the senate or council accordingly. Lecturers and assistants who do not have a scientific and academic degree need a five-year practical work experience corresponding to the subject to be taught."

Also RTC operates based on Cabinet Regulation No. 147 (Dated 27 February 2007) 'Statute of the vocational education competence center "Riga Technical College"' where it is written:

33. Academic staff shall be composed of:

33.2. Lecturer;

33.3. Assistant.

35. A person with a doctorate or a master's degree may be elected to academic posts.

2.4.2. The college does not purposely take measures to actively take changes to the composition of academic staff. There have been no active changes in academic staff in the last 10 years and could impact stagnating the quality of study programmes (AIKA e-platform. Annexes. II - Description of the Study Field - 2.3. Resources and Provision of the Study Field. Biographies of the teaching staff

members). The courses and teaching staff quality emphasis on practical and theoretical skills and knowledge. There are signs of a disproportionate academic capacity for an assistant professor (also head of department) handing out six courses “Wood machining and equipment, Basics of construction of wooden products, Technical mechanics and wooden building structures, Forest trade science, Ergonomics, Engineering graphics” (AIKA e-platform. Annexes.II - Description of the Study Field - 2.3. Resources and Provision of the Study Field. Basic information on the teaching staff involved in the implementation of the study field). Also there is no clear system how the College finds academic staff replacement with needed qualification if, for example, somebody leaves his position. They do not in general actively and purposely promote applied research in “Wood Processing” study programmes.

2.4.3. Not applicable.

2.4.4. Not all members of the academic staff in the last six years have published in peer-review editions, including international editions (AIKA e-platform. Annexes. II - Description of the Study Field - 2.3. Resources and Provision of the Study Field. Biographies of the teaching staff members) in accordance with the Law on Higher Education Institutions. According to CV data, the person who teaches “Psychology of organizations” has published three proceeding articles in the RTC international conference (Volume 8, 9, 11.). All articles correspond to the subject that lecturer is teaching. Person who teaches “Higher Mathematics” is visiting docent and her main workplace is at RTU where she is senior researcher. She has local and international publications (Scopus). All articles correspond to the subject that the lecturer is teaching. Person who teaches “Business economy” has published three proceeding articles in the RTC international conference (Volume 14, 15, 16.). All articles correspond to the subject that the lecturer is teaching. Person who teaches “Basics of research work” has published one proceeding article in the RTC international conference (Volume 16.). Only five of eight compulsory general education courses academic staff have published in peer-review editions, including international editions and do meet the requirements of regulatory enactments (AIKA e-platform. Annexes. II - Description of the Study Field - 2.3. Resources and Provision of the Study Field. Biographies of the teaching staff members). According to the College representative (Mr. K. Štekelis) given information (during a meeting at College) the vocational academic staff have very low motivation to achieve the next level of higher education because their priority is to approach practical knowledge and skills training. And also added (Mr. K. Štekelis) that the vocational academic staff have very low motivation to achieve results in applied science and write publications.

According to CV data, the person who teaches “Chemical woodworking technologies” is visiting docent and his main workplace is at Latvian State Institute of Wood Chemistry where he is head of cellulose laboratory. He has local and international publications (Scopus). Person who teaches “Wood machining and equipment, Basics of construction of wooden products, Technical mechanics and wooden building structures, Forest trade science, Ergonomics, Engineering graphics” is assistant professor in RTC and has published eight proceeding articles (2007-2019). Person who teaches “Basics of quality and management” is assistant professor in RTC and has published one proceeding article in the RTC international conference (Volume 16.). Only three of twelve industry education courses academic staff have published in peer-review editions, including international editions and do meet the requirements of regulatory enactments (AIKA e-platform. Annexes. II - Description of the Study Field - 2.3. Resources and Provision of the Study Field. Biographies of the teaching staff members).

Only eight of eighteen academic staff members are practical proceeding with applied research and publishing articles and do meet the requirements of regulatory enactments. The best scientific publications results have compulsory general education staff members which correlate with the high percentage of academic staff's education level and activities in their applied research field (Phd and Mg.). College employs four assistants (CNC Practice, Woodworking machine practice, Programmable controllers, Woodworking automation, Psychology of organizations) who do not have a scientific and

academic degree and need a five-year practical work experience corresponding to the subject to be taught. (AIKA e-platform. Annexes. II - Description of the Study Field - 2.3. Resources and Provision of the Study Field. Biographies of the teaching staff members).

2.4.5. During the expert visit in RTC at teaching staff interview, it was established that the study programme activities were analyzed monthly at the department meeting acknowledging progress of study processes issues and on the mutual cooperation development opportunities. It ensures the achievement of the aims of the study programme and the interconnection of the study courses within the study programme.

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

Academic staff comprises 18 members and only 12 are suitable for academic positions according to Law on Higher Education Institutions and Cabinet Regulation No. 147. One academic staff member has bachelor degree and 5 vocational academic staff members have first level vocational higher education which is the same level with study program "Wood Processing" graduates. College employs four assistants who do not have a scientific and academic degree and need a five-year practical work experience corresponding to the subject to be taught. The study programme activities were analyzed monthly at the department meeting acknowledging progress of study processes issues and on the mutual cooperation development opportunities.

#### **Strengths:**

1. The practical skills and knowledge of academic staff is good.
2. The academic staff is very active in practical skills and knowledge development.

#### **Weaknesses:**

1. The vocational academic staff have very low motivation to achieve the next level of higher education.
2. The vocational academic staff have very low motivation to achieve results in applied science and write publications.
3. Only eight of eighteen academic staff members have written proceeding articles.
4. The 5 of 18 professional studies teachers staff has first level higher education that affects the quality approach to the applied research studies and publications.
5. College employs four assistants who do not have a scientific and academic degree and need a five-year practical work experience corresponding to the subject to be taught.

### **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 academic staff comprises 18 members and only 12 are suitable for academic positions according to Law on Higher Education Institutions and Cabinet Regulation No. 147. One academic staff member got a bachelor degree and 5 vocational academic staff members got first level vocational higher education which is the same level with study program "Wood Processing" graduates. The college employs four assistants who do not have a scientific and academic degree and need a five-year practical work experience corresponding to the subject to be taught (AIKA e-platform. Annexes. II - Description of the Study Field - 2.3. Resources and Provision of the Study Field. Biographies of the teaching staff members).

## 2.5. Assessment of the Compliance

### Requirements

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

**Assessment of compliance:** Partially compliant

Study programme "Wood Processing" (41543) partially complies with the First Level Professional Higher Education Standard regulated by Cabinet of Ministers No. 141. Total study programme duration is 2 years and 6 months and volume is 100 CP equivalent to 150 ECTS. CP are allocated as follows: 20 CP for Compulsory general education courses; Internship 16 CP; Industry related study courses 55 CP and Qualification work 9CP. Standard requires 6CP module in business and entrepreneurship, but according to Annex : P6\_atbilstiba valsts standartam\_ENG only 3CP are allocated for this purpose. According to the same annex there is no differentiation for elective courses and industry related study courses, which is demanded from the State standard and Law of Higher Education institutions 55. article. This annex also indicates study course sport with 0 CP, it is impossible to have a study course with 0 CP.

- 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

College has provided annex:P7\_atbilstiba standartam\_jauna versija which compares study programme study courses with professional standard "Kokapstrādes tehnologa profesijas standards" has been updated in 11th August 2021.

(<https://registri.visc.gov.lv/profizglitiba/dokumenti/standarti/2017/PS-157.pdf>)

- 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

Study course descriptions are prepared in latvian language, they include most of the basic necessary information in accordance with requirements set in the Law on Higher Education Institutions. Unfortunately in all study course descriptions it is impossible to distinguish who is responsible for the study course creation and syllabus and who is implementing (teaching) the subject. There is no indication in the study course descriptions about their type - mandatory, elective, restrictive elective. College also should consider creating a unified template for all study course descriptions to make them more synchronized. There is a different approach on how evaluation of students is described in each study course description. From a student perspective this can be very confusing that in each study course there are different requirements to pass the course. All of these inconsistencies should be eliminated.

In most of the cases mandatory literature is older than 10 years, modern and up to date literature is required to ensure a high quality study process.

There is also a study course description in Sports with 0 CP - there can't be study courses without CP.

- 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

Only 1 of 4 pages of diploma is provided in the annexes: A-K\_koledža\_diploma pielikums\_2022 and A-K diploma paraugs. It is impossible based on one page to determine if the College is issuing an appropriate diploma. Based on Regulations of Cabinet of Ministers No. 202. "Kārtība, kādā izsniedz valsts atzītus augstāko izglītību apliecinošus dokumentus"

- 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

College director has provided a statement that staff members involved in the implementation of the study programme are proficient in the Latvian language. Annex: AIC\_51.

- 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:** Not relevant

- 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

Study agreement in annex: 2022\_paraugs includes all requirements from regulations of Cabinet of Ministers No. 70. "Studiju līgumā obligāti 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



College has provided confirmation that students will be provided with opportunities to continue their education in professional Bachelor level study programme "Material technology and design" in Riga Technical university. See annex: Vienošānās\_RTU\_RTK\_Ražošana un pārstrāde. College should find and sign new agreement that allows students to continue studies in another first level study programme, not Bachelor level.

- 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

The College has provided confirmation that they will compensate losses for students in case of termination of study programme. See in annex: AIC\_90.

- 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

There are some inconsistencies with the Professional Higher Education Standard, study course descriptions and diploma.

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

First level professional higher education study programme "Wood Processing" (41543) can only be obtained in Riga Technical college. It is offered in Latvian language as full-time studies only. This programme is oriented on providing practical skills in woodworking. This programme complies with the study field of "Manufacture and Processing". Study programme aims, tasks, are not closely related to each other and with current scientific activity, implementation of the programme can not be fully achieved. The dropout rate of the students is very high. Student count in the study programme is declining, luckily almost all of graduates after graduation are employed in the relevant field.

The study courses in this programme are topical - study subjects cover the knowledge required by the study field and meet the needs of woodworking. The content of study courses is interconnected and complementary. The study programme is clearly practical oriented according to the detailed description of the study course. Unfortunately only very few sources and references of nowadays literature (2017-2022) and international literature can be found in study course descriptions and there is no distinction made between mandatory and optional study courses. Regarding the internships since most of students are working already during the studies, then most of internship places are the work places of the students this also limits cooperation with enterprises outside Riga

as far as the organization of internships is concerned. Expert team suggests that all internships should be graded with mark to better evaluate how well the student has performed during the internship.

Regarding material-technical base the expert team concluded that the library, material, technical and financial provision creates a good basis for achieving most of the study results. Material technical base is oriented only for training practical skills of students and it is not used for carrying out scientific and research work, but is fully available to do so. This also highlights overall problem in study programme – almost no scientific activities are carried out in the study programme. No investments are planned for basic science and research work at the RTC.

6 out of 18 academic staff members involved in study programme implementation are not suitable for academic positions according to Law on Higher Education Institutions and Cabinet Regulation No. 147. During the interviews experts found out that the vocational academic staff have very low motivation to achieve the next level of higher education and they have very low motivation to achieve results in applied science and write publications.

Students and academic staff members are not actively using mobility opportunities. College has a lot of connections with other HEI and institutions, but most of these connections are also weakly utilised and are not serving for development of the study programme.

Therefore, the main strengths observed are uniqueness of the programme in the higher education area, strong material technical base to teach practical skills, high employment of graduates, strong involvement of some stakeholders in evaluation of qualification work. On the other hand, the biggest weaknesses are lack of scientific and research activities, students do not have opportunity to fully comprehend the situation in the industry since they undergo internship in companies where they already are working. There are academic staff members that only have obtained the first level higher education and this can not create perquisites for advanced research activities.

## **Evaluation of the study programme "Wood Processing"**

Evaluation of the study programme:

Average

## **2.6. Recommendations for the Study Programme "Wood Processing"**

### **Short-term recommendations**

- |   |
|---|
| 1.Reduce study programme learning outcomes so they are more precise and do not overlap.   |
| 2. Re-evaluate study programme aims, tasks, outcomes so they are more closely related and achievable.   |
| 3. RTC “Wood Processing” program director should manage the distinction between mandatory and optional study courses and review study courses literature references which are outdated. |

4. Based on the review of Detailed description of the study course it is recommended to improve the criteria for the assessment of learning outcomes. Besides a 10 points scale should be improvements with each topic, type of assessment, evaluation and content of the following technical subjects: - programmable controllers, - wood working machine practice, - CNC programming, - wood working chemical technologies, - technical measurement in wood working, - wood product design, - material studies, as it is done in other technical subjects (Detailed description of the study course) as is "Machinery components and transportation equipment" and "Automated design systems (CAD, CAM, CAE)" which additionally describe criteria for assessments such as lecturers' attendance (ex. 95 - 100%), accomplished tasks of seminar works and independent task covering all the topics must be completed (ex. 50% of the topics must be completed correctly in specific job).
5. As soon as possible Riga Technical College needs to create a strategic plan and marketing strategy on how to increase the numbers of students in the study field.
6. Increase the cooperation with the woodworking industry companies by showing the interest in cooperation within signing the cooperation agreements.
7. Increase the international cooperation within the actual mobilities for practice, studies and lecturers exchange.
8. College should find and sign new agreement that allows students to continue studies in another first level study programme, not Bachelor level.

### Long-term recommendations

1. For the next accreditation Riga technical college should pay attention to detail to all required documents and what information should be included in them.
2. Create a support system or certain entrance exams for students, to enroll only highly motivated students to decrease dropout rate.
3. Document all changes created in the study programme syllabus.
4. Promote and use all created local and abroad connections to improve study process and bring internationalization to the programme.
5. For the next accreditation RTC should have a capable research management system established for teaching staff and students.
6. It should be possible to more actively cooperate in the applied field of research with other HEI and woodworking industries companies.
7. For the next accreditation Riga Technical College should improve the management system, recommended to implement ISO standard.
8. For the next accreditation Riga Technical College should improve the professional development of the academic staff by giving the support and possibilities for the lectures to higher the degrees or participate in various courses.
9. For the next accreditation Riga Technical College should update all information given in documentary and website adding all information in English language.

10. Investments in the scientific and research capacity of the study field and program, should be made at least to the extent where RTC could perform in practical and applied research.

11. Role of the College is irrelevant outside of Riga and there isn't enough cooperation with enterprises outside Riga including internship. It is necessary to make more relevant the role of the College and expand it also outside from Riga. Cooperation with enterprises should be expanded outside Riga (Internship also in other companies outside Riga).

### 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:	Partially compliant	Lack of given documentation makes it difficult to understand and prove that there are some changes made and effort given to improve the study quality. It is not clear how the feedback is given to the stakeholders as students, graduates and employees. As there is also no shown and described mechanism within the efficiency that could be measured. Insufficient number of students is the biggest threat of the College and it is more concerning that there is no strategic plan identified how it could be increased also no marketing strategy or plan how to increase the numbers of the students. Riga Technical College internal quality assurance focuses on: continuous improvement of the study program and/ or study courses; Regular evaluation of lecturer's work; Evaluation of the results of the study process. But there is a lack of the established policy and procedures, suggested like ISO standard for management to ensure quality in full manner.
R2 - Compliance of scientific research and artistic creation with the level of development of scientific research and artistic creation (if applicable)	Partially compliant	Only a few activities "Wood Processing" study is related to the applied research results published. A few vocational academic staff members and students are writing some proceeding articles, it is a serious quality issue.

Requirements	Requirement Evaluation		Comment
R3 - The cooperation implemented within the study field with various Latvian and foreign organizations ensures the achievement of the aims of the study field.		Partially compliant	The College is lacking international collaborations, the ones that are created are not sustainable and are not used very often. This is supported by absent incoming mobility for staff and for students and for only 2 short term outgoing mobilities for academic staff members and only 1 outgoing mobility among students in previous accreditation period. This also is limited by the fact that the study programme is implemented only in Latvian language. Locally Riga Technical college have good collaborations with employers, but also with serious limitations, employers are only providing internship places, not all of them are involved in improvement of the study programme and are not providing qualification work topics. Collaborations with RTU and LLU are almost non existent and are not used to their full potential. Academic staff members that are employed in other HEI or institutes does not count as collaborations. College has provided documents for great connections locally and abroad, but these connections and agreements are not related to this study field.
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	College has implemented a number of very important recommendations and tackled weaknesses identified in previous assessment procedures, still there is no or small progress within fields of local and international cooperation related to research and mobility.

#### 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	Wood Processing (41543)	Not relevant	Partially compliant	Partially compliant	Partially compliant	Average

## **The Dissenting Opinions of the Experts**

Not applicable.