

**Professional Education Competence Centre  
“Riga Technical College”**

**WOOD PROCESSING**

Qualification WOOD PROCESSING TECHNOLOGIST

**First level higher professional education**

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## Introduction

Herewith the Study Programme “**WOOD PROCESSING**” of the first level professional higher education of Professional Education Competence Centre “Riga Technical College” (hereinafter referred to as RTC) with obtainable qualification WOOD PROCESSING TEHNOLOGIST is being submitted for evaluation.

The Study Programme was developed in 2010 and confirmed at the meeting of RTC Council on February 10<sup>th</sup> 2011, Minutes No. 6. Licence No. 041003-15 has been received for realization of the Study Programme, which is valid till March 3<sup>rd</sup> 2014.

The first matriculation of students in this Study Programme took place in 2011/2012 academic year.

Evaluation is performed within the framework of agreement No. 2011/0012/1DP/1.1.2.2.1/11/IPIA/VIAA/001 of **European Social Fund’s Project “Evaluation of Higher Education Programmes and Suggestions for Quality Improvement”**.

# 1. Quality

## 1.1. Aims and tasks

Study programme “Wood Processing”

**Key aim:** To render basic knowledge and professional competence and to train persons for independent, high quality work in the sphere of wood mechanical processing.

### **Aims:**

To train the student:

- For work in the position of wood processing technologist, encouraging his development;
- For successful management of enterprise’s or everyday transactions and operative working procedures and monitoring their execution;
  - to facilitate acquisition of knowledge and skills, which ensure the student with development of organizer’s abilities and qualities in specialization of middle-level manager in various fields and facilitate competitiveness in the changing social economic conditions;
  - To ensure students the possibility to prepare for continuation of their education in study programmes of a higher level and raise their professional qualification at courses and seminars.

### **Tasks:**

To prepare specialists of 4<sup>th</sup> professional qualification level (first level of higher professional education), who

**Should know:** theoretical and practical aspects of technological processes of wood processing, methods and techniques of analysis, designing and production of wooden articles, operation, maintenance and repair of equipment and mechanical appliances;

- make material and work-consumption calculations,
- implement requirements of environmental protection;
- have a good knowledge of construction, working principles, usage instructions of technical means applied in their work; sequence of execution of interrelated working processes, their efficient planning and organisation, working conditions; costs formation of products, services and other kinds of activity;

- **be able:** to use in practice theoretical knowledge and perfect their knowledge on an on-going basis;

- **be responsible for:** the process of assigned work and its results; for the decisions taken; for entrusted instruments and means of labour; safety of other people involved in his activity.

Results of study programme acquisition have been coordinated with knowledge, skills and competence defined by European Qualifications Framework (EQF) (Regulations of Minister Cabinet of the Republic of Latvia (hereinafter referred to as MC LR) No. 931 as of October 5<sup>th</sup>, 2010.

## **1.2. Study content and organisation**

The Programme complies with the requirements of MC LR Regulations No.141 “Regulations on State Standard of the First Level Professional Higher Education”.

The scope of the Programme is 100 credits (hereinafter - CP)/150 ECTS in compliance with the state standard of the 1<sup>st</sup> level of professional higher education, study courses are 75 CP (general education study courses 20 CP, branch profession study courses 55 CP), practices and placement - 16 CP and qualification work - 9 CP.

Practice is organised in compliance with MC LR Regulations No. 276 “On procedure of study practice organisation”, a tri-lateral Placement Agreement is concluded and signed by the representative of enterprise where placement will be performed, the student and the principal of RTC. Studies are regulated by RTC Regulations, study programme, study plan, study course programme and study process schedule. Study programme and study plan determine study courses to be acquired, their forms, scope, distribution by semesters and succession. The study process schedule determines time-limits of the academic year. Study course programmes determine themes of studies and practices. During implementation of the programme students take 10 examinations, 23 tests “with evaluation” and 16 tests “without evaluation”, and also write 5 course papers.

Duration of study programme implementation is the following:

- Full-time intramural studies - 2,5 years ;
- Part-time intramural studies - 3 years.

One CP corresponds to 40 working hours per week, i.e.:

- Full-time study programme - 20 contact hours and 20 hours on independent work;
- Part-time study programme -16 contact hours and 24 hours on independent work.

Practice both for full-time and part-time students takes 40 hours per week.

Wood Processing study programme envisages acquisition of general education and branch obligatory professional study courses at theoretical and practical classes, during practice and

independent studies. General education study courses include theoretical courses of humanitarian and social sciences, which develop social, communicative and managerial skills. Branch study courses correspond to the profession of wood processing technologist.

Basic methods of studies are lectures, seminars, practical work, test works, field trips to the enterprises and production units, development of course papers. For mastering of specific themes guest lecturers are invited, for conducting practical classes – practitioners from enterprises /organisations, besides some classes are planned at enterprises and research institutes.

At the beginning of their study course, students are familiarised with the themes and contents of study courses and evaluation criteria within the specific study course. If necessary the student in collaboration with the lecturer can develop an individual plan. Special attention will be paid to suggestions of graduates, who are employed at enterprises and suggest introducing corrections in the contents of the study course. Students participate in the improvement of study process, one of activities are student questionnaires on the quality of study courses. Open questions give students the opportunity to express their opinion and suggestions that could improve quality of the outlined material and increase benefit from the study programme in general. Analysis of questionnaires allows detecting “strong” and “weak” points of the academic staff and issues requiring special attention or additions. In order to secure the principle of democracy students can express their opinion anonymously.

Each lecturer has an e-mail address and students are able to contact him, ask questions and receive answers also after study hours. Lecturers use Skype in their work with students as well.

In securing connection between students, academic staff and programme administration a great role is played by student self-government (Minutes No. 40-2008 of RTC Council meeting as of 02.12.2008), where students’ suggestions are heard, summarised and then the programme administration is being informed, so that recommendations can be collectively discussed and the process of studies improved.

Students have the opportunity to participate in exchange of experience in other higher educational institutions of similar level in Latvia or practice abroad (LLP Erasmus programme students placement mobility), afterwards they will familiarise other students and academic staff of the department with examples of good practice.

Practices are connected with and comply with the theoretical part of the course. Acquisition of professional skills is included in study programme.

**Aim of practice/placement:** to secure connection between knowledge acquired at college and real working environment, and to give students the opportunity to acquire skills and knowledge of practical work.

**Task of practice/placement:** to deepen and strengthen theoretical knowledge by using it for solution of specific practical tasks, to develop skills of the emerging specialist.

The following practices and qualification practices are planned within the study programme:

- Wood processing bench practice;
- Computer numerical control (CNC) (hereinafter CNC) tool practice;
- Practice at an enterprise;
- Qualification practice.

Practical studies at College are planned as practical classes, during which the students:

- Work in small groups or individually;
- Using computers develop technological documentation, which is necessary for organisation of production at the enterprise;
- Solve technical tasks related to increase of production effectiveness and improvement of work organisation in the sphere of wood mechanical procession;
- Acquire skills of searching information in technical manuals and catalogues;
- Numerical control tools – acquire computer numerical control (CNC) tool construction and principles of operation; get apprehension on the applied cutting tools and auxiliary devices; get familiarised with installation methods of computer numerical control (CNC) tools; acquire practical skills for work on CNC tools, and also acquire installation methods and their use in practical work.

**Placement** is envisaged after acquisition of theoretical study course and is planned at structural unit of an enterprise/organisation. Its **aim is consolidation of knowledge and its use in real working environment**. During the **placement** students prepare practice summary, which is submitted to the **placement** manager.

**Qualification placement is envisaged**, so that students can develop their qualification work using information on work organisation of a structural unit of a real enterprise, to evaluate production activity of the enterprise, peculiarities of its production and to perform analyses of production quality. Practice is managed by the College representative, who monitors the process of practice and gives consultations. During his practice the student commences collection of

materials for development of his qualification work. At his working place the student has practice instructor from among the specialists of the enterprise. During his practice the student develops his individual task, upon completing his practice he submits to his instructor the practice journal, reference of his practice instructor from the working place and report on individual task. Fulfilment of practice programme is evaluated by College practice instructor, taking into account the reference of working place practice instructor and reference of the expected qualification work instructor. Practice is evaluated with test without evaluation.

For organisation of practice the College has cooperation agreements with the following enterprises/organisations for the **placement arrangement**:

MEKA – “Wood and Wood Products Research and Development Institute”, Latvian association of wood processing companies and exporters.

Each course programme has its evaluation criteria. At the beginning of studies the students are informed of how their knowledge and skills will be evaluated at each study course. In the process of study course acquisition and in evaluation of acquisition achievements we orient ourselves on Bloom’s taxonomy levels:

- knowledge – to remember, to recognize, to define;
- comprehension – to understand, to interpret;
- application – to generalise, to organise;
- analysis – to compare, to confront, to classify;
- synthesis – to create, to construct, to formulate;
- Evaluation – to make judgements, to substantiate, to conclude.

Consequently the students are given the opportunity to acquire knowledge and skills defined in study course programmes and also perfect and develop communicative skills, presentation abilities, and ability to judge critically, ability to work in team and observe principles of multi-disciplinary team-work etc. which are necessary at labour market.

Evaluations within study courses are acquired by fulfilling requirements set forth in course programmes.

One of the programme’s aims is to develop and perfect ability to work in team. Therefore specific weight is laid on interactive study forms; work in small groups, development of study papers and research projects, their discussion in groups and public defence. The process of studies is structured as an active one, which is attractive for students. Foreign languages are integrated in



to study courses, stimulating students to read literature published in foreign languages and inviting guest lecturers from abroad.

Process oriented evaluation is carried out during the process of study content acquisition in order to compare the estimated characteristics of students' knowledge with the real results. An important provision is familiarisation of students with the estimated result, with the methods of result analysis, with those arguments, on which are substantiated conclusions about main deficiencies or shortcomings in their works and possible reasons.

As a result lecturers and students develop skills to acquire and organise information, process it and derive new knowledge, which secures student's joint responsibility for his study achievements and their correspondence with aims and tasks set forth by study subjects. Therefore evaluation becomes an instrument of management and correction of knowledge acquiring and skills. Evaluation of results achieved during the practice is defined at the time of each practice, envisaging evaluation criteria and documents which are to be filled in during the practice.

Once a month department meetings are held, at which issues on students' class attendance and progress are discussed as well as students' and academic staff's questions concerning the study programme.

### ***1.3. Studies and evaluation of knowledge***

Evaluation of student knowledge complies with Regulations of MC LR on State standard of the first level professional higher education (No. 141 as of 20.03.2001), and Decree of Ministry of Education and Science of the Republic of Latvia (hereinafter referred to as LR MES) No. 208 as of 14.04.1998, and resolutions of RTC.

For successful acquisition of the course students are familiarised with content of the course and evaluation criteria. Evaluation within the framework of study courses is achieved by fulfilling requirements put forward in course programmes. The prospective study results are clearly stated; skills of problem solution are being developed in practise. Great attention is paid to one of the most commonly used study work methods - case studies, where actual material of foreign and local enterprises is used.

In tasks of course papers and qualification works is envisaged comparison of various solutions/variants/options with the desirable ones, thus developing in practice skills of problem solution.

Each lecturer and students – as a group and individually - have an e-mail address, besides lecturers use Skype in their communication with students.

Students are provided with assistance and consultations of academic personnel, control of intermediate results is also performed in order to provide for achievement of study programme results in due time and to increase study motivation.

On commencing the study course the student's previous training is of great importance. Student matriculation takes place in compliance with "Matriculation Procedure" developed by RTC, which was issued pursuant to articles 45, 46 and 83 of the Law on Higher Educational Establishments.

Student can choose themes of independent work and papers according to their topical issues (if the student is employed at the respective enterprise). When presenting their papers they give the opportunity to other students to get familiarised with production units and enterprises of the specific branch.

That is why special attention is paid to interactive study forms: work in small groups, development of study papers and research projects, discussion of these in groups and public presentation.

***Dialogue between*** the lecturer and the student is a specific study work form, the aim of which is to create a working environment characterised by good fellowship, mutual understanding and tolerance, and to develop optimal communication of lecturer's knowledge and practical experience to students. During implementation of study programme the following dialogue forms have been developed:

- Students' familiarisation with detailed course descriptions,
- Studies in small groups, allowing to involve each student into conversation,
- Public presentation and evaluation of qualification paper,
- Weekly individual consultations,
- Cumulative study work evaluation system and result analyses,
- Public presentation of practice and analyses of its results,
- Evaluation of practice involving students and practice managers,
- Organisation of student questionnaires on study programme courses.

Study process is structured as an active process that is captivating for students. Foreign languages are integrated into study courses, motivating students to read literature published in foreign languages and inviting guest lecturers from abroad.

Process oriented evaluation is carried out during the process of study content acquisition as well, in order to compare the estimated students' knowledge reference with the real results. An important condition is familiarisation of students with the estimated results, with methods of results analyses, with those arguments on which are based conclusions on basic deficiencies or shortcomings in their works and possible reasons of these. In the result both lecturers and students develop their skills to acquire and organise information, to process and derive new knowledge, which provides for the student's joint responsibility for his study achievements and their compliance with aims and tasks of study subjects. Therefore their evaluation becomes an instrument of monitoring and correction of knowledge and skill acquisition. Evaluation of results achieved during the practice is determined during each practice, envisaging evaluation criteria and documents to be filled in during the practice.

At the beginning of a new study semester, at the meeting of department analyses of students study results is performed and the academic personnel can get familiarised with results of examinations, student questionnaires and recommendations for improvement of study quality.

Study programme will be supplemented and updated on the bases of market studies, and consultations with employers and practitioners.

In the process of studies we use new IT possibilities, the Internet resources, interactive boards, projectors, Paper Show, Skype, software for engineering technical calculations and design.

Consultations of academic personnel take place according to consultation schedule. Each lecturer has an e-mail address; students can contact him both individually and in groups, ask questions and get the answers. Regular evaluation of student knowledge takes place through tests, test works; at seminars students present their knowledge they had independently acquired at theoretical courses and practical classes.

#### ***1.4. Study provision and management***

The system of studies is structured in compliance with the Law on Education, Law on Higher Educational Establishments and Professional Education with the purpose to promote achievement of aims set forth in study programmes and to facilitate execution of tasks. The system in RTC is defined by documents regulating relations between students and college and RTC by-laws.

Basic documents and structural units that regulate monitor and determine the process, procedure and organisation of studies:

- RTC Council
- Study programme administration
- Student Self-government
- Study programme
- Study courses description
- Study plan for full-time and part-time studies

The respective documents are available in RTC structural units and in Study Department. Normative documents regulating activities of the College can be found in the Internet at RTC page: [www.rtk.lv](http://www.rtk.lv), in the section for students.

Student cards are issued to matriculated students. From the beginning of studies the students are granted all rights of RTC student envisaged by the Law on Education, Law on Higher educational Establishments and other mandatory documents. When commencing their studies students receive informative material, containing the most important information on study organisation and practical procedures.

RTC Council operates in the College in compliance with RTC Regulations and structure, in which are included student representatives who are nominated by RTC Student Council. Thus RTC students are involved in decision taking in RTC.

With the purpose to establish relationships of administrative, academic staff and students, lecturer E.Tozhe (E.Tože) has developed RTC Code of Ethics, which is based on European School Council document, Law of Education, Administrative Offence Code of Latvia and RTC by-laws. In RTC library it is available for all students, lecturers and employees, it can also be found at the group's tutor and principal deputy in pedagogical work. *The task of Code of Ethics is to stimulate students and academic staff as well as other employees of the College to be just, honest and reliable, to perform their direct duties responsibly and conscientiously, and to follow ethic basic principles in mutual communication and behaviour.*<sup>1</sup>

Conflict situations can be solved through negotiations, with participation of conflicting parties and the Head of Department, or if compromise is impossible – on the basis of an official application and Resolution of Department meeting, which is approved of or corrected by order of RTC Principal.

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<sup>1</sup> Tože E. “Introduction of Code of Ethics in work of RTC lecturers, employees and students”

## **1.5. Scientific research (creative) work of the academic staff and students**

Creative work of the academic staff is closely connected with aims and tasks of the study programme “Wood Processing”. In realisation of study programme it is planned to involve 22 lecturers with qualification in the corresponding sectors: Doctors of science – 2, Masters of Science – 13, higher professional education – 3.

Academic staff has 22 publications in other international editions, 19 scientific publications in Latvian editions, 2 monographs, 2 textbooks and methodical literature, 14 Conference theses, participation in scientific and academic projects – 8, patents, licences, design samples, software – 3, participation in international jury commissions – 4, expert activity in Latvian Council of Science – 3.

Once a year an exhibition of course works, independent works and qualification works take place for all College study programmes, where the complete academic staffs have the opportunity to get familiarised with the work of their colleagues.

A scientific and practical conference is held annually, where students and academic staff present their scientific research works.

## **1.6. Quality assurance and guaranties**

Internal Quality Management System operates in Professional Education Competence Centre “Riga Technical College”, which complies with requirements of Standards and Guidelines for the Quality Assurance in the European Higher Education Area (ESG) established by ENQA.

Study programme quality is evaluated by administration of study programme, departments, which implement the study programme, and other involved structural units, Council of the College, professional associations and employers as well as student Self-government.

Operation of internal quality assurance mechanism of study programme of the First level of professional higher education in RTC is ensured at various levels:

1. Study department performs:

– Supervision of RTC study courses (hereinafter referred to as SC), which includes compliance of SC with the higher education programme, its content,

– Questionnaires of students at College level. The purpose of questionnaires is to clarify students' adaptation in the College system and satisfaction of all students with the study process, lectures, and practical classes. Results of questionnaires are available in Study Department,

– Provision of premises and technical equipment for stream lectures (35- 80 seats),

– Development of study process schedule in correspondence with study plans and the existing situation,

## 2. Department level:

– Once a year the manager of study programme submits his report to Study Department, prior to that it is evaluated at Department meeting.

– Students are involved in study programme quality evaluation by participating in questionnaires, as a result students' opinion is clarified and recommendations for improvement of study programme implementation and possibilities for perfection of lecturer's work are received.

– RTC General Service Department sees to it that premises and technical equipment are provided for in compliance with the latest standards, thus facilitating development of departments and increasing the quality of study programme implementation.

## 3. College and administration level.

– Once in a semester a questionnaire among students of the study programme is organised concerning the performance quality of lecturers and evaluation of study programme. The input is summed up and the summarised results are discussed at Department's meeting, administration meeting and Council meeting.

– Once per academic year the contents of study programme courses, methodical materials, the latest study literature and methodical guidelines of study papers (papers, practice reports, course papers) are revised;

Academic staff has the opportunity to participate in courses and seminars on the latest study and pedagogical methods, besides is facilitated attendance of efficiency courses at seminars and exhibitions organised by employers;

Academic staff and study programme administration take part in various events and projects on exchange of experience; collaborate with HEI and competence centres abroad, meet representatives of the corresponding institutions and social partners, mutually discuss current events in the sector, analysing the results and making corrections in study programmes.

Studies in Wood Processing study programme were commenced in 2011/2012 academic year.

Cooperation agreements have been concluded with Forest and Wood Products Research and Development Institute and Latvian Association of Wood Processing Companies and Exporters.

## **2. Resources**

### **2.1 Aims and tasks**

In order to ensure good quality of professional study programme acquisition, great attention should be paid to organisation and management of practices, practical works, laboratory works and organisation of seminars. In RTC library, in lecture rooms and laboratories are available work descriptions and methodical materials. Impact of these works' execution quality on final evaluation of study course is an obligatory component of course programme. Prior to commencing practical and laboratory works students are familiarised with labour safety regulations and confirm this with their signature in Instruction register.

Themes of course papers and qualification works are approved at department meetings. Themes of qualification works are considered at department meetings and approved by Deputy Principal in study and research work.

In general, out of the overall amount of study programme contact hours (2500 hrs), theory makes 37%, practical works – 23%, practices – 25%, development of qualification work - 15%. Such distribution is appropriate for achievement of aims of professional study programme.

### **2.2. Study content and organisation**

Professionalism of academic staff involved in programme's implementation corresponds to study programme contents (Table No.1). In some study courses several lecturers are planned, one reads lectures, another conducts laboratory works or practical works. Specific professional study courses are conducted by guest docents/ guest lecturers/ guest assistants.

List of study programme academic staff

Table No. 1

<b>No.</b>	<b>Name, surname</b>	<b>Academic position</b>	<b>Scientific degree</b>	<b>Study course</b>	<b>Amount CP</b>
1.	Rūta Kelberere	Lecturer	Mg.environment	Higher mathematics	6
2.	Jānis Rozenblats	Docent	Dr. Paed.	Physics	3

3.	Jekaterina Čerņevska	Assistant	Mg.philol.	The English language	3
4.	Monika Martinšone	Docent	Mg.oec.	Entrepreneurship economics	3
5.	Sandra Stūrīte	Assistant	Mg. ch.	Labour, environment and civil protection	2
	Vladimirs Viskovs	Assistant			
6.	Lilita Jonāne	Docent	Mg. hyst.	Organisations psychology	2
7.	Jānis Pujāts	Assistant		Latvia and Europe	1
8.	Pēteris Sleikšs	Assistant	Mg.sc.ing	Materials science	5
	Miks Šteinbergs	Assistant			
9.	Miks Šteinbergs/ Andris Gordjušins	Assistant / Guest Assistant	Mg.sc.ing.	Automation of production processes	3
10.	Andris Gordjušins	Guest Assistant	Mg.sc.ing.	Programmable controllers	1
11.	Pēteris Sleikšs	Guest Assistant	Mg.sc.ing	Technical measurement in wood processing	2
12.	Arnis Treimanis	Guest docent	Dr. habil. ing	Wood chemical technologies	6
	Uldis Grīnfelds	Guest lecturer	Mg.sc.ing		
13.	Kristiāns Štekelis	Assistant	Mg.sc.ing.	Study of wood merchandise	7
	Haralds Fedatovskis	Assistant	Ing.		
14.	Kristiāns Štekelis	Assistant	Mg.sc.ing.	Wood mechanical processing and equipment	5
				Basic wood products designing	2
				Technical mechanics and wooden building structures	3
15.	Edīte Bērziņa	Guest lecturer	Mg.art.	Industrial design	2
				Ergonomics	1
16.	Veronika Iesmiņa	Assistant	Ing. Mg.paed.	Machine elements and transportation equipment	2
17.	Anda Kazuša	Docent	M.sc.TQM Mg.Paed.	Quality management basics	2
				Engineering graphics	2
18.	Anda Kazuša	Docent	M.sc.TQM Mg.Paed.	Automated designing systems (CAD,CAM,CAE)	6
	Kristiāns Štekelis	Assistant	Mg.sc.ing.		
	Romualds Jakubānis	Docent	Ing.		
19.	Romualds Jakubānis	Docent	Ing.	CNC programming	4
20.	Rasma Baļule	Lecturer	Ing.	Electrical engineering	2
21.	Jānis Kalniņš	Lecturer	Mg.Paed.	Sport	0
22.	Aigars Dubrovskis	Assistant		Wood processing benches practice	3
23.	Ainārs Veips	Assistant		CNC tools practice	3

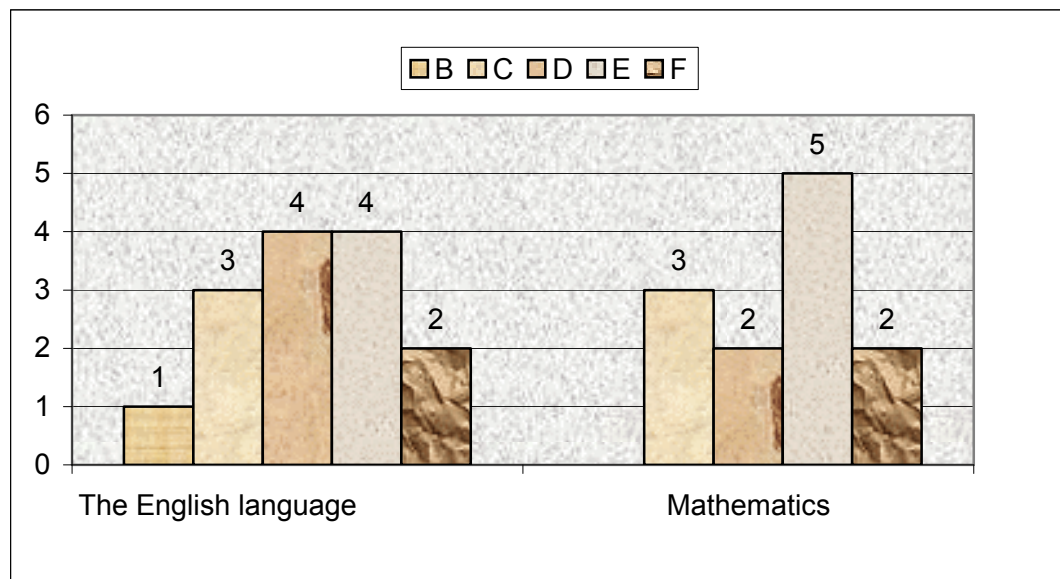


We pay great attention to organisation and management of placements, practical works, laboratory works and seminars. In RTC library, lecture rooms and laboratories are available work descriptions and methodical materials, computers. Quality of these works execution essentially impacts the final evaluation of study course. In practice programmes, which students receive at commencing practice, is described its contents, documentation to be submitted to practice manager and practice evaluation criteria. Themes of course papers and qualification works are considered and approved of a department meeting:

- Course paper tasks – by Study programme manager,
- Qualification work tasks – by Deputy Principal in study and research work.

The first matriculation in study programme Wood processing took place in academic year 2011/2012. 12, students were matriculated for state budget funds and 2 students – with self financing.

At matriculation were taken into account evaluations of centralised examinations in Mathematics and the English language.



The first matriculation in study programme Wood processing

### **2.3. Studies and evaluation of knowledge**

Study provision corresponds to possibilities of modern technologies; computers, multimedia and internet, interactive whiteboards are used. Computers are used in practical works, which allows mastering the latest information technologies and data bases. Students can copy study materials.

In order to master automated designing systems (CAD/CAM/CAE) student are provided with a computer class, where the following software is available: AutoCAD; Solid Works, Cosmos Works. For students to comprehend numerical control tools (CNC), they are provided with teaching in CAM system MASTERCAM, besides practice with CNC tools is envisaged. Wood processing work shop is equipped with wood processing workbenches and manual tools.

To get familiarised with automation of production processes for students are available Festo process technique stands: level control, flow control, temperature control, and also FluidLab software.

For execution of laboratory works it is planned to use technical bases of “Forest and Wood Products Research and Development Institute”. We plan to sign cooperation agreement with LR AS Institute of Wood Chemistry.

### **2.4. Study provision and management**

Riga Technical University, Forest and Wood Products Research and Development Institute (MEKA), Latvian Association of Wood Processing Companies and Exporters and the following RTC structural units are involved in implementation of study programme:

- Department of General Studies and Management
- Motor Transport and Production Technologies Department
- Power Industry Department

In departments teaching of theoretical and practical part of the corresponding study course is ensured.

The following RTC support staff will also be involved in implementation of study programmes: study department, study practise and production department, research and methodical

development department, study process development assurance department, library, information centre, accountancy, Hall of residence, coffee-bar.

On the basis of agreement concluded with State Education Agency on April 02, 2010 RTC has commenced implementation of European Regional Development Fund activity programme "Infrastructure and Services" operational programme Priority 3.1. "Infrastructure for Strengthening Human Capital" 3.1.2 measure "Infrastructure of Higher Education" 3.1.2.1 Activity "Modernization of Premises and Devices for Improvement of Study Programme Quality at Higher Educational Establishments, including Provision of Education Opportunities for Individuals with Functional Disabilities" 3.1.2.1.1 subactivity "Modernization of Premises and Devices for Improvement of Study Programme Quality at Higher Educational Establishments, including Provision of Education Opportunities for Individuals with Functional Disabilities". 2010/2011 academic year the renovation of RTC study block was carried out, thus improving study environment and providing for better quality of study process.

In the process of studies we use material and technical base of Mechanical Engineering study programme - CAD/CAM/CAE programmes, works of technical mechanics laboratory, CNC tools.

The library is RTC structural unit and operates in compliance with internal normative acts, the main task of the library is to provide for the learning and study process with the necessary informative resources and services in compliance with programme requirements in all specialities. Regular stocktaking of store, cataloguing, student, academic staff and employees' attendance and informative and bibliographic material service is performed.

In reading-room (97 m<sup>2</sup>) there are 27 working places, 5 computers and a copy-machine. In reading-room students and academic staff have free access to reference literature, latest editions, and fiction. The library subscribes 28 publications. There are 2 rooms in the library for book stock (193 m<sup>2</sup>), for study literature, fiction and archive of periodicals, study literature in technical specialities, methodical materials, State Standards of Latvia.

In the year 2011 there are 35 705 units in the library's stock, including 25 537 books, out of which 22 032 are textbooks. There are 22 audio-visual and electronic documents and 12 DVDs.

Employees of the library use the electronic general catalogue of 9 libraries of national significance. The library uses services of National Library of Latvia (LNB), Riga Technical University Inter-library loan system. Starting from year 2009 literature ordering and delivering in

LNB Inter-library loan system is available electronically. Library has in its store literature and teaching aids in foreign languages – the English, German n Russian languages.

The Hall of residence and other HEI services are available for guest docents and students of exchange programmes in compliance with RTC internal regulations.

## **2.5. Scientific research (creative) work of the academic staff and students**

Lecture rooms where lectures of study programme “Wood Processing” take place are provided with computers, Internet, clerical aids, textbooks, audio/video equipment. Materials can be copied. Computers and Internet can be used for development of independent papers or for independent studies. Academic staff and students in their scientific (creative) work can use the following:

- ***Electronic Catalogue of Libraries of State Significance***

<http://www.lnb.lv/lv/lasitajiem/katalogi-datubazes-kartotekas/valsts-nozimes-biblioteku-elektroniskais-kopkatalogs>;

- Database of the International project OAPEN (Open Access Publishing in European Networks) ***OAPEN Online Library***. In online collections of electronic books is available scientific literature of various sectors and popular and science literature <http://www.oapen.org/home>

- ***Digital Book Index*** offers free access to more than 165 000 electronic books of more than 1800 publishers <http://www.digitalbookindex.org/about.htm>

**Google Scholar**, (<http://scholar.google.lv/>) search-engine of scientific publications in the Internet; social networks, e.g., **Research Gate** (<http://www.researchgate.net/>), which is the largest social network of scientists and researches in the world.

## **2.6. Quality assurance and guaranties**

Financial resources necessary for implementation of Study programme are sufficient (see R.2.1., R.2.2., R.2.3.) and their use is kept under regular control. Within the framework of ESF Project material and technical base of ”Engineering Mechanics“ study programme, which is used also by students of Wood Processing study programme, was supplemented in 2008:

- Methodical means of Technical Mechanics practical works:
  - Bench for pneumatic process teaching
- Donation of a private person
- Milling machine axle (the fourth axle)

### **3. Sustainability**

#### **3.1. Aims and tasks**

In Wood Processing study programme aims and tasks of higher education are taken into account, as well as interests of regional development and State as a whole, which are related to needs of students and employers.

Geographical position, quantity of woods and their quality place Latvia among the countries, where wood production serves not only for satisfaction of local demands, but plays a significant role in export as well. In 2010 wood sector made about 7% of GDP and wood products - about 27% of overall export of Latvia.<sup>2</sup>

Enterprises in the process of their development choose modern technological solutions corresponding to the sector of products produced. For production of competitive products equipment with computerised control is used, which ensures manufacturing of products of high quality and effective use of resources. At a number of enterprises implementation of projects has been completed, during which the process of production was adjusted specifically to conditions and requirements of Latvia. European and Latvian wood processing enterprises apply CNC benches, and they need workers with knowledge and skills to work on these.<sup>3</sup>

RTC is in the central focal point between the main factors impacting economic development of Latvia. In the sector of education RTC is between educational establishments of elementary and general education and higher educational establishments. RTC prepares specialists for electronics, information technologies, communication, power industry, transport, and machine building sectors, which guide future economic development of Latvia.<sup>4</sup>

RTC development strategy concept for years 2008-2014 indicates that the present situation in industrial and technological sectors of Latvian economy at one and the same time

<sup>2</sup> [www.coface.lv/CofacePortal/ShowBinary/BEA%20Repository/LV/lv\\_LV/documents/infocorner/Press\\_releases/release\\_06.2010\\_2](http://www.coface.lv/CofacePortal/ShowBinary/BEA%20Repository/LV/lv_LV/documents/infocorner/Press_releases/release_06.2010_2)

<sup>3</sup> [www.lm.gov.lv/.../petijums\\_lkf\\_](http://www.lm.gov.lv/.../petijums_lkf_)

<sup>4</sup> Riga Technical College development strategy concept for years 2008-2014.

faces the counter directed impacts that make to evaluate the previous model of ensuring qualified workers.

To achieve aims set forth by Lisbon Strategy<sup>5</sup> and increase competitiveness of Latvian economy, development of Wood Processing industry of Latvia should also be raised, acquiring and implementing new technologies, increasing productivity of labour and manufacturing products with high value added.

Such modernised sector needs highly qualified workers. Well educated and highly qualified man power is the only option for Latvia to be of equal value in the global competition and for every resident of Latvia to achieve the living standards of most developed EU countries.

### **3.2. Study content and organisation**

Academic staff has the opportunity to participate in courses and seminars on the latest teaching and pedagogical methods, besides rising of one's skills at seminars and exhibitions organised by employers is promoted. A. Kazusha (A. Kazuša) and M.Shteiberger (M. Šteinbergs) participate in ESF project "Promotion of theoretical knowledge and practical competence of teachers of professional subjects and practice managers" (agreement No. 2010/0043/1DP/1.2.1.1.2/09/IPIA/VIAA/001) "Methodical aid for teachers for development and implementation of teaching in electronic environment". Assistant H. Fedotovskis visited wood processing exhibition in Germany, Ligna 2010, Docent A. Kazuša attended international seminars in Portugal and Euroskills-2010 in Portugal and WorldSkills-2011, in London. Assistant V. Iesmiņa attended international machine design exhibition in Hanover, 2010.

In RTC are counted all the corresponding study courses credit points and their evaluation, received in other HEI study programmes of Latvia. Thus students have the opportunity to acquire specific modules, subjects and/or take practice (in full amount or partly) in other HEI study programmes of Latvia. Guest docent Treimanis has got work experience in Sweden, in Royal Swedish Academy of Engineering Sciences. In 2001 Riga Technical College concluded an agreement on cooperation with Lapland Vocational College (Finland). Every year exchange of academic staff takes place. This academic year we're planning experience exchange at Lapland Vocational College, Finland for one representative of academic staff and two students; two guest lecturers have been invited and two representatives of academic staff have handed in applications for participation in LLP Erasmus staff mobility programme.

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<sup>5</sup> Lisabonas stratēģija nosaka ES sociālo politiku un stratēģiju.

Academic staff participates in various international exchange events, projects, cooperates with HEI and competence centres of other countries, meets representatives of respective institutions and social partners, discussing current events of the sector, analysing the results and making corrections in study programmes. Cooperation agreements have been concluded with Riga Technical University (RTU), Latvian University of Agriculture (LUA) – “Forest and Wood Products Research and Development Institute” and “Latvian association of wood processing companies and exporters”, and three HEI in Europe (4.2).

### 3.3. Studies and evaluation of knowledge

In order to ensure sustainability of study programmes it is crucial to follow changeable demands of labour market. In compliance with recommendations of social partners we will make amendments in study courses or study plans.

In study programme and in every study course is clearly formulated knowledge, skills and competence, which students will acquire within the framework of programme and study course. Skills, knowledge and competences in their turn are connected with competences and skills determined by Wood Processing Technologist standard, which are based on changeable demands of labour market, since by introducing changes the sustainability of study programme is ensured.

Academic staff involved in study programme regularly strives to upgrade their qualification by participating in seminars: in Germany at Wood Processing exhibition Ligna-2011, Tech Industry seminars on the latest tendencies in wood processing technologies and workbenches. Academic staff of different age is involved in the study programme (Table No.3).

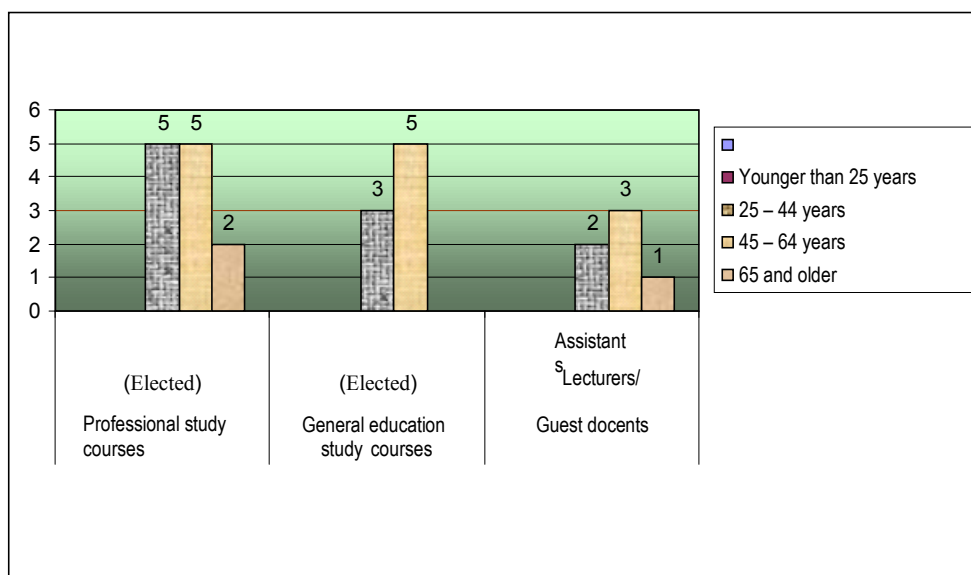


Table No.3 Distribution of academic staff according to age

We annually participate in international exhibition “School”, where potential students can receive information on our educational establishment. RTC organises Open doors days, when one can get familiarised with material and technical basis, study programmes, meet academic staff and students. Information on study programmes can be found at home page [www.rtk.lv](http://www.rtk.lv), where information on study programmes, matriculation regulations etc. can be found. Many of Professional Education Competence Centre “Riga Technical College” Upper-Secondary Vocational School trainees choose to acquire first level higher professional education at RTC.

### ***3.4. Study provision and management***

Contents and implementation of the study programme complies with the main aims of higher education (HE):

- Personality development,
- Development of democratic society,
- Solution of tasks of science development,
- Consideration of labour market requirements.

Representatives of employers, study programme lecturers, students are involved in the process of study results evaluation. The quality of study programme is evaluated by study programme administration, departments implementing the study programme and other involved structural units, Council of the College, Professional associations, employers and student Self-government.

Internal quality management system has been developed, thus ensuring operation of internal quality mechanism at various levels: at the level of study departments, at the level of Department and at college administration level.

In the process of study programme acquisition, we motivate students for professional growth, i.e. to continue studies in order to acquire higher professional education of the second level.

Upon evaluation and analyses of results through academic semesters and academic year, we use results of analyses for planning of the next development period. This analysis is based on the results of examinations, results of student’s questionnaires, recommendations of academic staff and social partners and resolutions of monthly Department meetings.



### **3.5. Scientific research (creative) work of the academic staff and students**

Academic staff is involved in scientific research work, themes of scientific research (creative) works are current, related to interests of the region, study programme contents and future development. Results of research work are published in internationally available and reviewed editions. Results of scientific research and creative work are used practically, including them in innovative activities. Asistant K. Štekelis studies in doctoral programme and guest lecturer U. Grīnfelds had ganded in his promotion work.

Bilateral cooperation agreements have been concluded with Riga Technical University, Forest and Wood Products Research and Development Institute, Lapland Vocational College in Finland, Bradford University in Great Britain, and Copenhagen Technical Education Centre in Denmark (Teknisk Erhvervsskole Center - TEC). Academic staff participates in development and implementation of various projects - ESF projects, Leonardo da Vinci Life-long education and Erasmus projects. (see 4.2.)

### **3.6. Quality assurance and guaranties**

Department meetings are held once a moth, at which regular plan development and discussion takes place. Once a year student questionnaires on study programme and academic staff are organised. We will involve “Latvian Association of Wood Processing Companies and Exporters” in evaluation of the study programme.

On 04.09.2009 was concluded an agreement between Riga Technical College and Riga Technical University on possibilities for RTC students, in the event of liquidation of the 1<sup>st</sup> level of higher Professional programme “Wood Processing”, to continue studies in Riga Technical University at the Faculty of Materials Science and Applied Chemistry.

After graduation RTC the students can continue studies at the next level of education. We plan to conclude an agreement with LUA on possibilities to continue studies in Bachelor’s study programme.

While preparing the study programme for licensing comparison of similar study programmes with study courses of HEI in Germany (University of Cooperative Education in Saxony, Germany) and Canada (St.Clair College - Woodworking Technician and Conestoga College - Woodworking Technician) and Latvian University of Agriculture (LUA) was performed.

Essential change is that starting from 2010/2011 academic year in LUA study programme “Wood Processing Technology”, higher Professional education of the first level, students are not enrolled. (Latvian University of Agriculture Wood faculty Wood Processing speciality study programme self-evaluation statement. 1st level higher professional education study programme “Wood Processing Technology”, Education classification code – 4154300- Jelgava 2010).

### **3.7. Number of cooperation agreements**

The following bilateral agreements have been concluded with:

1. Riga Technical University,
2. Forest and Wood Products Research and Development Institute,
3. Lapland Vocational College, Finland,
4. Bradford University, Great Britain,
5. Copenhagen Technical Education Centre, Denmark.

## **4. Cooperation, overlapping**

### **4.1. Aims and tasks**

Study programme “Wood Processing” with qualification wood processing technologist was established similarly with Latvian University of Agriculture (LUA) study programme “Wood Processing Technology” first level higher Professional education level.

In RTC study programme there are several different from LUA courses, taking into account wishes of employers and new professional competences, which are necessary for wood processing technologist, these are programming of numerical control tools (CNC), practice with CNC tools, automated designing systems, automation of manufacturing process, programmed controllers. In LUA starting from 2010/2011 students are not enrolled in study programme “Wood processing Technology”.

### **4.2. Study content and organisation**

Pursuant to article 47 of the Law on Higher Educational Establishments and on the basis of handed in academic references, in RTC are recounted all the corresponding study courses credit points and their evaluation received in other HEI study programmes of Latvia. Students have the

opportunity to acquire specific modules, study courses and/or take practice (in full amount or partly) in other HEI study programmes of Latvia.

In accordance with CV data of academic staff A. Treimanis, U. Grīnfelds, M. Šteinbergs, A. Gordjušins, P. Sleikšs have sufficient knowledge of the English language to be able to prepare and implement study programmes in the foreign language.

It would be advisable to perfect knowledge of foreign languages and in this connection it is possible to prepare project applications for participation in Erasmus Intensive Language Courses (EILC), it is planned to hand in the Project for 2011/2012 academic year.

Teaching staff from various enterprises and HEI of Latvia are involved in RTC teaching process: A. Treimanis, U. Grīnfelds from LUA, LR AS Wood Chemistry Institute, P. Sleikšs – Manager of “Art” Ltd., A.Gordjušins from Institute of Solid State Physics, E. Bērziņa from RTU.

Mobility of academic staff takes place: are implemented and planned mobility projects of students and academic staff within the framework of allocated grants of LLP Erasmus programme. In academic year 2010/2011 two lecturers of Wood Processing study programme worked in Sweden, this academic year two lecturers will also go to Sweden and we plan to welcome two guest lecturers from Sweden and Croatia. Two lecturers of our academic staff participated in Lifelong Learning Programme projects in Czech Republic and Germany. Students that were matriculated this year can apply for the LLP ERASMUS programme grant for the student placement at enterprises of the EU states (up to the end of semester.)

RTC actively cooperates with other higher education establishments in Latvia and abroad. Bilateral cooperation agreements have been concluded with Riga Technical University, Forest and Wood Products Research and Development Institute, Lapland Vocational College in Finland, Bradford University in Great Britain, and Copenhagen Technical Education Centre in Denmark (Teknisk Erhvervsskole Center - TEC).

### ***4.3 Studies and knowledge evaluation***

For realisation of study programme Licence No. 041003-15 has been received, which is valid till 03 March, 2014. The first matriculation of students took place in 2011/2012 academic year.

#### **4.4. Study provision and management**

Mobility of academic staff takes place: are implemented and planned mobility projects of students and academic staff within the framework of allocated grants of LLP Erasmus programme. In academic year 2010/2011 two lecturers of Wood processing study programme implemented staff training at Festo company, Sweden. This academic year two lecturers will undertake further training at Festo company, Sweden.

Students that were matriculated this year can apply for the EU LLP Erasmus mobility student placement at enterprises of the EU member states.

Two lecturers of our academic staff participated in LLP projects in Czech Republic and Germany. Assistant K. Štekelis is in his first year of studies at Latvian University of Agriculture, Wood faculty; quest lecturer U. Grīnfelds has handed in promotion work in LUA.

#### **4.5. Scientific research (creative) work of the academic staff and students**

Academic staff is involved in scientific research work, themes of scientific research (creative) works are current, related to interests of the region, study programme contents and future development. Results of research work are published in internationally available editions and data bases. Results of scientific research and creative work are used practically, including them in innovative activities.

Academic staff has scientific publications in international editions, scientific publications in Latvian editions, monographs, text books and methodical literature, conference theses, participation in scientific and academic projects, patents, licences, design samples, software, participation in international jury commissions, LSC experts activity.

#### **4.6. Quality assurance and guaranties**

Quest Docent A.Treimanis is LSC expert in Material Studies since 2008 up to now and a member of LSC Natural Sciences and Mathematics' Sector Expert Commission – from 2009, and a foreign member of Royal Swedish Academy of Engineering from 1994.

**RTC cooperates as an associated member:**

- Electric Power Industry and Power Construction Association of Latvia (LEEAA),
- Latvian Information and Communications Technology Association (LIKTA),
- Latvian Authorized Automobile Dealers Association (LPAA),

- LR MES Education Quality Service, expert (College association delegation)
- LR Higher Education Quality Evaluation centre (AIKNC), expert
- Latvian Electrical Engineering and Electronics Industry Association (LEtERA), member of the board,
- Association of Mechanical Engineering and Metalworking Industries of Latvia (MASOC), expert.

**RTC is a member of Employers' Confederation of Latvia.**