

STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

**KAUNO KOLEGIJOS**

**STUDIJŲ PROGRAMOS *MAISTO TECHNOLOGIJA***

***(valstybinis kodas – 653E43001)***

**VERTINIMO** **IŠVADOS**

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**EVALUATION REPORT**

**OF *FOOD TECHNOLOGY***

**(*state code – 653E43001*)**

**STUDY PROGRAMME**

**at** **KAUNAS COLLEGE**

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3. **Assoc. Prof. Dr Robert van Deun,** *academic,*
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5. **Ms. Aušra Išarienė,** *representative of social partners’,*
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**Evaluation coordinator –****Ms. Natalja Bogdanova** |

Išvados parengtos anglų kalba

Report language – English

**DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ**

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| Studijų programos pavadinimas  | ***Maisto technologija*** |
| Valstybinis kodas | 653E43001 |
| Studijų sritis | Technologijos mokslai |
| Studijų kryptis | Maisto technologijos |
| Studijų programos rūšis  | Koleginės studijos |
| Studijų pakopa | pirmoji |
| Studijų forma (trukmė metais) | nuolatinė (3), ištęstinė (4) |
| Studijų programos apimtis kreditais | 180 |
| Suteikiamas laipsnis ir (ar) profesinė kvalifikacija | Maisto technologijų profesinio bakalauro laipsnis |
| Studijų programos įregistravimo data  | 2003-06-06 |

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**INFORMATION ON EVALUATED STUDY PROGRAMME**

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| Title of the study programme | ***Food Technology***  |
| State code | 653E43001 |
| Study area | Technology Sciences |
| Study field | Food Technology |
| Type of the study programme | College studies |
| Study cycle | First |
| Study mode (length in years) | Full-time (3), part-time (4) |
| Volume of the study programme in credits | 180 |
| Degree and (or) professional qualifications awarded | Professional Bachelor in Food Technology |
| Date of registration of the study programme | 06-06-2003 |

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# **I. INTRODUCTION**

## Background of the evaluation process

The evaluation of on-going study programmes is based on the **Methodology for evaluation of Higher Education study programmes,** approved byOrder No 1-01-162 of 20 December 2010 of the Director of the Centre for Quality Assessment in Higher Education (hereafter – SKVC).

The evaluation is intended to help higher education institutions to constantly improve their study programmes and to inform the public about the quality of studies.

The evaluation process consists of the main following stages: *1)*  *self-evaluation and self-evaluation report prepared by Higher Education Institution (hereafter – HEI); 2) visit of the review team at the higher education institution; 3) production of the evaluation report by the review team and its publication; 4) follow-up activities.*

On the basis of external evaluation report of the study programme SKVC takes a decision to accredit study programme either for 6 years or for 3 years. If the programme evaluation is negative such a programme is not accredited.

The programme is **accredited for 6 years** if all evaluation areas are evaluated as “very good” (4 points) or “good” (3 points).

The programme is **accredited for 3 years** if none of the areas was evaluated as “unsatisfactory” (1 point) and at least one evaluation area was evaluated as “satisfactory” (2 points).

The programme **is not accredited** if at least one of evaluation areas was evaluated as "unsatisfactory" (1 point).

## General

The Application documentation submitted by the HEI follows the outline recommended by the SKVC.

## Background of the HEI/Faculty/Study field/ Additional information

Kaunas College (hereinafter – KK) is one of the largest higher professional education institutions in Lithuania with a strong academic reputation. The initial target of the College is to ensure high quality of teaching and applied research. The graduates of the College are awarded Professional Bachelor degrees. The studies are practice orientated; students are able to apply their knowledge successfully in a real working environment.

At KK 50 study programmes are being implemented in the study areas of biomedicine, humanities, social sciences, technological sciences and arts. Over 7300 students are currently enrolled in KK study programmes. More than 22 thousand graduates have already joined the labour market. Applied research covers research performance, publications, publishing activity, conferences, seminars, exhibitions, expert activity, consultations, and artistic creativity. The Food Technology Study Programme (hereinafter – FT SP) is offered in the Faculty of Technology and Landscaping. The Faculty of Technology and Landscaping consists of 7 departments, where 16 study programmes are realised. The Department of Food Technology is responsible for the implementation of the Food Technology study programme.

## The Review Team

The review team was completed according to *Description of experts‘ recruitment*, approved by order No. 1-01-151 of Acting Director of the Centre for Quality Assessment in Higher Education. The Review Visit to the HEI was conducted by the team on *21st April 2015.*

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| 1. **Prof. Dr Frank McMahon (team leader),** *Emeritus Director of Academic Affairs ,Dublin Institute of Technology, Ireland and former Director of DIT College of Tourism and Food.*
2. **Prof. Dr Raul Filipe Xisto Bruno de Sousa,** *Former* *Professor at the Department of* *Sciences and Engineering of Biosystems, School of Agronomy, Technical University of Lisbon, Expert of A3ES Quality and Accreditation Agency, Portugal.*
3. **Dr Robert van Deun,** *Lecturer at Agro- and Biotechnology Department, Thomas More University College, Expert of the Dutch Flemish Quality and Accreditation Agency for Higher Education (NVAO), Belgium.*
4. **Assoc. Prof. Dr Rimgailė Degutytė,** *Lecturer at the Department of Food Science and Technology, Faculty of Chemical Technology, Kaunas University of Technology, Lithuania.*
5. **Ms.****Aušra Išarienė,** *Head of Food Department at the State Food and Veterinary Service, Lithuania.*
6. **Ms. Inga Kalpakovaitė,** *Bachelor student of Molecular Biology, Vilnius University, Lithuania*.

**Evaluation coordinator Ms. Natalja Bogdanova** |

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# **II. PROGRAMME ANALYSIS**

## 2.1. Programme aims and learning outcomes

The main aim of the Food Technology Study Programme (FT SP) is realistic, achievable and well defined. The main aim of FT SP is to train professionals capable of making technological and organizational decisions within the whole food production chain: apply new technologies for processing raw materials and food of plant and animal origin, design and implement technological processes and produce products that meet the requirements of the market. The aim and the learning outcomes of FT SP are publicly accessible. They are disseminated through websites and printed brochures. The information is available in both Lithuanian and English language (e.g. <http://www.kaunokolegija.lt/wp-content/uploads/2012/09/MT-EN1.pdf>). The College is present at different events with social partners to disseminate information about the FT SP.

The study cycle learning outcomes are presented in 5 categories: knowledge and its application, ability to perform analyses, special abilities, social competence and personal competence. The descriptions used for these global categories can be improved and defined more precisely e.g. “Knowledge and its application” could be changed to “General knowledge and its application” and “Special abilities” could be changed to “Knowledge of food sciences and its application”, since this category refers to the specific competences of a food technologist.

The study programme learning outcomes are relevant to the aim of the study programme. The combination of subjects offered in the curriculum, guarantee the achievement of these learning outcomes. Study programme learning outcomes include: knowledge of general sciences, the competences to design, implement, operate and control organizational and technological processes typical for food industries, the competence to solve problems related to food sciences, the responsible behaviour towards co-workers, society and environment, the ability to communicate with other specialists in food technology and the willingness to lifelong learning and personal development.

The programme offers two specializations: “Technology of Food of Animal Origin” and “Technology of Food of Plant Origin”. The subjects covered in these specializations are based on the main activities of Lithuanian food industry. This is evidenced by the success in attracting students, and by the acceptability of graduates to the Food industry.

The learning outcomes of the FT SP are based on the Dublin Descriptors and are consistent with the learning outcomes for first cycle degrees of the Bologna Framework and the European Qualifications Framework.

Data presented in the SER demonstrate that during the period assessed 54.7% of the graduates found employment in the food industry. During the meeting with social partners it became clear that only large enterprises can afford to employ graduates from the FT SP. Since many of the Lithuanian food companies are small and medium enterprises (SMEs) the future labour market needs continuous attention. The authors of the SER refer to this changing job market which is the result of changes both in technology and in economy.

Interdisciplinary integration is used as a method to prepare future graduates for this changing job market. Integration is achieved within the columns of food sciences: “Analysis and design of food of plant/animal origin”, “Design of production lines”, “Economic calculations practice”, “Food quality and Safety Practice”. The College should consider broadening this approach. Interdisciplinary integration should be achieved, not only within the range of food sciences, but also with the integration of marketing and management competences. The importance of market-driven decision making for future food technologists is recognized, but this competence is not clearly noted in the learning outcomes. The learning outcomes describe food quality almost exclusively from the position of food safety. For a consumer food quality is more than food safety. Taste, flavour, appearance, packaging, distribution channels, ease of use are equally important.

The programme aims and learning outcomes are consistent with the level of studies and the level of qualification offered (a Professional Bachelor degree). The award is based on the successful achievement of 180 ECTS credits which is in line with national and European requirements.

The name of the programme, Food Technology, its learning outcomes, its contents and the qualification offered are all compatible with each other.

## 2.2. Curriculum design

The legal requirements in Lithuania demand that the candidates for Professional Bachelor (first cycle) degrees must achieve at least 180 European Credit Transfer and Accumulation Scheme (ECTS) points. The FT SP leads to the award of a Professional Bachelor degree on the basis of 180 ECTS, which can be obtained during 6 semesters of full time or 8 semesters of part-time studies. The curriculum design meets the legal requirements in terms of volume of the programme. The number of course units per semester is 7 or less (requirement not more than 7). Volume of general subjects of the college level studies is 15 ECTS (requirement not less than 15 ECTS). Volume of subjects of study field is 135 ECTS (requirement not less than 135 ECTS). Volume of professional practice is 30 ECTS (requirement no less than 30 ECTS). Volume of the final thesis is 12 ECTS (requirement not less than 9). The study subjects are spread over the study years so that subjects of each year provide 60 ECTS for full-time studies and 45 ECTS for part-time studies, duration 3 years for full-time studies and 4 years for part-time studies. The volume of subjects is equal for full-time and part-time studies.

Based on the table presented in annex 6 of the SER and based on the findings during the visit of the Review Team, the chosen order of subjects is logical and justifiable. The first semester is focused towards general sciences. Then, the basic knowledge of food sciences gets the necessary attention, which is further elaborated in the specialization topics. However, some more attention should be given to basic sciences like chemistry and microbiology. There is no introductory course in general and organic chemistry neither is there basics of biochemistry. The programme relies heavily on knowledge about the subject acquired during secondary education. Shortcomings are remediated during consultations. This system seems to work for some students but this system also charges the workload of teachers. According to the subject description in annex 1 of the SER, the subjects “classification, morphology and physiology of microorganisms” and “biochemical activities of microorganisms and their application in food industry” are taught in 2 hours of lectures during the course “Basics of Food Microbiology”. No additional consultations or laboratory or practical work is mentioned in the subject description. Again, this approach relies heavily on previously acquired knowledge.

The Review Team suggests further consideration should be given to the subjects “Marketing” and “Sustainability”. As mentioned before, the College recognizes the importance of acquaintanceship with marketing and consumer needs for the future food technologist. But the subjects “Basics of Marketing“ and “Sensory Evaluation of Food and Consumer Surveys” are subjects of free choice. The College should consider making these subjects compulsory. “Sustainable food and sustainable food production” is not taught as a separate subject but is addressed as a topic in different courses according to the staff. In view of the increasing attention of European policy makers to the subject of sustainable food, the College should examine the possibility of introducing this subject in the study programme.

When the Review Team asked the representatives of the students and graduates for suggestions to improve the curriculum, both suggested a more intensive study of foreign languages. Currently, KK offers some optional foreign language studies in English (at different levels), Russian and Italian (although there is no reference to any resources for teaching Italian). Students and graduates believed this is not enough, hence their recommendation for more.

The Review Team observed that references used in final theses not always refer to the latest achievements in science instead e.g. “Wikipedia” is sometimes used as a reference. The Review Team concluded that the content of the programme reflects the latest achievements in technologies but not always in sciences. Further activity by staff in the area of scientific research will be required to reach the position where the content of the programme reflects the latest achievements in science. To achieve this position, further investment in research facilities will be required.

According to the SER and annex 6, one credit equals 26 hours of study. Calculated from the total full-time study programme this results in 15.9% of the total study time spent on lectures, 27.9% on practical work (seminars, laboratory work), 8.9% consultations (deepening consultations and catch-up consultations) and 47.3% self-study. For the part-time study programme this results in 5.7% of the total study time spent on lectures, 10.6% on practical work (seminars, laboratory work, etc.), 2.8% consultations and 80.9% self-study. The proposed timetable can be adapted to the needs of individual students. The students and the graduates the Review Team interviewed were satisfied with this allocation of study time. Students and graduates both from full-time studies and part-time studies were generally satisfied with the curriculum offered.

The description of the courses in annex 1 shows a great variety of didactic methods. Among others: lecture, individual work, practical work, case study, pair work and group work, discussion, individual study of literature, demonstration, brainstorming, etc. The College should continue their efforts to integrate the different subjects in assignments for students. Moodle is offered as learning platform for personalized learning environments. The implementation of this learning platform in the different courses is most satisfactory according to the students. The Review Team discussed the operation of the programme with students, graduates and social partners on any perceived weaknesses associated with graduates of the programme and were satisfied that the teaching methods are appropriate.

##  2.3. Teaching staff

The Review Team is satisfied that the method of recruiting staff is in accordance with the requirements of legal acts and the requirements set in normative documents of the College. These include both academic qualifications and experience of working in industry. In regard to the latter, there is a requirement that at least half the teachers should have 3 years or more work experience in industry. In fact, 66% of teachers have more than 3 years’ experience of working in the food industry while 97% have at least 3 years teaching experience. Details are available in annex 2. 17.8% of the volume of the study field subjects is taught by scientists, the legal requirement is not less than 10%. 79.3% of the teachers either hold a master degree or a corresponding equivalent qualification degree. Doctors of science comprise 20.7% of the staff. The specialists with core specialization in Food Technology related fields are well represented within the teaching staff of FT SP. At least 14 persons, among them 6 scientists, can be regarded as teachers in core subject oriented fields. Both graduates of the FT SP and social partners confirmed that they could appeal to the expertise of the staff of the College.

According to the SER, the FT SP is provided by 35 teachers but only 29 are listed in annex 2 and annex 3 (the difference may be due to temporary teachers appointed to supervise students’ final theses). According to the SER, 77% of the teachers are permanent. A permanent teacher has had a minimum of 128 contact hours during the last three years and published at least one scientific or methodological work indicating the College as an affiliation and which is included in the annual report of the College.

During the period assessed the average student/teacher ratio was 18.7. The Review Team considers this number is an adequate number to teach the programme. Students and graduates both from the full-time programme and the part-time programme commented favourably on the availability of teachers to meet and assist students when requested, which supports the view that the number of teachers is adequate.

The average age of the FT SP teachers is 47 years. There has been very little staff turnover in recent years apart from a re-organization of the departments in the College. As a result 7 teachers joined the Department of Food Technology. Staff turnover is not a problem.

The College has a programme of assisting staff to develop their qualifications and competences in their discipline and pedagogy, which includes formal and non-formal education. Formal education refers to the possibilities to improve one’s qualification by studying in Master or Doctoral studies. Only one teacher upgraded his qualification to a Master’s degree. The management confirmed to the Review Team that such an upgrade is financially supported by the College. Non-formal qualification development comprises teachers’ participation in seminars, conferences, courses, internships, exhibitions, projects, and international mobility programmes.

An analysis of the CVs presented in annex 3 of the SER, results in the following conclusions. 75.9% of the staff members were active in one or more scientific or applied research projects, 37.9% of the staff members were active in research related to food technology. The same situation applies for participation in projects. 86.2% of the staff participated in projects, 44.8% of the staff worked in projects related to food technology. 79.3% of the staff gave a presentation during a conference or a seminar. 72.4% of the staff prepared one or more publications. 79.3% of the staff was involved in expert, outsourcing and consulting activities. 48.3% is active as a member of specialized associations or societies. 55.2% of the staff used opportunities for international mobility. These figures demonstrate that all these activities and initiatives are widely supported among staff. Many of the research projects are looking at pedagogical or methodological issues connected with education in food sciences. Involvement in research directly relevant to food technology is lower. During the meeting with the Review Team, a lack of funding was generally indicated by the staff as the cause of this issue. The Review Team noticed that laboratories are well equipped for educational purposes but are not always suited for research purposes. The Review Team advices the College to look at research opportunities when investments are considered in laboratory facilities. On the other hand, teachers are involved in smaller research projects commissioned by food industry. The College also organizes seminars and trainings for food industry. Representatives of the social partners specifically mentioned the good quality of these seminars.

65 publications were prepared during the period assessed. Within this period an increase in publications produced is apparent. The Review Team acknowledges the fact that because of industrial intellectual properties it is not always possible to publish results of certain research assignments. The College should continue efforts to encourage teachers to disseminate information through publications.

80% of the teachers have European Computer Drivers Licence (ECDL) certificate and taking foreign language courses is a frequent practice, 70% of the teachers in 2013, which is supported by the College.

90% of the teachers upgraded their pedagogical or methodological qualification. According to the management, pedagogical trainings are provided but are not compulsory. The Review Team advises the College to make pedagogical qualifications compulsory for all new teachers.

Each year teachers have to develop an activity plan. This should include ways to improve their competencies. The activity plans are approved by the Department. They should also perform a self-evaluation to assess the progress made. This self-evaluation should also include visibility with social partners and the feedback of students.

## 2.4. Facilities and learning resources

Paragraphs 44-46 of the SER provide details about the number of classrooms, laboratories, and practical training facilities available for the FT SP. The Review Team inspected the facilities available to the FT SP and it was satisfied that the facilities and learning resources are adequate both in their size and quality.

The FT SP uses different laboratories: chemical analysis, microbiology, food quality analysis, process and apparatus, and sensory evaluation. The laboratories are well maintained and sufficiently equipped for educational purposes. For practical technology training the FT SP has different facilities at its disposal: laboratories for the production of bread, confectionery, meat products, dairy products and fermentations. These laboratories are equipped with instruments and devices used in typical small food processing businesses. These devices are ideal to simulate processing in full-scale technologies. These laboratories for practical technology training achieve the desired objective since social partners mentioned the strong practical skills of the students of the FT SP. Nevertheless, the Review Team would like to suggest taking into account possible research opportunities when new investments in these laboratories are considered.

The FT SP contains 7 practice modules, three of which are carried out in companies: Introductory Practice, Industrial Practice and Final Practice. The other practice sessions are carried out in the laboratories at the College. In addition to their own practice facilities, the FT SP has an agreement with the Kaunas Food Industry and Trade Training Centre. According to the director of this centre, the centre offers a supplement to the facilities in the College and will help with some practice sessions. Students did not experience problems finding suitable places for practice. They felt well prepared for the practice in companies.

FT SP can use 3 computer classrooms with a capacity of 15 to 20 seats and a video conference studio with a capacity for 90 students. WIFI is available in the premises of the Faculty of Technology and Landscaping, the library and the student hostel. Students can use the computers available in the new Study Centre and the computer classrooms to prepare their assignments.

The Review Team was impressed by the facilities of the new KK Study Centre. The study centre offers different solutions in a highly integrated manner. The centre combines a library of scientific literature with computer workstations with online access to scientific databases. The students can use open and closed workspaces equipped with desktop computers and interactive whiteboards for individual and group work. The centre holds a reading room, a linguistic classroom for language studies and also rooms specifically equipped for people with visual impairment.

During the period assessed the books and periodicals collection has clearly increased because of the opening of the new KK Study Centre. The collection of course books and educational methodological materials increased by 54.41%. In the study centre access to interlibrary loan and electronic databases is available for students and teachers. Using their College-login, students and teachers can access these databases through the KK website on all KK computers. Both free as well as subscribed scientific databases can be accessed, e.g. EBSCO Publishing, Reference Library, Taylor & Francis, Refworks. Onlinelibrary. Wiley, Academia Publishing, Eajournals, Highwire Press, Foodnavigator, Sciencedirect, Scirp, etc.

“Moodle” is firmly implemented as an e-learning platform. FT SP students may find learning resources of more than 50 subjects taught in FT SP on Moodle. An English version of some subjects taught in FT SP is also available on Moodle for incoming foreign students. Students confirmed the widespread use of Moodle.

## 2.5. Study process and students‘ performance assessment

The admission is organized according to the admission conditions and procedures by the Lithuanian Higher Institutions Association for Organizing Joint Admission (LAMA BPO). Requirements for admission are clearly formulated and accessible on the internet webpage of the College. The entrants to FT SP are required to have a secondary education. The main admission criterion is a competition score calculated from secondary school final examinations (Mathematics, Chemistry or Physics, Lithuanian language) or the average annual evaluation of the subject (Foreign language). Table 13 in the SER demonstrates a very high variation in competition marks of the entrants what implies highly variable knowledge base in every new class. During the meeting with the Review Team, representatives of the staff also referred to this issue as an important problem they have to deal with. As mentioned previously, the College needs to give continuous attention to this difference in basic knowledge between entrants and take this into consideration whenever the study programme, curriculum or study methods are reviewed.

On average, 50 students were admitted to the full-time programme and 30 students to the part-time programme each year. The number of applicants dropped from 744 to 546 (FT) and 341 to 238 (PT), 27% and 30%. However for the admission to the full-time programme the number of applications with priority number one for FT SP did not change importantly, on average 75 applications. For the part-time programme the number of applications in this category dropped by 50% over the period reviewed. This finding is explained by demographic changes in Lithuania. Since the launch of the new financing model of studies with competitive admission to higher education institutions, the majority of FT SP students have been entitled to state funding (full-time and part-time studies).

Theoretical lectures are delivered to larger groups (25-60 students), while the number of students is smaller in seminars and practical training classes (12-16 students) to provide more contact with the lecturer and the lab staff. Students testified that the communication between lecturers and students is friendly and open. Teachers are accessible for further consultations, and students feel supported by the teachers. The variety of study methods used enhances an active co-operation between the teacher and student and this should be maintained. During the interview with the Review Team, students confirmed that the timetable provides enough opportunities for self-study. Students described the e-learning platform “Moodle” as very useful for self-study.

All students must complete a final practice and a final thesis. Staff and students were familiar and satisfied with the procedures that need to be followed.

The most common reasons for termination of studies are: voluntary withdrawal, expulsion for underachievement and failure to meet financial obligations. During the interviews with the Review Team, lack of interest or motivation among students was often mentioned as one of the main reasons. Some of the students in the part-time programme can’t finish the final thesis before the set deadline because of the combination work – study. Individual talks are organized with students who intend to terminate their studies. During the period assessed, positive results were achieved by emphasizing prevention work to address this problem. The College should increase and formalize this preventive and pro-active approach.

During the period assessed 34 students participated in the National Student Conference with a presentation or a paper, 29 publications by students resulted from this participation. Staff and students are enthusiastic about this student conference. The national student conference “Application of Innovations in Technologies” has been organised by the College at the Faculty since 2007. The collections of conference articles are published referring to the conference presentations. In their presentations, students analyse potential applications of non-traditional or natural raw materials in food processing or present the results of technological research. During the period assessed, 34 students of the FT SP gave oral presentations or wrote papers on the occasion of these conferences, 29 publications were published. 4 students participated with presentations in the student conference “Business and Technology Insights” in Klaipeda State College. In 2014, the Student Scientific Association (SSA) was established at KK Faculty of Technologies and Landscaping, with the objective of promoting applied scientific research activities and developing interdisciplinary research.

These are all fine initiatives to promote a scientific approach among future food technologists, but there is still room for improvement. The College should pay special attention to the final theses. The work done as part of the final thesis is presented as examples of applied research. In some cases maybe a scientific approach starting from a research question was used to prepare the final thesis but in most cases the final thesis discusses a problem/subject given by a food company. It is logical that in a professional bachelor programme the subject of a final thesis is based on actual problems of food companies, but these problems should be sufficiently complex and encourage the student to explore the scientific background.

Although scientific databases are readily accessible in the study centre, the references used in final theses were often of poor scientific quality. Supervisors of the final theses should encourage the students to pay more attention to the scientific background of the topics covered.

Innovative product development is encouraged by the annual organisation of a competition “from ideas to practice”. The College could consider participating with a team in the European “Ecotrophelia” competition for food product development.

Students are informed about the mobility programme through documents describing different procedures and through information on the KK website. During the period assessed only 3% of the students applied to one of the possibilities offered by the mobility programmes (Erasmus+, Erasmus, bilateral or trilateral co-operation agreements). This is far too low, well below the European target of 20% of all students to have studied outside their home country by 2020. Efforts will have to be increased in this regard. During the interview with the management this issue was addressed by the Review Team. The management was aware of the problem. In the short term they aim at 10% mobility among students. The lack of knowledge of foreign languages was put forward as the main cause. They also claimed that local food companies require students with international experience because of the increasing export opportunities for Lithuanian food industry; this strengthens the case for increased mobility. Some students maintained that it was difficult to apply ECTS credits earned abroad to their programme in KK. As a result, students had to complete further courses when they came home, thereby prolonging their programme beyond 3 years of full-time study.

Efforts are made to accept incoming students from abroad. Lectures are taught in English and an individual teaching plan is developed for the incoming student. Two foreign students came for partial studies in this study programme in 2010/2011, 9 students in 2011/2012, 8 students in 2012/2013 and 5 students in 2013/2014.

Several actions and procedures are implemented that should help and motivate students during their studies, e.g. specific welcome of first year students, group mentors, consultations, national student conference, etc.

Different possibilities for financial assistance for students are available, e.g. social scholarships for student with disabilities and students under temporary state custody. The faculty offers sufficient hostel rooms for students and a catering service in the Faculty canteen and vending machines. The students confirmed that the facilities offered at the dormitory were satisfactory. But they commented that it is not always a study-friendly environment. Students can use the sports hall and get discounts for the swimming pool. The Student’s Association organises cultural, social and sports events.

Students are provided with non-formal psychological and moral support by any member of staff. Students of the FT SP claimed there is sufficient help with possible social problems, because all members of staff and even management are easily approachable.

The assessment system is established in the “Study Process Procedure”. Teachers should inform students about the assessment procedure. During the first lecture, the teacher of the study subject introduces students to the Individual Cumulative Assessment procedure and the assessment criteria of the study subject. Only those abilities, skills and knowledge are assessed, which have been stated in the content and aims of the study programme. This information is publicly available. Different assessment methods are applied: oral assessment methods, written assessment methods, graphic and visual assessment methods. Students are informed about the assessment results and students get the opportunity to discuss these results with the teachers. This assessment procedure is functional and allows sufficient feedback to students.

During the period assessed between 54.55 and 70.00% of the admitted full-time students graduated. For part-time students during the same period the difference is even more important between 33.33% and 84.62%. When this issue was discussed with the graduates the Review Team met, a lack of motivation among some students was indicated as the main reason for these fluctuating figures. Some of the part-time students face a specific problem. Because of the difficulties to combine work with study, these students often finish the final thesis after academic leave. Nevertheless, this issue needs further attention by the College.

Although social partners claimed to be very satisfied with the qualities of the graduates of FT SP, data presented in the SER demonstrate that during the period assessed only 54.7% of the graduates found employment in the food industry. During the meeting with social partners it became clear only large enterprises can afford to employ graduates from the FT SP. Total employment was 79.2% during the period assessed. 6.6% of the graduates went abroad.

During the period assessed, 9.4% of the graduates continued studies to progress to a Master’s degree in Kaunas University of Technologies, Vytautas Magnus University, Aleksandras Stulginskis University, or Lithuanian University of Health Sciences. A difficult bridging programme was mentioned by the graduates whom the Review Team met, as a reason why some graduates hesitate to upgrade their qualification. The College should examine the existing gaps to better prepare graduates who want to upgrade their qualification.

## 2.6. Programme management

The structure and implementation of the programme management are secured in different documented procedures. These documents are available on the electronic document management system “Kontora” of the College. Responsibility for the FT SP management lies with the Faculty of Technologies and Landscaping, FT Department, the Committee of FT SP and the Offices of Kauno Kolegija. The responsibility for the implementation and quality assurance of the study programme lies with the Committee of FT SP and the department staff.

The College applies a system of annual self-evaluation reports at all levels: teacher, department, faculty, college. These reports are crucial in the quality management process of the College. These self-evaluation reports and the related activity plans assure a continuous quality improvement and clarity on responsibilities. The results of the quality analysis and measures taken as a result of this analysis are made publicly available through the College website and several publications.

In the Study Programme Committee social partners, teachers and students are represented. The Committee provides recommendations about the improvement of the study programme annually, considers and provides suggestions on the implementation of recommendations of external evaluation experts. The Committee then prepares new study programmes. During the meeting with the Review Team, the social partners confirmed their involvement in the review of the study programme. On the occasion of the presentation and defence of the final theses the learning outcomes of the FT SP are discussed with stakeholders. Social partners mentioned that their feedback on practical work of students in food companies is also used to update the study programme. Generally the social partners were satisfied with the content of the study programme. They appreciated the strong practical skills and the “down to earth” approach of the College. Based on experiences with employed graduates of this programme, they can be employed as operator or supervisor of part of a larger production line consisting of complex technology. Nevertheless the tendency of decreasing enrolment and the relatively poor employment rates in Lithuanian food industry should be addressed by the Study Programme Committee. The Committee should also consider using international benchmarking of learning outcomes, for example by giving more attention to the findings of organisations like ISEKI and EURASHE since the College has connections with both organizations.

Since 2004 the College uses different surveys to analyse the quality perception of the programme among students: surveys on the quality of studies, student adaptation at the college, and content of the subjects. At the end of each semester, students are invited to complete a survey with feedback about the teacher and the subjects taught. This survey is not compulsory but students are happy to participate. Students indicated to the Review Team that they were consulted on the development of the programme.

In 2012 a survey was performed among graduates of the FT SP to consult them on the study programme. Compared to other stakeholders, the graduates are not firmly present in the process of reviewing of the study programme. Especially in view of the possibilities of upgrading their qualifications, the opinions of graduates should get more attention.

Different indicators prove the contact between College and stakeholders: the number of cooperation agreements with social partners, the results of practical abilities evaluation (assessment), the number of cooperation agreements with the departments of other higher education institutions, and the number and results of the activities initiated for the improvement of the study quality process, i.e. FT Department teachers’ training, the quality of study programmes and subjects, and the opinion of students, social partners, and employers about the quality of graduates’ training. Social partners testified that their experiences with students during practice in the companies are taken into account by the College.

The College implemented an internal quality assurance model based on the principles of Total Quality Management. The College established an Office of Strategic Planning and Study Quality Management to assure effective internal quality assurance in the College. The Review Team was satisfied that the College internal quality assurance measures are effective and efficient and furthermore that they are in line with European Standards and Guidelines.

There is evidence that the management use the outcome of surveys to improve the programme. There is also clear evidence that the College has implemented the recommendations of the 2012 SKVC review and has thereby improved the programme. Especially the reorganisation of learning outcomes and subjects and the more formal involvement of stakeholders in the programme management are improvements based on the 2012 SKVC review.

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## 2.7. Example of excellence

An example of excellence is the development of a Study Centre that integrates different functions. This Study Centre offers much more opportunities to staff and students than the traditional library with reading rooms. Access to different types of media is possible at one central place. Furthermore, all the facilities are present to use these media for individual study, group work or research.

# **III. RECOMMENDATIONS**

* 1. The descriptions of the learning outcomes of the study cycle should be improved. In the learning outcomes of the study programme the view of food quality should be reviewed. Food quality should be described not only from the position of food safety but also consumer and market needs.
	2. The Department should broaden the interdisciplinary integration. Interdisciplinary integration should be achieved, not only within the vertical column of food sciences, but also horizontally with the integration of marketing and management competences and attention to sustainability.
	3. Attention should be given to basic sciences like chemistry and microbiology. There is no introductory course in general and organic chemistry, or of basics of biochemistry. The programme relies heavily on knowledge about the subject acquired during secondary education. Shortcomings are remediated during consultations. This system seems to work for some students but this system also charges the workload of teachers. Continuous attention is needed since the very high variation in competition marks of the entrants implies a highly variable knowledge base in every new class.
	4. The Department should consider making the subjects “Basics of Marketing” and “Sensory Evaluation of Food and Consumer Surveys” compulsory, because of the importance of acquaintanceship with marketing and consumer needs for the future food technologist.
	5. The Department should consider introducing a separate subject dealing with “Sustainable food and sustainable food production”. This subject is becoming more and more important for European consumers and European policy makers.
	6. The Department should try to intensify the study of foreign languages. This creates more opportunities for student mobility.
	7. The Department should pay more attention to the scientific quality of the final theses. The students should start with a sufficiently complex practical problem that encourages them to explore the scientific background of that problem.
	8. Staff should be encouraged to increase applied research related to food technology. This will have to go together with more investment to upgrade the laboratory facilities. The Department should encourage staff to disseminate knowledge acquired by applied research and consultancy assignments through publications.
	9. The Department should increase and formalize the preventive and pro-active approach to deal with the problem of dropouts.
	10. The Department should seek to increase student participation in mobility opportunities and should ensure that credits earned by students on mobility are easily applied to their academic record.
	11. The Department should consider intensifying the involvement of graduates in the process of reviewing the study programme, especially in view of the possibilities of upgrading the obtained qualification.
	12. The Department should consider using international benchmarking of learning outcomes.

# **IV. SUMMARY**

The main aim of the Food Technology Study Programme (FT SP) is well defined and publicly available. It is to train professionals capable of making technological and organizational decisions within the whole food production chain: apply new technologies for processing raw materials and food of plant and animal origin, design and implement technological processes and produce products that meet the requirements of the market.

The learning outcomes of the FT SP are based on the Dublin Descriptors and are consistent with the learning outcomes for first cycle degrees of the Bologna Framework and the European Qualifications Framework. The links between study programme aims, learning outcomes and study subjects are clear and realistic. The programme offers two specializations: “Technology of Food of Animal Origin” and “Technology of Food of Plant Origin”. The subjects covered in these specializations are based on the main activities of Lithuanian food industry. The programme aims, learning outcomes and the content of the subjects are consistent with the level of studies and the level of qualification offered, a Professional Bachelor degree.

During the period assessed, 54.7% of the graduates found employment in food industry. Since many of the Lithuanian food companies are SMEs, the future labour market needs continuous attention. Interdisciplinary integration is implemented as a method to prepare future graduates for this more frequent job rotation. KK should consider broadening this approach by achieve more horizontal interdisciplinary integration with the integration of marketing and management competences. The importance of market-driven decision making is not clearly noted in the learning outcomes. The learning outcomes describe food quality almost exclusively from the position of food safety.

The chosen order of subjects is logical and justifiable. The content and methods of the subjects and modules are appropriate for the achievement of the learning outcomes. However, some attention should be given to basic sciences like chemistry, biochemistry and microbiology. The programme relies heavily on knowledge about these subjects acquired during secondary education. Shortcomings are remediated during consultations. This system seems to work for some students but this system also charges the workload of teachers. This issue becomes even more important if the very high variation in competition marks of the entrants is taken into account. The Review Team suggests further consideration should be given to the subjects “Marketing”, “Sensory evaluation” and “Sustainability”. KK recognizes the importance of acquaintanceship with marketing and consumer needs for the future food technologist, therefore KK should consider to make the subjects “Basics of Marketing“ and “Sensory Evaluation of Food and Consumer Surveys” compulsory. “Sustainable food and sustainable food production” is only addressed as a topic in different courses. In view of the increasing attention of European policy makers to the subject of sustainable food, the College should examine the possibility of introducing this subject in the study programme. When the Review Team asked the representatives of the students and graduates for suggestions to improve the curriculum, both suggested a more intensive study of foreign languages.

A great variety of didactic methods is used in the FT SP. KK should continue their good efforts to integrate the different subjects in assignments for students. Moodle is offered as learning platform for personalized learning environments and the implementation is most satisfactory according to the students.

The Review Team is satisfied that the method of recruiting staff is in accordance with the requirements of legal acts and the requirements set in normative documents of KK. The number of staff is adequate to ensure learning outcomes and there is very little staff turnover. The specialists with core specialization in Food Technology related fields are well represented within the teaching staff. Both graduates and social partners confirmed that they could appeal to the expertise of the staff. Each year teachers have to develop an activity plan. This should include ways to improve their competencies based on a self-evaluation process. KK has a programme of assisting staff to develop their qualifications and competences in their discipline and pedagogy. The Review Team advises KK to make pedagogical qualifications compulsory for all new teachers. Teaching staff is involved in applied research but applied research directly related to the FT SP should be increased. This probably needs an upgrading of the laboratory facilities. Staff members are involved in projects commissioned by the food industry. KK also organizes seminars and training for the food industry. The College should continue efforts to encourage teachers to disseminate knowledge through publications.

The laboratories are well maintained and sufficiently equipped for educational purposes. For practical technology training the FT SP has different facilities equipped with devices appropriate to simulate processing in full-scale technologies. Students did not experience problems finding suitable places for practice. They felt well prepared for practice in companies. The facilities of the new KK Study Centre are excellent. The study centre offers different solutions in a highly integrated manner e.g. scientific literature, scientific databases, workspaces, PC’s, interactive whiteboards, etc.

Requirements for admission are clearly formulated and accessible on the internet webpage of KK. The assessment system is established in the “Study Process Procedure”. All students must complete a final practice and a final thesis. Staff and students were familiar and satisfied with the procedures that need to be followed. The scientific basis of the final thesis should be developed by formulating sufficiently complex problems. Also, KK should increase efforts to encourage student mobility.

The structure and implementation of the programme management are secured in different documented procedures. KK applies a system of annual self-evaluation reports at all levels: teacher, department, faculty, college. This system is crucial in the quality management process of KK. These self-evaluation reports and the related activity plans assure a continuous quality improvement and clarity on responsibilities. KK uses different surveys to analyse the quality perception of the study programme among students, graduates and stakeholders. Students, teachers and social partners are represented in the Study Programme Committee. A stronger involvement of graduates in the process of reviewing the study programme should be considered, especially in view of the possibilities of upgrading the obtained qualification. Generally, students, graduates, teachers and social partners were satisfied with the content of the study programme. Nevertheless, the tendency of decreasing enrolment and the relatively poor employment rates in Lithuanian food industry should be addressed by the Study Programme Committee. The Committee should also consider using international benchmarking of learning outcomes. The Review Team was satisfied that the internal quality assurance measures are effective and efficient and furthermore that they are in line with European Standards and Guidelines.

# **V. GENERAL ASSESSMENT**

The study programme *Food Technology* (state code – 653E43001) at Kaunas College is given **positive** evaluation.

*Study programme assessment in points by evaluation areas*.

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| --- | --- | --- |
| **No.** | **Evaluation Area** | **Evaluation of an area in points\*** |
| 1. | Programme aims and learning outcomes  | 3 |
| 2. | Curriculum design | 3 |
| 3. | Teaching staff | 3 |
| 4. | Facilities and learning resources  | 4 |
| 5. | Study process and students’ performance assessment  | 3 |
| 6. | Programme management  | 3 |
|   | **Total:**  | **19** |

\*1 (unsatisfactory) - there are essential shortcomings that must be eliminated;

2 (satisfactory) - meets the established minimum requirements, needs improvement;

3 (good) - the field develops systematically, has distinctive features;

4 (very good) - the field is exceptionally good.

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| --- | --- |
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