



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

VILNIAUS GEDIMINO TECHNIKOS UNIVERSITETAS  
STUDIJŲ PROGRAMOS *INŽINERINĖ EKONOMIKA IR  
VADYBA (valstybinis kodas – 621N20024)*  
VERTINIMO IŠVADOS

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**EVALUATION REPORT**  
**OF ENGINEERING ECONOMICS AND MANAGEMENT** (*state  
code – 621N20024*)  
**STUDY PROGRAMME**  
at VILNIUS GEDIMINAS TECHNICAL UNIVERSITY

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## DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Inžinerinė ekonomika ir vadyba</i>
Valstybinis kodas	621N20024
Studijų sritis	Socialiniai mokslai
Studijų kryptis	Vadyba
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Antroji
Studijų forma (trukmė metais)	Nuolatinės studijos (1,5)
Studijų programos apimtis kreditais	90 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Vadybos magistras
Studijų programos įregistravimo data	2012-04-04

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## INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<i>Engineering Economics and Management</i>
State code	621N20024
Study area	Social Sciences
Study field	Management
Type of the study programme	University studies
Study cycle	Second
Study mode (length in years)	Full-time (1,5)
Volume of the study programme in credits	90 ECTS
Degree and (or) professional qualifications awarded	Master of Management
Date of registration of the study programme	04-04-2012

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## I. INTRODUCTION

### 1.1. 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 by Order 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).

### 1.2. General

The Application documentation submitted by the HEI follows the outline recommended by the SKVC. Along with the self-evaluation report and annexes, the following additional documents have been provided by the HEI before, during and/or after the site-visit:

No.	Name of the document
1.	Study Programmes Committee’s action plan for Organization Management and Engineering Economics and Management programmes

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

Vilnius Gediminas Technical University is one of the largest higher education institutions in Lithuania having a wide range of Faculties and study programmes in various study areas. The Engineering Economics and Management Programme (hereafter: *Programme*) belongs to the

Faculty of Business Management. The field of study is management, therefore the Programme has to meet the requirements of Master's programmes in that particular field. The self-assessment report (hereafter: SAR) refers to the proper legal acts, decrees and other regulatory documents.

The Programme was launched and registered officially in 2012. However, an earlier version of the programme with the same name has been implemented in the Faculty in 1997. It was assessed in 2005. The new, redesigned study programme took the recommendations of the visiting expert team into consideration.

The assessment period of the recent review starts with 2012. The length of the programme is 1,5 years, 3 cohorts have been graduated. One of the specialties of the Programme is that the students have to choose a specialization. **A new specialization was established in 2015 (Aviation Management):** the first students from that specialization graduated just before the expert visit.

#### **1.4. The Review Team**

The review team was completed according *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 HEI was conducted by the team on 07/02/2017.

1. **Prof. dr. József Temesi**, *Corvinus University of Budapest, Department of Operations Research and Actuarial Sciences, professor emeritus, Hungary.*
2. **Prof. dr. Inga Lapiņa**, *Riga Technical University, Faculty of Engineering Economics and Management, Vice Dean for Academic Affairs, Latvia.*
3. **Ms. Viire Täks**, *University of Tartu, Faculty of Economics, School of Economics and Business Administration, specialist, Estonia.*
4. **Mr. Gintautas Kučas**, *Lithuanian Marketing Association, Managing Director, Lithuania.*
5. **Ms. Julija Stanaityte**, *Kaunas University of Technology, Student of Master Study Programme "Human Resource Management".*

## **II. PROGRAMME ANALYSIS**

### **2.1. Programme aims and learning outcomes**

The name of the Programme suggests that the curriculum integrates two areas: application of economic principles, and organizational, administrative, problem-solving tools for management. The target group of that type of study programmes in the international practice is mostly engineers. The SAR is quite concise in identifying study aims. It says that the programme will

provide high level knowledge taking into account market needs and interests of society. The further descriptions clarify that the objectives of the study programme can be found in the specializations. The declared main objective is to train the students for managing particular economical and managerial processing in the changing environment efficiently, for creating value for the consumers, and for implementing scientific research. Thus, the **aims of the programme are comprehensively formulated**, and make it clear that **the target group is rather wide**.

The expert team concluded that **the name of the programme is not in strong compatibility with the content of international examples** under the same title. Specialized areas (Aviation Management, e-Business Management) are mixed with more general modules (Production Management, Innovation Management), while Entrepreneurial Leadership and Business Projection specializations are focusing on specific functions of the enterprise. Another crucial point is that the programme has double character. It can be seen as one programme with six specializations. If that were the case the sequence of courses would start with the core courses in the first semester followed by the specialization subjects after choosing a specialization (before the second semester). However, **the students have to choose the specialization before their admission**. Therefore a second interpretation seems to be stronger: **there are six programmes with a common core**. From an academic viewpoint the difference is that the aims and the learning outcomes have to reflect to all specializations simultaneously, and the mix of compulsory and specialization courses have to form a unity in each of the six cases. This is an ambitious and challenging task to be completed in a 90-credit programme.

The issue has been discussed with the management, and the expert team accepted the approach of the Faculty – the main subjects and the specialization subjects link the Programme to the declared general objectives together – as a guiding principle in the assessment process. Thus the expert team concentrated on the quality issues accepting the structure as it has been described in the SAR.

During the meetings with the management and the SAR-group the experts realized that there is a strong competition in the market of Master's programmes in Lithuania. The institutions want to distinguish their programmes from the competitors. It is understandable that the Faculty of Business Management also diversified its programmes, and the promotion of the Engineering Economics and Management programme could benefit from the specialization areas. The expectation is that the clearly formulated objectives of the six specializations together with real market needs would attract applicants. Unfortunately – as it can be seen from the data – this goal was just partly achieved. The recommendation of the expert team is that **after the first 5 years the Programme Committee has to analyse the public acceptance of the Programme and to**

**make the necessary revision.** It is recommended that additional emphasis be given to further comparative analysis and differentiation of the defined aims, objectives and learning outcomes from other programmes, taking into account the strengths of the Faculty, strategic goals of the university, and the needs of Lithuanian society.

A market survey would show directions for further development: it is possible that some specializations have to be cancelled and some new specializations have to be designed. At the moment the only market information is the number of students in each specialization (SAR, page 24, Table 17). Due to the small number of applicants the distribution of students with first priority for the specializations has large deviation (First priority applicants' number (admission number) of the academic year 2015 to specialization E-business Management – 2 and (0), to Production Management – 6 and (6), to Innovation Management – 1 and (0), to Business Projection – 3 and (7), Entrepreneurial Leadership – 5 and (0), to Aviation Management – 18 and (15)). Having the first priorities of the applicants in each academic year and the market analysis in hand, the Programme Committee could decide on the necessary changes.

The detailed **description of study objectives in the SAR consists of two parts.** The first part is common for all specializations. The 3 core subjects and the chosen compulsory subjects (Option 1 and Option 2) serve for providing the appropriate background. (It should be mentioned that the aims and learning outcomes of the programme have to be complemented with the aims and learning outcomes of the Master's level mandatory subject areas for all applicants as they are determined in the entrance requirements.) The second part of the study objectives can be found in the description of the specializations. The objectives **are in accordance with the content of the corresponding specialization subjects.**

The SAR describes learning outcomes of the programmes in blocks, too. **The descriptions meet the requirements.** The standards of learning outcomes are common for all course units in each category (core and specialization). The expert team looked at the course descriptions to verify their objectives. The aims of the courses are very concise (one sentence), but they reflect to the programme objectives properly.

Regarding the learning outcomes of the course units the expert team found that **the teaching staff** is familiar with the general and specific concept of the learning outcomes and they **have been able to form proper learning outcomes.** The unified course description template gives a solid framework for them. The connection between the programme outcomes and course outcomes has been described in each course unit, and the descriptions cover the content of the subject. The students have an access to the learning outcomes from the learning platform.

## 2.2. Curriculum design

Despite of the fact that the structure and volume of the Programme correspond to the legal requirements for Master studies the expert team concluded that either the length of the Programme or the proportion of contact hours has to be extended to achieve its goals. The recent Programme covers 90 credits, which is the minimum of the required amount. Taking into account that the majority of students have full-time jobs (and this tendency will probably not change in the near future), 80% of the total workload of the students is individual work (including the Final Thesis).

It is much more than the minimum requirement (which is 30%), and exceptional for full-time studies.

The contact hours are held in the evenings and the students have one course at a time. That kind of time allocation is a new development in some colleges and universities worldwide, it was applied mainly in online programmes before. It makes the life of the students easier, however, one of the drawbacks is that the curriculum is closed, isolated from other programmes, where the courses follow the traditional track, and as a consequence the students could not choose elective courses from the offering of the Faculty.

The programme consists of 3 core courses (20 credits), two optional packages of compulsory subjects (with 3 and 2 courses, 14 credits), a specialization block with 3 courses (20 credits), a training practice (8 credits) and Thesis work (30 credits). Students who lack basic management education are required to take additional courses as a prerequisite to the Programme.

The **core courses provide the students with advanced knowledge** in certain management areas (Management Theory, Management Accounting, Strategic Management, Marketing), and **new Master's level subjects areas are also introduced** (Business Law, Engineering Economics). The Methodology of Scientific Research course is a must in a Master's programme. Part of the basic courses can be chosen from Option 1 and Option 2, thus **the logic of the mandatory subjects is broken**. As an example: Business Law, Managerial Accounting and Flight Safety are in one block, and the students have to choose only one – it is arbitrary. Those students, for instance, who choose the Flight Safety course, will not study any of the other two important subjects. Flight Safety can be a proper foundational course for those who chose the Aviation Management specialization, but it does not replace a general management course. It would rather be placed in the specialization block.

The specializations also include key management courses according to the topic of the specializations, e.g. Production Management and Organization, Entrepreneurship, or Innovation Management (in separate specializations). The final result is an “a’ la carte programme” having



several good courses which are not really built on each other, and with specializations which vary every year: due to the small number of applicants only 2 or 3 specializations (specialized programmes) have been running at a time.

The overall view of the expert team is that **the Programme is too fragmented with offering six specializations**. It is true that the freedom of students is high to apply according to their interests, but **there are academic, organizational and capacity arguments to rethink the recent offer of specializations**. A clear strategy towards offering a few professional Master's programme, or a shift to the direction of a strong MBA programme could be a solution, too.

Annex 1 of the SAR contains the course descriptions. **The content of the individual subjects is consistent with the Master's level**. The course descriptions contain appropriate learning and assessment methods corresponding to the practice of the Faculty. A **variety of teaching methods are in use**, including group discussions, case study analysis, home assignments, presentations, project work etc.

**The programme includes practice** as an integral part of the programme. Organization of the practice period, evaluation of the practice and its role in the Programme are not clear from the SAR (page 14). The course descriptions contain training practice syllabi. They are assigned to the specializations, but the structure and the content of the descriptions are unified. The expert team asked for additional information during the visit. Every specialization has a responsible person to organize the placement, and company supervisors are also used. The **assessment of training practice** is based on a written and an oral report supplemented by the evaluation of the internal supervisor.

Due to the compact nature of the programme the added value of the practice is questionable. The allocation of Thesis work credits includes 3-3 credits in the first and in the second term as preparatory activity. The second term credits could be used for a project connected to the Thesis work and replacing the training practice. A new course could use the 6 credits.

A non-formal requirement is that the course materials would not include too many old editions of books and textbooks, and at least a few new titles (some in English) have to be prescribed. The course descriptions meet that requirement. Unfortunately, it is not clear from the descriptions, which is the **basic textbook** for the courses and how many pages of recommended professional literature are required approximately. The list of compulsory and recommended readings is quite extensive and it is doubtful if students were able to read the material within the hours allocated to the course. Overall, **the list of readings is text-book centred** and only a few scientific articles are offered either in compulsory or recommended sections. The expert team advises **original research articles to be included in the reading list**.

Master's Thesis works form a significant part of the Programme: one third of the credits is assigned to the Thesis work. It is crucial that the entire process of writing and defending the Thesis would be well-regulated, transparent and productive. The University approved the newest regulation on this topic in 2015. **The students can get detailed instructions how to write and defend their Thesis work** (the electronic version of the manual is available for the students). One of the most important rules is that the selected topic of the Thesis work must comply with the study programme and specialization. Details are provided in the SAR as to each specialization (pages 15-17). Annex 4 of the SAR is a **list of Thesis titles**. The expert team checked the list and confirmed the compatibility by titles. During the visit the members of the team had the opportunity to see the students' works and to check the format, the citation mode, the references, the methodological and analytical tools had been applied. The expert team found that the requirements are met, however, less proportion of electronic (Internet) references would be advisable.

### ***2.3. Teaching staff***

The programme meets the requirement that not less than 80% of all the academic staff has a PhD – **80-100% of the staff of the Programme hold a doctoral degree**, it was 100% in 2015. The distribution of qualified teaching staff is good (5 full professors, 13 associate professors and 3 lecturers in the academic year 2015/2016). The staff belongs to different departments of the Faculty, most of them have full-time position. According to the information from the SAR, the majority of the staff have a long record at the Faculty, **turnover is low**, the Programme has stable teaching staff.

**The age distribution of the teaching staff is good**, but promotion or hiring of full professors might be needed, because 4 of the 5 full professors are above 65. More than 40% of teaching staff is female, showing **good gender balance**.

According to the requirements 20% of the major study field subjects have to be taught by professors. The Programme has 3 compulsory and 5 optional study field courses (in two blocks). Two of the 8 subjects (25%) are taught by a professor (Management Accounting, Marketing), 4 of the courses (Methodology of Scientific Research, Management Theory, Business Law, Strategic Management) are taught by associate professors, one course (Engineering Economics ) is taught by a lecturer.

Some of the specializations are practice oriented. The Faculty has good relationship with the local industry, however, the SAR does not give details about invited speakers from local companies and other organizations (there is one exception: the brand new Aviation Management specialization, where the Faculty and the Aviation Institute have joint responsibility in delivering

the courses). During the visit the expert team asked the management and the partners about the situation and recommends a larger involvement of local partners in the Programme.

The staff travelled abroad mainly under the framework of the Erasmus exchange programme (43% of all travels), and most of them (75%) have teaching experience abroad. These figures demonstrate that staff mobility indicators in the internationalization process of the Faculty are good and developing.

The Faculty provided a list of invited foreign lecturers. It proves that they have proper channels to collaborate in teaching, however, the evaluation is focusing on the particular programme, and not the Faculty as a whole. **The Programme would greatly benefit from more invited foreign experts and active business leaders** sharing their experience.

The number of students in the Programme is low, therefore **the student/staff ratio is very low**: 2,9 in 2013, 1,3 in 2015. Those figures demonstrate that the capacity of the Faculty has much more potential. **The workload of teachers is relatively low in the Programme**: 7% of their total workload. The other 53% have been used in other programmes (further 40% are assigned to methodological, administrative and scientific work). The participation of departments is uneven, e.g. one third of the staff involved in the Programme came from the Social Economics and Management Department in 2015/2016.

The Senate of the University regulates the periodical qualification of teaching staff in all positions. The staff members have to spend an internship (1-4 months) in a business company or a scientific organization. They can also spend the internship abroad. The regulation was approved in 2014, and the implementation is in progress. The SAR describes a large number of training courses have been participating by the staff of the Programme. The expert team asked the teachers about the benefits of that regulation. According to their opinion **the internship periods are useful** for them.

Research activity is an important part of the teaching staff workload in a Master's programme. The SAR gives a general description on these activities: participation and presentations in international conferences, positions in the editorial boards of national and international scientific journals, publication of articles and books in Lithuanian and in foreign languages, participation in domestic and international research projects. **The overall picture is good and acceptable**. The listed activities demonstrate dedication and quality in research. A minor remark of the expert team is – looking at the CVs and publication lists of the staff –, that the participation and effectiveness in research activities are unevenly distributed: there are staff members who have a number of publications in English and articles in refereed scientific journals, but the majority have publications in Lithuanian, mainly. Textbooks, project papers, methodological materials can be found in the publications, too. **It is a good practice, that**

according to the Faculty management publications in highly cited journals are recognised. Contributions to high-quality academic journals and participation in main events of the most respected international professional associations have to be **further** encouraged and supported by the management of the Faculty.

#### *2.4. Facilities and learning resources*

All lectures of the Programme are taught in the premises of the Faculty. The infrastructure includes university library, auditoria, computer labs: all of them have been used by students of other programmes, too. The class size in the Programme is quite small, therefore a sufficient number of different types of classrooms are available for the students. All equipment have been updated and the necessary hardware and software for computerized classes are available in the labs of the Faculty or in VGTU Library. Furthermore, university has „LinkMenų fabrikas“ which is very good place for students‘ to do their interdisciplinary projects, implement their business ideas.

Faculty Library provides students with all teaching materials they need. The library offers useful databases, various programmes, work rooms, books etc. The students have access to the required study materials in various channels. They could use all databases from home using VPN connection. All learning material from teachers are provided in Moodle platform. Moodle is being used by teachers and students efficiently, as students mentioned textbooks, presentations, course descriptors, relevant information are easily available.

**The programme includes practice** as an integral part of the programme. Organization of the practice period, evaluation of the practice and its role in the Programme are not clear from the SAR (page 14). The course descriptions contain training practice syllabi. They are assigned to the specializations, but the structure and the content of the descriptions are unified. The expert team asked for additional information during the visit. Every specialization has a responsible person to organize the placement, and company supervisors are also used. The **assessment of training practice** is based on a written and an oral report supplemented by the evaluation of the internal supervisor.

#### *2.5. Study process and students‘ performance assessment*

The admission requirements for students are clear and publicly available on the main webpage of the Faculty. The prerequisite for the applicants is either a Bachelor degree or a professional Bachelor degree. Applicants from the latter group have to pursue additional studies before admittance. Those who had undergraduate degree from technological sciences, physical sciences and humanities have to pass exams from complementary courses (methodology,

business administration and economics) in their previous studies. **The system of complementary subjects is correct**, however, a clear regulation would replace the decisions on individual basis.

At the start of the Programme 35 students were admitted. The number of students decreased in the next two years, the lowest point was in 2014 with 12 freshmen. The new specialization brought 14 extra students in 2015. **The students have to indicate their first priority of specialization at the time of their admission. The system is not flexible**, the students do not have the possibility to change their mind, because the specialization subjects start in the first semester. It means that the specializations have only 5-8 students (sometimes less). The organization of studies has of special character: the students take and pass the courses one by one. That consecutive structure of studies makes the organization of work very transparent.

The assessment criteria in the course descriptions look appropriate, however, the SAR described an option to assess the individual works of the students by themselves (self-assessment). **Although it has minor impact on the final grade**, together with the high percentage of individual work the expert team has concerns about the fair assessment, there is a need for stronger control of the individual work of the students.

Completion rate is high for the first two cohorts (91% and 96%), it is descending now (75% and 71% – the last figure is from 2016). According to the SAR the reasons are mainly personal ones. It is an important task for the Programme management to analyse the reasons and to prevent increase in drop-out and withdrawal from the Programme.

The students can participate in the research work of the Faculty and student scientific events have also been organized. There is a lack of factual information in the SAR about the number of students from this particular Programme. Students confirmed that they are familiar with some opportunities participating in research activities, but it was highlighted that as all of them are fully employed it is hard to be involved actively.

The Erasmus mobility is a real opportunity for the students of the Programme. During the visit the students said that it is not easy to travel abroad because of their job responsibilities, but one of them mentioned that she was planning to go abroad.

The university ensures an adequate level of academic and social support. Students have a possibility to contact teachers by e-mail, Moodle or during the consultation hours. All relevant information are provided and updated on the main Faculty website. On the first week of studies, students are introduced to university life: library rules, study plan, social activities etc. Financial support is also given in different forms: students loans, scholarships, dormitories.

The role of Career Office is described, but the SAR does not provide evidences about the professional activities of the students and their career paths. During the visit it became clear that the majority of students have job, therefore they do not need counselling.

## **2.6. Programme management**

The Programme belongs to the Faculty of Business Management. The programme development and design have been supervised by the departments of the Faculty, responsible person for the implementation is the Dean. The Aviation Management specialization started in 2015, and members from Antanas Gustaitis' Aviation Institute joined the Study Programme Committee. General rules and regulations of the University and the Faculty were listed in the SAR and all documents have been available for the expert team before and during the visit. The heads of the departments are in charge for implementing the procedures of the quality assurance system. The evaluation of Programme has to be carried out in accordance with the latest regulation on the "internal evaluation of study programmes" (page 29).

At least once a year the Programme committee has to report to the Dean about the implementation of the Programme. The reports have to contain information about the organization issues, competence of the staff, relevance of teaching materials, survey results among students, staff and social partners. The Programme Committee periodically discusses the developments and decides on the necessary measures. In theory the system is logical and well-designed, but the SAR and its annexes do not include sample reports, therefore the expert team asked for quality assurance reports and other documents to check the implementation. The reports provided by the Faculty demonstrated the permanent work of the committees.

Student evaluations are made at the end of each term. The expert team asked the students and staff about the feedback of the student evaluations and we heard some examples of revisions after discussing minor complaints.

A special survey was made in early 2016 in order to summarize the opinion of students, teachers and employers about the Programme. Most of the opinions were favourable, at least 80% of the students confirmed that the quality of teaching materials was good, the teaching and assessment methods were appropriate, the facilities were excellent. The teachers' overall evaluation of the Programme was very good, too. Social partners found the level and outcomes of the Programme in compliance with Master studies.

### III. RECOMMENDATIONS

1. It is recommended that additional emphasis be given to further comparative analysis and differentiation of the defined aims, objectives and learning outcomes from other programmes, taking into account the strengths of the Faculty, strategic goals of the university, and the needs of Lithuanian society.

2. The Programme is too fragmented with offering six specializations. The freedom of students is high to apply according to their interests, but there are academic, organizational and capacity arguments to rethink the curriculum and the recent offer of specializations. A clear strategy towards offering a few professional Master's programmes, or a shift to the direction of a strong MBA programme could be a solution.

3. The list of readings is text-book centred and only a few scientific articles are offered either in compulsory or recommended sections. The expert team advises original research articles to be included in the reading lists.

4. The assessment criteria in the course descriptions look appropriate, however, the SAR described an option to assess the individual works of the students by themselves (self-assessment). Together with the high percentage of individual work the expert team has concerns for the fair assessment, there is a need for stronger control of the individual work of students.

5. It is recommended to rethink the role and place of the training practice in the curriculum.

6. The programme would greatly benefit from **more** foreign experts and active business leaders sharing their experience in the classroom.

7. Contributions to high-quality academic journals and participation in main events of the most respected international professional associations have room to be improved and to be **further** encouraged by the management of the Faculty.

#### IV. SUMMARY

The aims of the programme are comprehensively formulated and make it clear that the target group is rather wide. The name of the Programme suggests that the curriculum integrates two areas: application of economic principles, and organizational, administrative, problem-solving tools for management. Most of the international examples distinguish general management programmes and specialized management programmes. Programmes like Strategic Management, Marketing Management, Financing Management focus on management functions; programmes like Health Care Management, Sport Management, Bank Management focus on sectors of the economy; other programmes like Environmental Management, Innovation Management, e-Business Management focus on special characteristics of production and service provision; and finally, we can find examples for managing different types of companies, too: Entrepreneurship, Small Business Management, Management of Multinational Companies.

Looking at the curriculum and the description of the study objectives the “Engineering Economics and Management” programme has an “umbrella” character: six specializations form one study programme. The specializations create a mixture of the above-mentioned categories of management programmes. **The institution has expressed the view that “the structure of specializations and specialization profiles are chosen according to the situation of the labour market. They constantly analyze the needs of specialists of different areas and situation in the labour market –analyze statistical and other information about specialists demand, keep in touch with our social partners, analyze the material of different analytical reviews about the Lithuanian and other countries labour markets, use advises of the experts and information they provide.”**

The expert team can accept that (legally eligible) approach of the Faculty, however, the accreditation practice needs a stronger focus to determine the major target groups, to prescribe the prerequisites (entrance criteria), and to decide about the length and the content of the programme properly.

As the Programme is a group of six specialized programmes with a common core, the description of the Programme includes separate study aims, learning outcomes and Thesis requirements for the specializations. The aims and the learning outcomes have to reflect to all specializations simultaneously, and the mix of compulsory and specialization courses have to form a unity in each of the six cases. This is an ambitious and challenging task to be completed in a 90-credit programme.

The Programme is the integration of 4 core courses, 4 specialized courses and a practical training. The students have to apply to one of the six specializations and their decision is binding. Not all specializations start in a particular academic year, but only those, which have



enough applicants: two or three of the specializations every year. It is recommended to summarize the experiences of the first 5 years, and to revise the number and content of the specializations with a major attention to the public acceptance (both applicants and employers). There are organizational and capacity arguments to rethink the recent offer of specializations.

Regarding the learning outcomes of the course units the expert team found that the teaching staff is familiar with the general and specific concept of the learning outcomes and they have been able to form proper learning outcomes. The connection between the programme outcomes and course outcomes have been described in each course unit, and the descriptions cover the content of the subject, which are consistent with the Master's level. The course descriptions contain appropriate learning and assessment methods. The list of compulsory and recommended readings is quite extensive. The list of readings is text-book centred and only a few scientific articles are offered either in compulsory or recommended subjects. The expert team advises original research articles to be included in the reading list.

The core and specialization courses provide the students with advanced knowledge in certain management areas. However, the final result is an "a' la carte programme" having several good courses which are not really built on each other, and with specializations which vary every year because only a few specializations have been running at a time.

An integral part of the Programme is the practical training period in each specialization. Due to the compact nature of the programme the practice could be substituted by a project work using the Thesis work credits in the second term and a new specialization course could be introduced.

Thesis work must comply with the study programme and specialization. The expert team checked the list of defended Thesis works and confirmed the compatibility by titles.

The programme meets the requirement that not less than 80% of all the academic staff has a PhD – 80-100% of the staff of the Programme hold a doctoral degree, it was 100% in 2015. Two of the 8 subjects (25%) are taught by a professor, meeting the requirement that 20% of the major study field subjects have to be taught by professors. The distribution of qualified teaching staff and the age distribution of the teaching staff is good. The turnover is low, the Programme has stable teaching staff. More than 40% of teaching staff is female, showing good gender balance. The staff travelled abroad mainly under the framework of the Erasmus exchange programme and most of them have teaching experience abroad.

The student/staff ratio is very low: 2,9 in 2013, 1,3 in 2015. Those figures demonstrate that the capacity of the Faculty has much more potential. The workload of teachers is relatively low in the Programme: 7% of their total workload.

Participation and presentations of the staff in international conferences, positions in the editorial boards of national and international scientific journals, publication of articles and books

in Lithuanian and in foreign languages, participation in domestic and international research projects is good and acceptable, in general. A minor remark of the expert team is that the participation and effectiveness in research activities are unevenly distributed and contributions to high-quality academic journals and participation in main events of the most respected international professional associations have room to be improved.

The organization of studies has of special character: the students take and pass the courses one by one. That consecutive structure of studies makes the life of the students easier and the organization of work is very transparent. The expert team found that 80% of the total workload of the students is individual work. It is much more than the minimum requirement (which is 30%), and exceptional for full-time studies.

Completion rate is high for the first two cohorts (91% and 96%), it is descending now (75% and 71% – the last figure is from 2016). It is an important task for the Programme management to analyse the reasons and to prevent increase in drop-out and withdrawal from the Programme.

The facilities and equipment have been updated and the necessary hardware and software for computerized classes are available in the labs of the Faculty or in VGTU Library. Faculty Library provides students with all teaching materials they need. The library offers useful databases, various programmes, work rooms, books etc.

The Programme Committee periodically discusses the developments of the Programme implementation and decide on the necessary measures. The expert team asked for quality assurance reports and other documents to check the process. The reports provided by the Faculty demonstrated the permanent work of the committees.

Student evaluations are made at the end of each term. A special survey was made in early 2016 in order to summarize the opinion of students, teachers and employers about the Programme.

## V. GENERAL ASSESSMENT

The study programme Engineering Economics and Management (state code – 621N20024) at Vilnius Gediminas Technical University is given **positive** evaluation.

*Study programme assessment in points by evaluation areas.*

No.	Evaluation Area	Evaluation of an area in points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	2
3.	Teaching staff	3
4.	Facilities and learning resources	4
5.	Study process and students' performance assessment	3
6.	Programme management	3
	<b>Total:</b>	<b>18</b>

\*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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