



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Vilniaus Gedimino technikos universiteto  
**STUDIJŲ PROGRAMOS *PRAMONĖS INŽINERIJA IR  
INOVACIJŲ VADYBA* (valstybinis kodas - 621H77002)  
VERTINIMO IŠVADOS**

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**EVALUATION REPORT  
OF INDUSTRIAL ENGINEERING AND INNOVATION  
MANAGEMENT (state code - 621H77002)  
STUDY PROGRAMME  
at Vilnius Gediminas Technical University**

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Išvados parengtos anglų kalba  
Report language – English

Vilnius  
2016

## DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i><b>Pramonės inžinerija ir inovacijų vadyba</b></i>
Valstybinis kodas	621H77002
Studijų sritis	Technologijos mokslai
Studijų kryptis	Gamybos inžinerija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Antroji
Studijų forma (trukmė metais)	Nuolatinė (2)
Studijų programos apimtis kreditais	120
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Gamybos inžinerijos magistras
Studijų programos įregistravimo data	2001

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## INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<i><b>Industrial Engineering and Innovation Management</b></i>
State code	621H77002
Study area	Technological Sciences
Study field	Production and Manufacturing Engineering
Type of the study programme	University studies
Study cycle	Second
Study mode (length in years)	Full-time (2)
Volume of the study programme in credits	120
Degree and (or) professional qualifications awarded	Master of Manufacturing Engineering
Date of registration of the study programme	2001

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The Centre for Quality Assessment in Higher Education

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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.	Results of the students surveys of the study programme

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

Vilnius Gediminas Technical University (hereafter – VGTU) is a state higher education institution. It is formed of 10 faculties that offers different studies (Bachelors, Masters and Doctoral) on the technical area.

Master program Industrial Engineering and Innovation Management is managed by the Faculty of Mechanics. The Faculty organises 5 more Masters and 3 Bachelors in the same study field: “Production and manufacturing engineering”. The purpose of the study programme is to prepare enterprising and creative masters of production engineering who have additional innovation management knowledge and skills, are highly culturally conscious, have life-long learning, team work, innovation development and implementation skills, are able to apply scientific research methods in the fields of engineering and management, use modern software,

hardware, and information technologies, are able to disseminate research results and adapt them for the industrial enterprises activities.

Previous external assessment of study programme took place on December 20, 2012. The assessment was carried out by the expert group formed by Centre for Quality Assessment in Higher Education (SKVC). The assessed programme was accredited. 4 recommendations were provided:

- Revise the objective and learning outcomes in order to improve their coherence.
- Develop further the concept of Innovation Management and Entrepreneurship and reinforce the number of study subjects mainly devoted to these issues.
- Further increase the practical side and the recourse to not traditional teaching approaches.
- Reinforce the focus on modern software belonging to industrial engineering IT (ERP system, PLM, PDM, etc.), both at the theoretical and practical level.

#### **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 6<sup>th</sup> December, 2016.

- 1. Prof. Martí Casadesus (team leader)**, *Full Professor, Department of Management, University of Girona, PhD in Industrial Engineering, Spain;*
- 2. Prof. Johan L. Malmqvist**, *Chair Professor, Department of Product & Production Development, Dean of Education at Chalmers University of Technology, Göteborg, Sweden;*
- 3. Dr. Oluremi Olatunbosun** *Head of Vehicle Dynamics Laboratory, School of Mechanical Engineering, University of Birmingham, United Kingdom;*
- 4. Dr. Vincas Benevičius**, *director of the private limited liability company „Žali žali“, Lithuania;*
- 5. Ms. Žiedūnė Sabaitytė**, *student of Aleksandras Stulginskis University study programme Hydraulic Engineering, Lithuania;*

**Evaluation coordinator – Ms. Ina Šeščilienė.**

## **II. PROGRAMME ANALYSIS**

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

The program was developed according to VGTU and legal requirements. The expected outcomes of the study programme were reviewed 5 times in the years 2003, 2007, 2011, 2015, and 2016. Representatives of the stakeholders are the members of Study Programme Committee who is in charge of the reviews.

Four key aims as well as expected learning outcomes are well defined, their definition is clear and is publicly available through VGTU's information system "Alma Informatica" both in Lithuanian and English languages. Study programme's short description and objectives are not

given although it would be helpful (this was also a remark in previous assessment report). Aims and learning outcomes that are provided on the website are not the same as given in SER. This discrepancy must be removed. The accessibility of the study programme which focuses on innovation and its management is inadequate and uses only common ways of linking – references in other websites. The programme is accessible through the Open Information, Advice and Guidance System (AIKOS) only when using exact programme title through the search. Given the focus of the programme and taking into consideration ways of accessing and sharing information of the modern generation, tools as social media, blogs, extracurricular activities' forums, etc. should be employed as well. Given the fact that the number of students constantly decreases since 2011/2012 the emphasis on study programme's dissemination, accessibility tools selection and diversity increases even further.

The study programme is aligned with the needs of the industrial sector as witnessed during social partners' interview. In fact, close cooperation between the programme and the companies was visible. However participation in the programme design by the stakeholders was not evident. Programme aims and learning outcomes are relevant to the graduates as they have high employability and are needed in labour market (all students as well as graduates are employed). Still, students lack broader understanding about real world business and industry, better IT understanding and stronger link between received knowledge and its real world applications as it was expressed by companies and students themselves.

Study programme aims and learning outcomes are designed having Lithuanian Quality Framework (level VII) and EUR-ACE standards for second degree studies in mind. Learning outcomes are structured in 5 groups with total of 19 learning outcomes. During the interviews insufficient cooperation between different parties who participate in designing learning outcomes and linked curriculum was discovered. It is important to ensure that both the staff and students know clearly what learning outcomes are assigned to what subject and how the subject's content delivers it's linked learning outcomes. It's not clear that all the staff exactly know the expected learning outcomes assigned to their subjects, also there is no coordination between the teachers who deliver same learning outcome through their subjects. However, in general programme aims and learning outcomes are consistent with the type and level of studies and the level of qualifications offered.

Study programme title "Industrial Engineering and Innovation Management" implies equal focus both on industrial engineering as well as on innovation management. However, starting with programme's description it is visible that the focus is on industrial engineering alone. Study programme aims T1, T2 and T3 only very lightly touches innovation as such (aim T4 is completely industrial engineering related), and even there the focus is on innovation development and application but not on innovation management. Programme learning outcomes are also not aligned with innovation management part of the programme. Knowledge outcome Z1 states that the graduates will have the knowledge of innovations, however only one module of 3 ECTS (MEMIM16101, with roughly half of its content dedicated to innovations) contribute. All other contributions comes from preparing Master's Thesis, however Master's Thesis provided at premises includes only a very few that can be related to innovation and its management so the overall contribution to innovation management from preparing Master's Thesis is highly questionable. Knowledge outcome Z3 states that graduates have the knowledge on innovative product design and innovation of manufacturing process. The course have

dedicated module MEMIM16011 “Innovative Product Design” (9 ECTS, half of it can be considered to be related to innovation management), but the module MEMIM16002 “Improvement and Innovation of Manufacturing Process” only very slightly touches innovation. Other programme outcomes are research skills, engineering analysis, engineering design and engineering practice ability are all highly related to industrial engineering but not to innovation management. Skills as “propose innovative way for problem solution” (GT3), “apply theoretical knowledge in development of product or process innovation” (IP1), “generate innovative problem solutions” (IVG1) cannot be considered as adequate contribution to innovation management. Overall overview of the study programme’s content shows that roughly only 10-20% of the course content can be related to innovation management while other 80-90% to an industrial engineering. The inadequacies in innovation management was also expressed by companies during interview by remarks of the students and graduates needing broader view about business and industry. There is also a misalignment between study programme name and questionnaires that were used to gather stakeholder feedback as they do not have any explicit questions related to innovation management. This means self-evaluation report did not evaluated innovation management as it should. Interview with graduates also revealed that innovation management content was more of ordinary management and had little relevance to their day to day activities. The name of the programme, its learning outcomes, content and qualifications offered are not compatible with each other and requires decisions from stakeholders on adjustments to be made to reach the compatibility.

## ***2.2. Curriculum design***

The curriculum design is compliant with national and VGTU regulations, the major and the minor subjects are clearly identified, the duration (2 years and 3200 hours) for 120 ECTS are also aligned with EU policies. 39 ECTS are for Master Thesis, 3 ECTS are elective and 78 ECTS are for mandatory courses. The programme is offered both in Lithuanian and in English. The curriculum design meets legal requirements.

The study programme is 3200 hours. There are 630 contact hours (lectures, practical works, and laboratory work, 19.7 % of programme time). 390 hours (12.2 % of the programme) is designed for lectures and 240 hours (7.5 % of the programme) – for practical works. Consultancy takes 192 hours (6 % of the programme), individual studies – 2378 hours (74.3 % of the programme). The information on the web regarding the curriculum is not the same as provided for evaluation and must be updated. More information on the web is also needed about the syllabus of the course, the methodologies, evaluation, and a brief CVs of the staff involved. The offer of free choice subjects is still (as stated in previous evaluation report) limited: 3 ECTS. The list of freely selectable modules is publicly. The time for the practical works was increased by 45 hours in 2016 to strengthen practical part of the studies. As contact hours did not change, meaning they were taken from lectures or lab work rather than individual studies, the positive effect of this change is questionable. It is further reinforced by the results of employers’ survey as well as the interviews of students, graduates and social partners – the request for graduates with practical skills and knowledge is still highly expressed. As it was stated before 2.1 only 10-20% of the curriculum can be linked to innovation management meaning the distribution

between industrial engineering and innovation management is uneven. However, subjects / modules themes are not repetitive.

Studies last for 4 semesters. The volume of all semester studies – 30 credits each. Studies are finished by preparation of the final work and its defence. Final work preparation is ensured by devoted 3 ECTS every semester. The 4th semester is designed for the completion and defence of the final work (30 ECTS). During the evaluation some of the theses that were revised on premises showed good content and quality. Analysis of content of the subjects showed that the content is consistent with the type and level of the studies.

The content and used methods are sufficient for the achievement of learning outcomes in general. However, interviews showed the request for more practice content and better linkage between theoretical knowledge delivered and practical works experienced. There is also a lack of teaching methods applied, so further digitalisation (it is evident that Moodle, the framework that VGTU uses to do digital teaching, mainly serves as a course material storage) of teaching and extending the variety of teaching methods is highly encouraged.

The scope of the programme is marginally sufficient to ensure all learning outcomes. The cause of this insufficiencies lies in the lack of the curriculum content related to innovation management. For example, learning outcome “IVG3. Skills to organize the collective and to manage diversified teams for the development and implementation of a product and innovations” is linked to only one course module “Human Resource Management at Industrial Enterprises” which, based by its course card, is related to ordinary HR management but not to “manage diversified teams for the development of an innovation”. Learning outcome “Z1. Knowledge of the scientific research and innovation, concepts, laws, object characteristics, computer aided research methods.” is also linked to only one module (besides Master Thesis) “Fundamentals of Research and Innovation” (only 3 ECTS with only half of its content related to innovation as seen in the course card) thus provide only the very basics about the innovation. 39 ECTS that are linked to Master Thesis does not contribute much as most of on the premises revised theses were industrial engineering related with low or none innovation / innovation management content.

Content of the programme reflects some of the latest achievements in industrial engineering. According to the social partners, some improvements could be made in order to improve the programme to introduce courses to broaden the knowledge to include economical and real world business processes related knowledge. Alumni also suggests to include more visiting teachers from the industry and other universities as well as excursions to industries to see new trends in the field and feel industry pulse.

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

Almost all 9 teachers (except one) are Doctors. 2 of them are professors, 4 associate professors and 3 lecturers. Teachers are appointed to the position through public competition under the Statute of the University for a usual 5 years term. All teachers meet legal requirements as over the past five academic years, all teachers were certified. During the attestation the scientific and educational activities are evaluated.

Educational experience is far in excess of 10 years for the majority of teachers. Teachers also participate in various research projects, however all cited projects were finished until 2013



and are national. Participation in only national projects might interfere with the acquisition of state-of-art from other countries. Provided teachers' CVs show that teachers have strong industrial engineering background while only one teacher (Rolandas Strazdas) can be considered to have strong innovation management background. Also the list of publications presented in mentioned CVs shows that most of the publications are prepared at national level and only a few at international. Inadequate participation at international level or inability to provide high level knowledge and research might indicate teacher's stagnation and cripple the ability to ensure learning outcomes especially if they are innovation management related. Most of teachers have their PhD from a Lithuanian institution, and the majority of them from VGTU. Although this is not obviously a negative point, it is necessary to increase the internationalization of the staff and continuously support and maintain it. Support for participating in Erasmus teaching interchanges for staff is relevant. It is crucial to reinforce the contacts with other European Universities. According to the interviewed students, the teachers are well qualified at their topics. Students have an excellent access to them (teachers). The qualifications of the teaching staff are adequate to ensure learning outcomes related to industrial engineering and are inadequate to deliver broad quality innovation management related content.

General ratio of teachers to students is 1 to 1.37. Such high ratio ensures quality time between students and teachers are possible because teachers can provide a lot of attention per student. This is adequate to guarantee successful teaching.

Teaching staff turnover is adequate. In 2014/2015 years, new teachers were admitted and the elder one were retired. Teachers' average age in 2015/2016 was 49.2. Previous evaluation report remarks regarding staff age and possible long term problems were addressed. Total number of teachers has been reduced, however, with decreasing of the students' number, teaching load after year 2013 decreased by 1.7 times. Most of previously recruited teaches come from the same Department. Thus, next time a new teacher is to be hired, academic from abroad should be considered. If it's not viable because of different circumstances, all new staff should not have PhD from the same Department (at least). It is necessary to motivate the staff to participate in teaching and training exchanges or to work on probation outside Lithuania.

VGTU creates some conditions for the professional development of the teaching staff. Some academic staff has been participating in different courses organised by the University or work on probation. However, systematic approach to staff teaching is missing in the Department. There is also the need for staff internationalization via teacher exchange, internships in foreign businesses or research in foreign research institutions.

The professional development is promoted through the obligatory element of university teacher's work – scientific work – which must amount in 30% of total working time. Teachers must also do methodological work. Teachers participate in research projects, but as stated before, all cited projects are national and ended before or in 2013. Staff is involved in research directly related to the study programmes topics as can be seen from CVs and was evident during the interviews. However, it's again worth stressing some lack of internationalization as most publications are in national journals.

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

The premises of the studies are managed by Faculty of Mechanics. Faculty of Mechanical contains twenty-six facilities with 869 work places taking a total area of 2532 m<sup>2</sup>. Technical and hygienic conditions were good during the visit. The total capacity of the classrooms is 594 places for students. During the site visit it is observed that premises are adequate in size and quality.

Teaching and learning equipment is adequate both in size and quantity. There are classrooms with all required software installed (CADs, Matlab, etc.), wide variety of processing equipment (milling, turning, welding, etc.), spaces to do project works. During the interviews students expressed no problems related to teaching and learning equipment. Although teachers use Moodle, but according to interviews, it's mainly used as a course material storage rather than a fully functional teaching and assessment tool. Continuous improvements on utilising Moodle is required in order to enrich teaching process and provide maximum support for students who can't participate in all activities.

There is no formal way of arrangements for students' practice. All of the students are working so exchange programs, for example, are not used. HEI should approach social partners and try to find ways to promote and helps students to participate in exchange programs without fears of student losing a workplace (interviews showed this is the main reason why students don't consider exchange programs) or company losing promising employee.

Students have good access to teaching material. Library working hours are sufficient. Provided premises are adequate. Staff is always on duty to advise and help students find and book the methodological tools. The faculty has free wireless Internet access. All online resources can be accessed remotely via VPN. It is confirmed that teaching material are adequate and accessible.

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

Admission requirements do no differ from the others in the university and are based on the general principles to the entire university. Criteria for enrolment to the Master's study – weighted average of first cycle studies grades.

In general, the organisation of the study process ensures and adequate provision of the programme. There are theoretical lectures, practical works, project works, etc. which helps achieving the learning outcomes. Theory and practice is balanced as it is seen by the students. However, students also expressed the need for more visits to industrial companies and / or exhibitions / fairs to see real world applications and trends, and better linking theory with practice. Moodle is also underused yet and could be exploited more and expanded to all study modules.

The students' participation in the scientific and applied science activities is voluntary. There are invitations from teachers to participate but according to students they are rare. However, if student's initiates projects themselves, they get full support on these activities.

VGTU has different ERASMUS+ agreements with HEI in Europe, allowing students to participate in student mobility programmes. As the programme is offered in English and the topic is good, there are good number of incoming exchange students (24 students in 2015/2016).

However, outgoing number of students is low (3 in 2015, 4 in 2016), mainly because all students already work during the studies and fears losing their position in the company. HEI should be proactive in helping students participate in these exchange programs and be in constant dialog with employers to help overcome student's fear of losing the position.

VGTU provides adequate level of academic and social support. Students have access to participate in sports, health care and culture activities. There is support for the students from abroad (dormitories), and for the students with financial problems. During the student interview students stated that the academic and social support is good.

The assessment system of students' performance is clear and adequate. Every course has its assessment described in module card that is available for students (although not publicly available). The assessment is also presented in first lectures during the course. Students consider their performance assessment fair. Appellation procedure is also defined in case the student disagrees with evaluation. There were remarks from students that teachers not always follows the timing rule of providing assessment scores as defined by rules (sometimes scores arrive later than expected). The Master's Thesis evaluation procedure is clearly defined, legally approved and is adequate.

Employment is not a problem both for students and graduates. Most of them work in the field they study / graduated. Social partners indicate they need such kind of employees in their companies so there is evident demand. Employers are also generally satisfied with the level of qualification students have, although time is still required to fully integrate into the companies' specialties and workflow. Employers also expressed that students could have broader view towards the business. Better economical and IT knowledge would be beneficial. Overall, professional activities of the majority of graduates meets the programme providers' expectations.

## ***2.6. Programme management***

Responsibilities for decisions and monitoring of the implementation of the programme are clearly allocated. It's Council of the Faculty and the Dean's office at the faculty level, and Study Committee at the programme level who annually reviews the program. Study Committee members consists of faculty representatives, student representative and a social partner representative. However, the cooperation between teaching staff and Study Committee is poor on the designing the curriculum to achieve expected learning outcomes. Interviews showed that sometimes learning outcomes are derived from the content of the course rather than the content is designed to guarantee specific learning outcomes. Also it is not evident that teaching staff clearly knows what learning outcomes are linked to specific subjects, and in some cases they are only informed about this link by the Study Committee and do not actively participate in the process. Further revision on the program review / change process is needed.

Although VGTU accomplished implementation of Quality Management System (ISO 9001:2008), it is evident that formal processes of capturing the feedback and reacting to it is not present. Student feedback is collected every semester using questionnaire that is presented to the students through the students' intranet area. It is declared, that these questionnaires are voluntary, however participation rate 100 % (as seen by provided papers), and the student interview revealed that the participating in survey is very persuasive (constant popups until the

student fills it). Given approach compromises natural feedback value and should be revised. Also, it seems that the students are not informed on the results of these questionnaires so the capture-inform cycle is open. Close informal cooperation between the Faculty and the industry is present, however, there is no formal way (confirmed during interviews) of capturing the feedback of social partners and using it to design study programme content. Procedures to periodically capture social partners' feedback, utilize it to adjust study programme and inform them on their feedback impact is needed. The same holds true for the graduates. The information and data on implementation of the programme is collected and analysed, but not regularly (except for students) and not formally.

Outcomes of previous external evaluation results were taken into consideration and changes were made. However, innovation management content is still inadequate, even though this was stated in previous evaluation and issues were addressed by the programme management. Also, low participation of Lithuanian students in exchange programs was addressed insufficiently.

Stakeholders are involved into evaluation and improvement processes. Both student representative and one social partner is a part of Study Committee. Part of the employer's contributed to the study base material provision for the improvement. Employers are involved in the programme evaluation process as the qualifying degree award chairmen of the commission. Interview with employers showed the social partners would like to more actively participate in the improving process of the programme on the definition of the curriculum of the programme, suggesting some of the content of the courses, etc. As stated before, a formal way of utilizing this willingness is required. However, the opinion about the programme of different stakeholders is good.

Although the quality standard ISO 9001:2008 is present and is effective in some processes with Faculty involved, the processes of capturing, measuring and utilising stakeholders' feedback results as well as managing public study programme related information are lacking. The process of capturing stakeholders' feedback, measuring it and using the results should be defined and implemented to guarantee successful improvement of the programme. The same is valid for managing public information about the study programme and relevant changes.

### III. RECOMMENDATIONS

- Erect a plan, appoint responsibilities, set the schedule and implement the defined action to achieve full match between programme title, its learning outcomes, content and qualifications offered. The process should involve all the stakeholders using formal ways of capturing their feedback and opinions, measuring that feedback and utilising its results for a decision making process. The full process should be documented and presented during the next external evaluation.
- Update publicly available information about the study programme on VGTU website, especially on related to course content and teacher's CVs. Make the list of freely selectable modules easily accessible to everyone.
- Increase internationalization of the staff both in teaching and research. Increase teacher interchanges with other European Universities. Look for opportunities for international cooperation regarding projects, target publications to international journals, conferences, etc. to show ability to generate high value content and to increase research internationalization.
- Develop a formal framework of capturing stakeholders' feedback, measuring it and utilising result to improve the programme periodically. Appoint responsible staff to constantly follow the developed framework. Ensure all the stakeholders are informed on the aggregated feedback and impact made to form a closed loop.
- Use modern ways to disseminate the study program. Employ social networks, blogs, and related forums to raise awareness about the program and attract students.
- Further increase time spent for practical works, visits to SMEs and related fairs / exhibitions, as the need is stated by all stakeholders (students, graduates and employers).
- Expand the use of digital learning platforms to all subjects and utilize it more in teaching process.
- Increase the number of ECTS available for elective courses.
- Include new subjects on the curriculum that addresses the need of having a broader understanding of real world business.

#### **IV. SUMMARY**

The main strengths and weakness of the master programme in *Industrial Engineering and Innovation Management* at Vilnius Gediminas Technical University, according to each one of the analysed standards, are presented in the Summary.

##### ***Evaluation area “Programme aims and learning outcomes”.***

The strength of programme is that it addresses the needs of industry so graduates are very likely to find employment. Learning outcomes are, in general, derived from EUR-ACE specifications and follows international standards.

The weakness of the programme is that the name of the programme, its learning outcomes, content and qualification offered are not compatible with each other. No public information on how learning outcomes are linked to specific modules.

##### ***Evaluation area “Curriculum design”.***

The strength of programme is its strong industrial engineering related content and the fact that the programme is offered in Lithuanian and English.

The weaknesses of the programme is its insufficient innovation management content and insufficient information about each module on the website. Only 3 ECTS are available for elective courses, the list of options is not publicly available.

##### ***Evaluation area “Teaching staff ”.***

The strength of programme is that all teachers are certified, meet legal requirements and are qualified at their topics. Relations between teaching staff and students, graduates and social partners are excellent.

The weaknesses of the programme is low staff's internationalization: low participation in teacher interchanges, low research impact internationally. There is no systematic approach to staff teaching.

##### ***Evaluation area “Facilities and learning resources”.***

The strength of programme is that material base is adequate for successful programme development – there is good library and online content access, wide range of equipment.

The weaknesses of the programme is that digital teaching / learning platforms (Moodle) is underused.

***Evaluation area “Study process and students’ performance assessment”.***

The strength of programme is high employment rate of the graduates. Social partners are involved in Master Thesis’s evaluation process. The assessment of students’ performance is clear and adequate. There is detected a good number of incoming foreign students.

The weaknesses of the programme is that there is a participation of local students in student exchange. Digital teaching / learning platforms (Moodle) is underused. There is detected a need to increase number of visits to industrial companies and / or exhibitions / fairs to see real world applications and trends.

***Evaluation area “Programme management”.***

The strength of programme is clear definition of the responsibilities of the programme management and the role of the Study Programme Committee. There is a very good informal cooperation with social partners and periodical capture of students’ feedback.

The weaknesses of the programme is that there is no evident formal processes to capture stakeholders’ feedback, measure it, and utilize results into program development. Student questionnaires are not completely voluntary, feedback capture – inform loop is open. There are no clear procedures on periodical programme evaluation and development.

## V. GENERAL ASSESSMENT

The study programme *Industrial Engineering and Innovation Management* (state code – 621H77002) 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	2
2.	Curriculum design	3
3.	Teaching staff	3
4.	Facilities and learning resources	3
5.	Study process and students' performance assessment	3
6.	Programme management	3
	<b>Total:</b>	<b>17</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.

Grupės vadovas: Team leader:	Prof. Marti Casadesus
Grupės nariai: Team members:	Prof. Johan L. Malmqvist
	Dr. Oluremi Olatunbosun
	Dr. Vincas Benevičius
	Ms. Žiedūnė Sabaitytė