



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS  
CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

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## INFORMATION SYSTEMS FIELD OF STUDY

**Vilnius University**

### EXTERNAL EVALUATION REPORT

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2. Academic member: Prof. dr. Nik Bessis
3. Social partner representative: Tomas Kazragis
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# I. INTRODUCTION

## 1.1. OUTLINE OF THE EVALUATION PROCESS

The field of study evaluations in Lithuanian higher education institutions (HEIs) are based on the following:

- Procedure for the External Evaluation and Accreditation of Studies, Evaluation Areas and Indicators, approved by the Minister of Education, Science, and Sport;
- Methodology of External Evaluation of Study Fields approved by the Director of the Centre for Quality Assessment in Higher Education (SKVC);
- Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG).

The evaluation is intended to support HEIs in continuous enhancement of their study process and to inform the public about the quality of programmes within the field of study.

The object of the evaluation is all programmes within a specific field of study. A separate assessment is given for each study cycle.

The evaluation process consists of the following main steps: 1) Self-evaluation and production of a self-evaluation report (SER) prepared by an HEI; 2) A site visit by the review panel to the HEI; 3) The external evaluation report (EER) production by the review panel; 4) EER review by the HEI; 5) EER review by the Study Evaluation Committee; 6) Accreditation decision taken by SKVC; 7) Appeal procedure (if initiated by the HEI); 8) Follow-up activities, which include the production of a Progress Report on Recommendations Implementation by the HEI.

The main outcome of the evaluation process is the EER prepared by the review panel. The HEI is forwarded the draft EER for feedback on any factual mistakes. The draft report is then subject to approval by the external Study Evaluation Committee, operating under SKVC. Once approved, the EER serves as the basis for an accreditation decision. If an HEI disagrees with the outcome of the evaluation, it can file an appeal. On the basis of the approved EER, SKVC takes one of the following accreditation decisions:

- **Accreditation granted for 7 years** if all evaluation areas are evaluated as exceptional (5 points), very good (4 points), or good (3 points).
- **Accreditation granted for 3 years** if at least one evaluation area is evaluated as satisfactory (2 points).
- **Not accredited** if at least one evaluation area is evaluated as unsatisfactory (1 point).

If the field of study and cycle were **previously accredited for 3 years**, the re-evaluation of the field of study and cycle is initiated no earlier than after 2 years. After the re-evaluation of the field of study and cycle, SKVC takes one of the following decisions regarding the accreditation of the field of study and cycle:

- To be accredited for the remaining term until the next evaluation of the field of study and cycle, but no longer than 4 years, if all evaluation areas are evaluated as exceptional (5 points), very good (4 points) or good (3 points).
- To not be accredited, if at least one evaluation area is evaluated as satisfactory (2 points) or unsatisfactory (1 point).

## 1.2. REVIEW PANEL

The review panel (RP) was appointed in accordance with the Reviewer Selection Procedure as approved by the Director of SKVC.

The composition of the review panel was as follows:

1. Panel chair: Prof. dr. Barry Allan Brown
2. Academic member: Prof. dr. Nik Bessis
3. Social partner representative: Tomas Kazragis
4. Student representative: Nienke Wessel

## 1.3. SITE VISIT

The site visit was organised on 21 May 2024 onsite.

Meetings with the following members of the staff and stakeholders took place during the site visit:

- Senior management and administrative staff of the faculty(ies);
- Team responsible for preparation of the SER;
- Teaching staff;
- Students;
- Alumni and social stakeholders including employers.

There was no need for translation and the meetings were conducted in English.

## 1.4. BACKGROUND OF THE REVIEW

### Overview of the HEI

Founded in 1579, Vilnius University (hereinafter – the University, VU) is the oldest university in Lithuania with the status of a state public institution. The university's structure consists of 15 Core Academic Units (hereinafter referred to as "CAU") (11 faculties, 1 institute, 1 centre, 1 academy and 1 business school), 12 non-academic stem divisions (including library, botanical garden, publishing house, planetarium, information technology, service center, etc.). The departments cooperate with each other in implementing the University's strategic plan, conducting studies and implementing research.

### Overview of the study field

Information Systems (IS) study programmes are carried out at Kaunas Faculty of Vilnius University (hereinafter referred to as "KnF"). It is a first cycle (Bachelor) study programme (hereinafter referred to as "SP") "Marketing Technologies" (hereinafter referred to as "MarTech") and the second cycle (Master) SP "Finance Technologies" (hereinafter referred to as "FinTech"). KnF is one of VU's core academic units operating in accordance with the VU Statute and KnF Regulations. KnF is characterised by an interdisciplinary combination of fields of science and studies, they combine the research areas of computer science, finance, marketing, economics and humanities developed in the Faculty. The Faculty organises annual international conferences in the fields of economics and management, informatics and information systems. KnF researchers participate in all levels of studies (first, second cycle and doctoral studies)

The Doctoral Committee of Informatics Engineering is composed of KnF and MIF, while the Management and Economics Directions Committee is composed of KnF together with EVAF scientists. The study programmes described here are some of the newest at KnF: FinTech (second cycle) SP was launched in 2018 and MarTech (first cycle) SP was launched in 2020.

### Previous external evaluations

KnF has accumulated experience in implementing accredited SPs in the field of computer science engineering, finance and management for several decades. However, the IS fields of study MarTech SP and FinTech SP have not yet been evaluated.

### Documents and information used in the review

The following documents and/or information have been requested/provided by the HEI before or during the site visit:

- *Self-evaluation report and its annexes*
- *Annual Monitoring Report(s)*
- *Annual Performance Review*
- *Final theses*

### Additional sources of information used by the review panel:

*None*

## II. STUDY PROGRAMMES IN THE FIELD

### First cycle/LTQF 6

Title of the study programme	<b>Marketing technologies</b>
State code	6121BX034
Type of study (college/university)	University
Mode of study (full time/part time) and nominal duration (in years)	Full time (3.5 years)
Workload in ECTS	210
Award (degree and/or professional qualification)	Bachelor of Computing
Language of instruction	Lithuanian and English (confirmed as 2 language programme)
Admission requirements	Secondary education
First registration date	28/06/2020
Comments (including remarks on joint or interdisciplinary nature of the programme, mode of provision)	-

### Second cycle/LTQF 7

Title of the study programme	<b>Financial Technologies</b>
State code	6211BX022
Type of study (college/university)	University
Mode of study (full time/part time) and nominal duration (in years)	Full time (1.5 years)
Workload in ECTS	90
Award (degree and/or professional qualification)	Master of Computing
Language of instruction	Lithuanian and English (confirmed as 2 language programme)
Admission requirements	Bachelor's degree
First registration date	19/06/2018
Comments (including remarks on joint or interdisciplinary nature of the programme, mode of provision)	-

### III. ASSESSMENT IN POINTS BY CYCLE AND EVALUATION AREAS

The **first cycle** of the information systems field of study is given a **positive** evaluation.

No.	Evaluation Area	Evaluation points *
1.	Study aims, learning outcomes and curriculum	3
2.	Links between scientific (or artistic) research and higher education	3
3.	Student admission and support	4
4.	Teaching and learning, student assessment, and graduate employment	3
5.	Teaching staff	3
6.	Learning facilities and resources	3
7.	Quality assurance and public information	4
<b>Total:</b>		23

The **second cycle** of the information systems field of study is given a **positive** evaluation.

No.	Evaluation Area	Evaluation points *
1.	Study aims, learning outcomes and curriculum	4
2.	Links between scientific (or artistic) research and higher education	4
3.	Student admission and support	4
4.	Teaching and learning, student assessment, and graduate employment	3
5.	Teaching staff	3
6.	Learning facilities and resources	3
7.	Quality assurance and public information	4
<b>Total:</b>		25

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\*

**1 (unsatisfactory)** - the area does not meet the minimum requirements, there are substantial shortcomings that hinder the implementation of the programmes in the field.

**2 (satisfactory)** - the area meets the minimum requirements, but there are substantial shortcomings that need to be eliminated.

**3 (good)** - the area is being developed systematically, without any substantial shortcomings.

**4 (very good)** - the area is evaluated very well in the national context and internationally, without any shortcomings.

**5 (exceptional)** - the area is evaluated exceptionally well in the national context and internationally.

## IV. STUDY FIELD ANALYSIS

### AREA 1: STUDY AIMS, LEARNING OUTCOMES AND CURRICULUM

#### 1.1. Programmes are aligned with the country's economic and societal needs and the strategy of the HEI

##### FACTUAL SITUATION

##### 1.1.1. Programme aims and learning outcomes are aligned with the needs of the society and/or the labour market

"Marketing Technologies" integrates knowledge of marketing practices and information systems, to develop skills amongst students to digitise and transform marketing business models. While the first class are still to graduate (in 2025), there is a need within Lithuania and internationally for graduates who can bridge the 'skills gap' between IT and marketing professionals. The current limited number of such professionals continues to limit the ability to develop new product and service models. The SER outlines varying requirements for new recruits that have been identified, such as data analytics, marketing automation software, user experience, social media intelligence tools and the integration of AI solutions into business processes. These programme's aim is to train students to fit with these demands, demonstrated in the study programme learning outcomes, such as being able to use social media dissemination tools to implement integrated digital marketing solutions, or critical assessment of consumer needs to evaluate the feasibility of different marketing technologies. This can also be seen in courses on digital product monetization, or digital brand management.

"Financial Technology" combines the finance and technology subject areas, with courses designed to train professionals in developing and applying financial technology solutions and tools, such as blockchain, cryptocurrencies, smart contracts, and big data analytical models. In the field of financial technology in Lithuania and internationally, there has been a large expansion of FinTech companies alongside the introduction of innovative financial services. Numerous opportunities exist in terms of areas such as open banking, Instant payments, Digital currencies, Decentralised finance, Embedded finance, opportunities that require highly qualified specialists. This programme's aim is to train students to fit with these demands, demonstrated in the learning outcomes, such as applying knowledge of developing centralised and decentralised financial systems, understanding compliance and tax principles, or applying statistical models to large datasets. This can also be seen in the specific courses taught, such as courses in banking technology, big data analytics, and investment risk management.

##### 1.1.2. Programme aims and learning outcomes are aligned with the HEI's mission, goals, and strategy

The implementation of Martech and Fintech make use of the interdisciplinary structure of the Faculty. KnF has three fields – computer science, social sciences (economics, management, marketing and finance) and humanities (languages, culture). The Faculty has focused on developing and implement interdisciplinary and cross-disciplinary studies, combining several fields of study and using the Faculty's potential in the fields of technology, finance and marketing.

## ANALYSIS AND CONCLUSION (regarding 1.1.)

These programmes are well formulated to fit with clear employment needs in Lithuania and internationally, with financial technology in particular well fitted to recent development in terms of new finance technology. These programmes also fit with VU's strategic directions in terms of interdisciplinary research, research of an international direction, development of e-studies as well as demonstrating cases of active partnerships, such as between the SP and local marketing and finance social partners. While the programmes are well directed towards the needs of society and the employability of students, some more work could be done on articulating a future vision for the programme. This may be the outcome of a broader strategic process for the department.

1.2. Programmes comply with legal requirements, while curriculum design, curriculum, teaching/learning and assessment methods enable students to achieve study aims and learning outcomes

## FACTUAL SITUATION

### 1.2.1. Programmes comply with legal requirements

The programmes comply with the legal requirements for courses as set out in (1) the "Lithuanian Qualifications Framework", (2) the "General Requirements for the Conduct of Studies", (3) the "Description of Study Levels", (4) the "Description of the Group of Fields of Study of Informatics Sciences", and the "Regulations of Studies of Vilnius University". In particular, the legal requirements concerning the amount of study credits – for MarTech there are 210 ECTS points; for FinTech there are 90 ECTS points. These courses also meet the requirements in terms of final thesis credits, and the balance between credits for work proscribed and those chosen by students.

### 1.2.2. Programme aims, learning outcomes, teaching/learning and assessment methods are aligned

"Marketing Technologies" integrates knowledge of marketing practices and information systems, and develops skills to digitise and transform business models. "Financial Technology" is an IS study field programme combining finance and technology subject areas, designed to train professionals capable of developing and applying financial technology solutions and tools, such as blockchain, cryptocurrencies, smart contracts, and big data analytical models.

### 1.2.3. Curriculum ensures consistent development of student competences

For the Marketing Technologies: In the first semester, students study the basics of IS (15 ECTS), e-business and marketing course units (5 ECTS). The second semester further strengthens the knowledge of the fundamentals of the IS field (10 ECTS) and to deepen the knowledge of the principles of marketing in the fields of sales and communication (5 ECTS). In addition, foreign language for professional communication (5 ECTS) is studied. The third semester course units provide the opportunity to apply IS knowledge to marketing problems (Algorithm Theory and Data Structures, 5 ECTS), to explore marketing areas related to product monetisation and online consumer behaviour (10 ECTS) and to master processes based on digital market technologies (Electronic Distribution Solutions, 5 ECTS). In the fourth semester of studies, the students study Programming Languages and Environments (5 ECTS), Statistics (5 ECTS), and IS disciplines related to the application of modelling, forecasting, and artificial intelligence methods for the processing of information about markets and companies (10 ECTS), as well as the mastery of analytical methods and tools for presenting and evaluating online content and its effectiveness (5 ECTS). This semester aims to encourage students to

position their core competencies and their interest in different research and career fields and their related competences by offering the possibility to choose a course unit (5 ECTS) from 4 options (Advertising Technology, Internet of Things, Strategic Management of e-Marketing, Management of Technological Innovation). The fifth semester highlights the variety of technological solutions used in marketing, the use of internet, mobile, audiovisual opportunities (15 ECTS) and the specificities of audiovisual digital technologies and project management (10 ECTS). Digital Brand Management (5 ECTS), which focuses on the acquisition, development and application of marketing-specific knowledge in the development of e-marketing solutions. The sixth semester covers areas of relevance to digital marketing solutions identified by experts, e.g., Cybersecurity and Personal Data Management, Market Modelling and Forecasting (10 ECTS), as well as specific knowledge of marketing technologies in the relevant area of information retrieval and analysis (Social Network Information Analysis; Marketing Research (10 ECTS)). In this semester, students have the opportunity to use the knowledge acquired during their studies in the fields of IT and marketing in the preparation of a course paper aimed at the development and implementation of an e-marketing technology solution project using the acquired programming and analytical tools (5 ECTS). In the seventh semester, students are introduced to the practical specifics of marketing technology activities through a 3-month internship in organisations (15 ECTS). These internships are arranged by the MarTech SP according to the available proposals of the social partners. In this semester, a Final Thesis (15 ECTS) shall be prepared.

For the Fintech SP five course units are studied in each of the first and second semesters. In the third semester, there is one 5-credit course unit and 25 credits for the Master's thesis. After completing the IS-related compulsory courses in the first and second semesters (Big Data Analytics and Technology (5 ECTS), Intelligent Systems in Financial Markets (10 ECTS), Python Programming for Financial Technology (5 ECTS), "High Performance Computing and Parallel Computing" (5 ECTS), "Blockchain Currencies and Applications" (5 ECTS), "Modern Banking Technologies" (5 cr.), "FinTech Application Solutions" (10 ECTS), "Legal Framework for Financial Technology and Cyber Security" (5 ECTS), students have the opportunity to deepen their knowledge in the field of informatics by choosing additional IT-related course units. In the second semester, students study the discipline "Research paper (Master's thesis project)" (5 ECTS), which is part of the preparation of the final thesis. The fully implemented Master's thesis project (25 ECTS) is presented to the board in the third semester and evaluated during the public defence.

#### 1.2.4. Opportunities for students to personalise curriculum according to their personal learning goals and intended learning outcomes are ensured

Individualised competence building can be carried out through thematic sequencing of the courses chosen by the student during the semesters: In the MarTech SP, through electives (within 10 credits), students can shift their studies to the basic field of Information Systems or Digital Marketing; the customised development of FinTech competences is carried out within 5 credits per semester. There is an option to choose between studies tilted towards information systems or between FinTech. For the MarTech SP for students enrolled from 2023 onwards a new study plan will be implemented which extends the possibilities of individualisation, allowing students to select their own disciplines for areas of study.

#### 1.2.5. Final theses (applied projects) comply with the requirements for the field and cycle

The final theses as prepared for the FinTech SP meet with the formal requirements, as well as the requirements of scientific research. This seems well founded in the research thesis preparation course. Recent theses have covered topics such as assessing risk in cryptocurrency, studying the lending processes in crowdfunding practices, and financial modelling in electricity provider choice. The final theses for MarTech

will be prepared in 2025, but seem well based on the existing expertise of teachers in supervising these broadly in the Computer Science, Information Science and Cybersecurity fields.

### **ANALYSIS AND CONCLUSION (regarding 1.2.)**

Both courses offer a clear set of programme aims, and learning outcomes that match well with the course offered. One feature of both programmes is the use of the interdisciplinary nature of VU KnF, and the competences of the informatics, finance and marketing specialists building on the long-standing experience of the Institute of Social Sciences and Applied Informatics (ISSAI) at VU KnF.

In terms of the learning outcomes, they fit well with the goal of the programmes, moving from the more general to the more specific. For the Fintech programme skills move from more general 1.1,1.2,2.1 and become increasingly focused on specific fintech skills, such as in 5.3's focus on applying blockchain technique for both centralised and de-centralised systems. Similarly, for the Marketing Technology degree the more general aims of 1 & 2 move onto more specific skills in the MarTech field. These learning outcomes are obtained in the study plan, which is illustrated very well in the Appendix 2 of the SER.

For both courses, in terms of assessment methods students expressed satisfaction with the mix of group and individual work, and the application of different evaluation techniques to different parts of the course. During the visit some marketing technology students expressed a desire for more integration between the informatics and marketing parts of the programme. While this may not be possible with the current staff skill set, there was a request for courses that integrated informatics and marketing in a more fundamental way - such as for example, in terms of the role of marketing in the product ownership and development process.

During the visit, it became clear that the FinTech programme is achieving its goals in educating students with good cross functional competencies, spanning the financial and technical. One area that students mentioned was the challenge in educating those with different disciplinary backgrounds – such as between those with an information systems or computer science background versus an economic or social science background. Some more attention may be needed in supporting students getting 'up to speed' with unfamiliar topics across the different course units.

During the visit, students reported that they appreciate the mix between theory and practice in the courses of both programmes. The students that are working alongside the programmes, also often reported that they found their courses useful in their work. Furthermore, students expressed appreciation of the diversity in courses in both programmes.

## AREA 1: CONCLUSIONS

AREA 1	<b>Negative - 1</b> Does not meet the requirements	<b>Satisfactory - 2</b> Meets the requirements, but there are substantial shortcomings to be eliminated	<b>Good - 3</b> Meets the requirements, but there are shortcomings to be eliminated	<b>Very good - 4</b> Very well nationally and internationally without any shortcomings	<b>Exceptional - 5</b> Exceptionally well nationally and internationally without any shortcomings
<b>First cycle</b>					
<b>Second cycle</b>					

### COMMENDATIONS

1. Enthusiastic teachers and students: the whole evaluation committee were impressed by the competences and skills of the teachers and students.
2. Erasmus plus: Teachers have made 39 Erasmus supported teaching and learning visits since 2019.
3. Consistent use of online study resources such as Moodle.

### RECOMMENDATIONS

#### To address shortcomings

1. Mar tech: There could be more work on integration between the informatics and marketing parts of the course, perhaps in the form of explicit 'bridging and integration' courses.

#### For further improvement

1. Develop a vision for the future of the programmes: While both programmes are well directed towards the needs of society and the employability of students, some more work could be done on articulating a future vision for the programme. This may be the outcome of a broader strategic process for the department.
2. Increase formal engagement with the social partners: There were many excellent connections between social partners and the different programmes (such as with student internships). These engagements could be better formalised with more regular contacts or formal arrangements.
3. Fintech: The programme produces very good cross functional competencies, but there perhaps could be better support for the different disciplinary background of the incoming students.

## AREA 2: LINKS BETWEEN SCIENTIFIC (OR ARTISTIC) RESEARCH AND HIGHER EDUCATION

- 2.1. Higher education integrates the latest developments in scientific (or artistic) research and technology and enables students to develop skills for scientific (or artistic) research

### FACTUAL SITUATION

#### 2.1.1. Research within the field of study is at a sufficient level

Faculty members publish at a reasonable level, although mostly with recognition at the national level. New research groups have been recently initiated around blockchain research, and AI and marketing technology. While this work is at a sufficient level, publication quality could be improved. During the visit the expert panel discussed key research achievements of faculty, and recent research on centralised blockchain technology was highlighted. While research output seems to be stable, new initiatives to improve research quality could be explored.

One area of improvement has been in terms of research funding. There has been an increase in effort around funding applications demonstrated by the involvement in two ongoing EU Horizon projects, and currently one nationally funded project. While there is not a doctoral programme in these areas, there is one student with a thesis topic of which is related to FinTech and two dissertations from the field of management have been organised on topics related to MarTech.

#### 2.1.2. Curriculum is linked to the latest developments in science, art, and technology

For the FinTech SP, research is actively engaged across the different courses, in particular in terms of emergent financial technology, such as with open banking, blockchain, and high-performance computing. MarTech courses in the first cycle are therefore less advanced, although there is clearly research being used across different courses, such as in market modelling and cyber security and marketing.

The evaluation criterion is therefore based on the potential benefit based on the links between science and studies:

1. How students learn to think technically, analyse data, and form evidence-based conclusions.
2. How studies are essential for the advancement of science.

#### 2.1.3. Opportunities for students to engage in research are consistent with the cycle

Students have been involved in drafting academic articles, although this has been declining in recent years. The SER highlighted a number of students who presented at national conferences, and students who published articles in national journals. In the last two years up to 2023 around 5% of students were research active.

### ANALYSIS AND CONCLUSION (regarding 2.1.)

As applied study programmes there are opportunities to explore how research can work between practical applications (such as with the social partners) and recent theoretical developments, so there may be more opportunities to bring these applied but still scientific insights further into the programme. Students' participation in research could be enhanced and explored as an area of improvement for excellent students.

As MarTech is a new course, students are themselves becoming more research-involved as they develop across their study years. This could be encouraged to more of an extent, as a continuation of thesis project work. The research activities of the department are already contributing to the coursework on both programs but core achievements could be better communicated. The involvement in Erasmus+ is positive but could also be enhanced.

## AREA 2: CONCLUSIONS

AREA 2	<b>Negative - 1</b> Does not meet the requirements	<b>Satisfactory - 2</b> Meets the requirements, but there are substantial shortcomings to be eliminated	<b>Good - 3</b> Meets the requirements, but there are shortcomings to be eliminated	<b>Very good - 4</b> Very well nationally and internationally without any shortcomings	<b>Exceptional - 5</b> Exceptionally well nationally and internationally without any shortcomings
<b>First cycle</b>					
<b>Second cycle</b>					

### COMMENDATIONS

1. Faculty are research active and publish in acknowledged journals and forums.
2. New research groups are being formed in relevant areas to the programme.
3. Good relations between students, alumni and employers.

### RECOMMENDATIONS

#### To address shortcomings

1. New initiatives to improve research quality should be explored.

#### For further improvement

1. Strategic research directions could be better identified.
2. Research 'achievements' should be identified and publicised.
3. Encourage teachers to realise Erasmus+ efforts (one semester minimum).

## AREA 3: STUDENT ADMISSION AND SUPPORT

### 3.1. Student selection and admission is in line with the learning outcomes

#### FACTUAL SITUATION

##### 3.1.1. Student selection and admission criteria and procedures are adequate and transparent

The student selection and admission criteria are detailed in the SER. For the first cycle programme, students need to have completed a set of state exams, after which a competition score is calculated. Students are then admitted based on this score. For the second cycle programme, the competition score is calculated on results from the first cycle programme and extracurriculars. The programmes then use cut-off points to determine who is admitted. These cut-off points differ from year to year.

##### 3.1.2. Recognition of foreign qualifications, periods of study, and prior learning (established provisions and procedures)

For both programmes, there are procedures in place to recognise foreign qualifications, periods of study, and prior learning, which allows students to incorporate prior experience into their programme if necessary. Vilnius University follows the relevant legislation, frameworks and procedures for academic recognition. Only one request for recognising competences learned in informal or non-formal learning was made for the FinTech SP, which was denied. There were no such requests for the MarTech SP.

#### ANALYSIS AND CONCLUSION (regarding 3.1.)

The student selection and admission criteria of both programmes follow the standards and form a transparent process. It is clear to students whether they can be admitted to the programme, and on what basis this decision is taken. There are also sufficiently clear procedures in place for academic recognition.

### 3.2. There is an effective student support system enabling students to maximise their learning progress

#### FACTUAL SITUATION

##### 3.2.1. Opportunities for student academic mobility are ensured

The university offers several opportunities to go abroad, both longer term (such as Erasmus(+)) programmes and shorter stays. There are coordinators that arrange formal agreements with higher education institutes abroad. The university has a wide range of agreements with other institutes within Europe.

During the visit, it became clear that these opportunities are not used often by the students in the SPs. For both the first cycle and second cycle programme, students noted that it was difficult to combine with their jobs, as most students have a (full-time) job alongside their studies. Furthermore, the first cycle programme is a relatively young programme, so there have not been many students that have sufficiently advanced in their studies to go abroad.

3.2.2. Academic, financial, social, psychological, and personal support provided to students is relevant, adequate, and effective

There are many different types of support available for students: academic support, mentoring programmes, career counselling, social assistance, scholarships, and others. The students indicated that they felt supported by the SP and the faculty. The faculty also organises activities for the students, both of academic as well as social nature. One such an activity is the Faculty Days, which included debates, workshops, sports, and music. The students expressed appreciation for these facilities.

3.2.3. Higher education information and student counselling are sufficient

Students are informed of the different facilities when they start the programme in an introductory week. There is also information available online, as well as, that students know who to ask for more information if necessary. Students indicate that they are able to find support when required. Students also appreciate that, when necessary, they can contact teachers, for example for extensions for deadlines.

**ANALYSIS AND CONCLUSION (regarding 3.2.)**

Students are content with the support they receive and are also aware of further possibilities for support if necessary. It would be beneficial for students to look into opportunities to go abroad that are easier to combine with (fulltime) jobs.

**AREA 3: CONCLUSIONS**

<b>AREA 3</b>	<b>Negative - 1</b> Does not meet the requirements	<b>Satisfactory - 2</b> Meets the requirements, but there are substantial shortcomings to be eliminated	<b>Good - 3</b> Meets the requirements, but there are shortcomings to be eliminated	<b>Very good - 4</b> Very well nationally and internationally without any shortcomings	<b>Exceptional - 5</b> Exceptionally well nationally and internationally without any shortcomings
<b>First cycle</b>					
<b>Second cycle</b>					

**COMMENDATIONS**

1. Clear admission and academic recognition criteria.
2. Students are content with the support they receive.

**RECOMMENDATIONS**

To address shortcomings

None

For further improvement

1. Increase opportunities for short stays and flexible stays abroad. For example, see if it is possible to arrange with employers and social partners to allow students to go abroad more.

## AREA 4: TEACHING AND LEARNING, STUDENT ASSESSMENT, AND GRADUATE EMPLOYMENT

### 4.1. Students are prepared for independent professional activity

#### FACTUAL SITUATION

##### 4.1.1. Teaching and learning address the needs of students and enable them to achieve intended learning outcomes

The study programmes perfectly fill the gap within the market (marketing + IT, finances + IT). Discussions with students, as well as with social partners confirmed that graduates from Information Systems study programmes achieve the intended study programme learning outcomes and are fully capable of joining the job market.

Methods of study include both, contact and non-contact. Various forms are applied. The second cycle studies are more focused towards problem solving and individual work. It is considered a huge advantage that during the studies, students have a practical opportunity to try and use such tools as, Jira, Miro, Trello, Kahoot, Slido.

##### 4.1.2. Access to higher education for socially vulnerable groups and students with individual needs is ensured.

The facilities used by the study programmes are not easily accessible – old buildings at the downtown of the city, a lot of stairs, which can be a problem for people with disabilities. However, the University is cautious about this situation and in case of individual needs, they are flexible in terms of moving lectures to the first floor (and this was actually implemented due to a real need). The University is not only acting creatively based on a need, but every year is investing in making their historic premises more accessible, where possible.

The University has a huge spectrum of tools for helping socially vulnerable groups and students with individual needs, including, but not limited to:

- Financial assistance
- Studies individualisation
- Individualised assessment of achievements (based on special needs)
- Special scholarship for hard working families
- Scholarship for top performing students
- Additional applications for Belarusian students who are persecuted in their country

#### ANALYSIS AND CONCLUSION (regarding 4.1.)

Evidence provided by the University, as well as meeting with graduates and social partners, fully confirm the feeling that students are fully prepared for their independent professional activity. Last but not least – they not only have good technical skills, but know how to lead teams, negotiate with colleagues, present new information, perform constructive discussions and reach agreements.

## 4.2. There is an effective and transparent system for student assessment, progress monitoring, and assuring academic integrity

### FACTUAL SITUATION

#### 4.2.1. Monitoring of learning progress and feedback to students to promote self-assessment and learning progress planning is systematic

Monitoring of the progress exists on both levels – the course, as well as study programme. Course level monitoring focuses on controlling drop-out level, providing assistance, navigation in terms of failed exams and similar. Study programme – studies satisfaction, results of professional practice, thesis defence results. Both levels of monitoring are systematic and at a good level. The University has very systematic and clear methods for feedback provisioning towards students. Cumulative marking system is used, which creates an opportunity to adjust dedicated time and attention at the beginning of the module, instead of a surprise at the end. Feedback is provided during contact sessions, as well as formalised within the University training platform.

#### 4.2.2. Graduate employability and career are monitored

Graduates' careers are monitored by the University, numbers are tracked and analysis by position taken is performed. Social partners indicated that they are very happy about the outcomes of evaluated study programmes. However, it seems that communication between the University and social partners isn't formalised and clear/transparent. Feedback is collected and decisions are made at ad hoc informal breakfasts, rather than in a formalised way, where more partners would be capable of providing feedback and sharing their ideas.

#### 4.2.3. Policies to ensure academic integrity, tolerance, and non-discrimination are implemented

Students were capable of answering questions, they knew where to go and how to act in case academic integrity, intolerance or discrimination would occur. The University provided all processes implemented and applied. However, it is difficult to check if processes are working due to the fact that they had zero academic integrity violation cases during the last three years.

#### 4.2.4. Procedures for submitting and processing appeals and complaints are effective

It is clear for students how to raise a dispute and an appeal, as students are familiar with the process. However, as in the case with academic integrity, tolerance and discrimination, during the last three years there were zero real cases within study programmes, making it impossible to check if procedures are well-implemented.

### ANALYSIS AND CONCLUSION (regarding 4.2.)

The University is at a good level in terms of evaluating students and providing feedback for them. However, communication with social partners might look a bit foggy and require improvement and formalisation. As well as lack of cases during the last three years related to appeals, disputes, academic integrity violations, tolerance and discrimination raises a lot of questions about effectiveness of the processes and the University willingness to see the real situation.

## AREA 4: CONCLUSIONS

AREA 4	<b>Negative - 1</b> Does not meet the requirements	<b>Satisfactory - 2</b> Meets the requirements, but there are substantial shortcomings to be eliminated	<b>Good - 3</b> Meets the requirements, but there are shortcomings to be eliminated	<b>Very good - 4</b> Very well nationally and internationally without any shortcomings	<b>Exceptional - 5</b> Exceptionally well nationally and internationally without any shortcomings
<b>First cycle</b>					
<b>Second cycle</b>					

### COMMENDATIONS

1. Study programmes prepare experts with a good balance between soft skills and hard skills.
2. Modern tooling, that students are working with during the studies.
3. Clear and systemic feedback provisioning towards the students.

### RECOMMENDATIONS

#### To address shortcomings

1. Communication with social partners needs more formalisation to increase transparency and clarity.

#### For further improvement

1. The University should investigate lack of evidence in terms of appeals, disputes, academic integrity violations, tolerance and discrimination.

## AREA 5: TEACHING STAFF

### 5.1. Teaching staff is adequate to achieve learning outcomes

#### FACTUAL SITUATION

##### 5.1.1. The number, qualification, and competence (scientific, didactic, professional) of teaching staff is sufficient to achieve learning outcomes

The IS Department operates under a group of committed teaching staff. The number of teaching staff, their qualification and their competences comply with the general requirements. The IS SPs are taught by a number of teaching staff who have been working at VU for at least 3 years at a rate of at least 0.5 FTE.

Over the assessment period (2019/20-2-22/23), there has been an increased number of teaching staff, analogous to the number of recruited students. In 2019/20 and 2020/2021, there was 1 partnership Prof, 4 Assist Profs, 7 Assoc Profs and 2 Profs. Following a number of promotions and additional appointments, staffing grew from a total number of 14 in 2019/2020 and in 2020/2021 to 25 in 2021/22 and 28 in 2022/23. In 2023/24, the department reports a further increase to 32.

Teaching staff do undertake scientific, didactic and professional activity. Four (4) out of the 32 teachers do not report any publications track record with half of them (2) to report research experience.

#### ANALYSIS AND CONCLUSION (regarding 5.1.)

The RP has considered the submitted documentation and met with teaching staff to understand their competence in relation to whether this is sufficient to achieve the IS SPs learning outcomes.

It was found that teaching staff comply with the general requirements. Specifically, over 80% of first and second cycle have a research degree. Also, 12% of teachers are practitioners and 25% of the subjects in the field are taught by professors. It was found that the FinTech SP thesis committees are annually attended by a social partner. The MarTech SP is a 1 year later implementation and therefore, attendance by a social partner is to take place in 2025. The low number of intake (up to 50 students annually) contributes to an excellent staff/student ratio (SSR).

There is a student survey which gathers student feedback, and it is used as part of the teaching staff's annual review and 5-year performance and competence and also as part of the annual SPs review and self-assessment.

Reasonable emphasis is given in highlighting the importance of teaching and research as it is evident by the number of teaching staff being research active. Despite the fact that the majority of teaching staff undertake research, outputs have room for improvement in terms of publishing them in higher ranking conferences and journals. In the same way, teaching staff have to intensify their activity in relation to research informed teaching. Research expertise and publication records are relevant and consistent to the IS SPs.

During the meeting with teaching staff, it was found that they have sufficient knowledge to facilitate and drive discussions related to the future strategic directions of the IS SPs. Teaching staff expressed their positive views about sustainability and overall, about the UN SDGs (United Nation Sustainable Development Goals).

The evaluation criterion is therefore based on the benefit of the link between academic staff and the potential for innovation and creativity:

1. How teaching staff delivers high-quality and modern instruction to students?
2. How is the teaching staff involved in research and scholarship?

## 5.2. Teaching staff is ensured opportunities to develop competences, and they are periodically evaluated

### FACTUAL SITUATION

#### 5.2.1. Opportunities for academic mobility of teaching staff are ensured

Teaching staff improve their key competences by participating in exchanges and various seminars and trainings organised by the University and Kaunas Faculty, through membership in international networks and associations, and participation in projects of international organisations.

The IS department is extremely active in Erasmus+. Most professors have visited international countries as part of an Erasmus+, project collaboration or as a guest of certain organisations. In particular, during the review period, there were 41 visits in total in which 19 were made from associate professors and 11 from professors. Teaching staff have visited several countries all over the world, a sample includes Greece, Turkey, Estonia, USA, UK, Ukraine, Spain, Malta, Italy, Cyprus, Canada, Ireland, Austria, Switzerland, amongst others. There were about 10 incoming visitors delivering guest lectures etc.

#### 5.2.2. Opportunities for the development of the teaching staff are ensured

Teaching staff have access to an induction programme which incorporates training, attendance to a mandatory teaching course and a mentor. It was also found that teaching observation was not a typical and systematic process.

### ANALYSIS AND CONCLUSION (regarding 5.2.)

The RP has considered the submitted documentation and met with teaching staff to understand and clarify how the University supports teaching staff to help them achieve the SPs learning outcomes. Specifically, the RP focused on the identification of what mobility and developmental opportunities are available to teaching staff in ensuring that they do continuously keep developing their competence to an appropriate level for them to achieve the SPs learning outcomes.

All teaching staff (including new teaching staff) have to undergo an annual performance evaluation review. New academic staff are also assigned a mentor. There are clear criteria for different teaching ranks (professor, associate professor etc), clear job role descriptions and guidelines for all teaching staff having a fair opportunity for their progression and promotion over the years.

The University has embedded central procedures to support teaching staff induction and staff development, for example, dealing with students with special needs or GDBR. There was a very robust central unit in the university which provides very good training on pedagogical competence. There were cases where teaching staff peer reviewed each other's work so they could improve their competence. It was also observed that there were few instances where teaching staff have not undertaken teaching and observation peer review procedures. As a whole, there is a room for improvement in terms of offering consistent services. This is

important, since lack of a consistent approach to a teaching and observation peer review procedure can lead to a variety of quality levels in student experience. Further to this, where the practice did exist, it was perceived more like a buddy rather than a coach or a mentor.

The RP felt that for a university of this scale there should be a menu for staff development. In the same way, there seems that despite that teaching staff perceive what are the key indicators for their competence there is no full clarity on what needs to be achieved over a 5-year period for their tenure (interview). It is being recommended a more formal objectives plan.

Every teaching staff is encouraged to submit articles to relevant journals and also submit papers for presentation to conferences.

Staff mobility is achieved by Erasmus+.

## AREA 5: CONCLUSIONS

AREA 5	<b>Negative - 1</b> Does not meet the requirements	<b>Satisfactory - 2</b> Meets the requirements, but there are substantial shortcomings to be eliminated	<b>Good - 3</b> Meets the requirements, but there are shortcomings to be eliminated	<b>Very good - 4</b> Very well nationally and internationally without any shortcomings	<b>Exceptional - 5</b> Exceptionally well nationally and internationally without any shortcomings
<b>First cycle</b>					
<b>Second cycle</b>					

### COMMENDATIONS

1. The range of available induction, training and staff development opportunities.
2. An excellent Staff/Student Ratio (SSR).
3. Teaching staff have been very active in undertaking available mobility opportunities.

### RECOMMENDATIONS

#### To address shortcomings

1. Include teaching observation and peer review procedure as part of the 5-year objectives plan with each teaching staff member and ensure that each teaching staff have yearly progress checks with their line manager.

#### For further improvement

1. Develop a menu of training for staff development.
2. Encourage publication in high quality international journals.

## AREA 6: LEARNING FACILITIES AND RESOURCES

### 6.1. Facilities, informational and financial resources are sufficient and enable achieving learning outcomes

#### FACTUAL SITUATION

##### 6.1.1. Facilities, informational and financial resources are adequate and sufficient for an effective learning process

The IS SPs are delivered at Kaunas site and they are housed in an old set of buildings. The IS department has access to 11 classroom-labs which can accommodate a range of student groups. The smallest lab accommodates 15 students and the largest over 150.

All students have access to the computational resources both in situ and also remotely via VPN. Remote access has been granted during the post-covid 19 period. Students have access to a virtual server, a data centre (cloud), 5 TB of personal cloud storage, a 100 GB mailbox, the possibility to install Microsoft Office and other MS Office 365 programmes on PCs and use free of charge during the study period. VU is a member of the MSDN Academic Alliance (MSDNAA), which allows most Microsoft software products to be used in the study process.

All students have also access to special software including: ERP; SAP; S4/HANA; SPSS; STATISTICA; PowerBI; Hortonworks; R; AX Dynamics software; Statistica 12.6; MagicDraw UML Enterprise Edition Version 18; PowerSIM Studio Base; CLIPS; CORVID; ES Builder; Viscosity SOMine6; TBL-2014L-BE; ADOBE Creative Suite 5 Master Collection; MathCad12; SMicrosoft Expression Web; NetBeans; QGIS; OANDA trading platform; Comindwork; MS Virtual Academy, simulation game EcoSim Adam, SPSS Statistics Standard.

IS SPs use Moodle as a VLE and the EPAS – Electronic Plagiarism Awareness System, which provides a computer-based check of the independence of final theses.

The library at Kaunas site is a small physical facility which however, provides remote access to over 20,000 titles online.

##### 6.1.2. There is continuous planning for and upgrading of resources.

There is an annual budget and a plan to support continuous planning for and upgrading of resources. The budget varies year on year, it is healthy, and planning follows the set requirements.

#### ANALYSIS AND CONCLUSION (regarding 6.1.)

As a whole, the facility has a great character. The building, however, contains no lift and a number of staircases which makes it unsuitable for people having special needs that are related to mobility challenges or similar shortcomings. In fact, the facility also seems of a high risk to any person. This is due to the use of sets of staircases that overlap with other sets of staircases. It is noted that there are definitive plans in place to add an elevator to the building and this should help accessibility.

There is a sufficient number of labs which meet all the requirements in terms of having access to resources. Access to software is excellent. Computational resources are being updated gradually. For courses related to computing, the use of current software and hardware is particularly important as it prepares the student in having first hand use and experience in resources analogous to a professional working environment.

Access to online digital libraries and online databases are of good standard and suffice for the scope of the SPs.

## AREA 6: CONCLUSIONS

<b>AREA 6</b>	<b>Negative - 1</b> Does not meet the requirements	<b>Satisfactory - 2</b> Meets the requirements, but there are substantial shortcomings to be eliminated	<b>Good - 3</b> Meets the requirements, but there are shortcomings to be eliminated	<b>Very good - 4</b> Very well nationally and internationally without any shortcomings	<b>Exceptional - 5</b> Exceptionally well nationally and internationally without any shortcomings
<b>First cycle</b>					
<b>Second cycle</b>					

### COMMENDATIONS

1. Access to a range of software resources both in situ and remotely.
2. Great range of classroom-labs facilities which suffice for the IS SPs.

### RECOMMENDATIONS

#### To address shortcomings

1. While rich in character the buildings are dated and present challenges for mobility and accessibility access.

#### For further improvement

1. Risk assessment forms about the use of the buildings should be implemented.

## AREA 7: QUALITY ASSURANCE AND PUBLIC INFORMATION

- 7.1. The development of the field of study is based on an internal quality assurance system involving all stakeholders and continuous monitoring, transparency and public information

### FACTUAL SITUATION

#### 7.1.1. Internal quality assurance system for the programmes is effective

VU uses a variety of processes and procedures for internal quality assurance. These include the monitoring of outcomes of courses, the systematic evaluation of courses, and informal contact moments between different stakeholders. The VU Study Programme Regulation stipulates that the programmes must be periodically updated and monitored on a regular basis. The Study Programme Committee (SPC) is in charge of this.

#### 7.1.2. Involvement of stakeholders (students and others) in internal quality assurance is effective

The different stakeholders the panel spoke to during the site visit indicated that they were content with their level of involvement in the programmes. Students discussed feeling heard in their feedback. They also reported changes that had occurred after feedback. However, the panel also heard that there is no official or standardised way for teachers to report back on changes made from feedback from students.

#### 7.1.3. Information on the programmes, their external evaluation, improvement processes, and outcomes is collected, used and made publicly available

It is clear how the university monitors the impact of quality improvement initiatives to ensure their effectiveness and how it periodically evaluates that faculty leaders are competent and manage the faculties well. The university website covers curricula, studying conditions, and other relevant factors like graduation rates, employment rates, and student satisfaction (in this case, there are reports from 2014 and older). When searching information on VU websites about “Information systems”, satisfactory information is returned.

#### 7.1.4. Student feedback is collected and analysed

It is transparent how the VU collects data from sources such as student surveys, course evaluations, employer surveys, and how it identifies areas of strength and weakness. As mentioned before, there is no standardised way in which teachers report back on how they incorporated feedback.

### ANALYSIS AND CONCLUSION (regarding 7.1.)

The different stakeholders are sufficiently involved in the quality assurance of the programme, both in the official procedures, as well as in practice. It would be beneficial for clarity and communication if the processes were to be depicted in diagrams. Furthermore, in order to improve students' understanding of what is done with their feedback, it would be beneficial to create systematic ways for students to learn about what has been done with their feedback.

## AREA 7: CONCLUSIONS

AREA 7	<b>Negative - 1</b> Does not meet the requirements	<b>Satisfactory - 2</b> Meets the requirements, but there are substantial shortcomings to be eliminated	<b>Good - 3</b> Meets the requirements, but there are shortcomings to be eliminated	<b>Very good - 4</b> Very well nationally and internationally without any shortcomings	<b>Exceptional - 5</b> Exceptionally well nationally and internationally without any shortcomings
<b>First cycle</b>					
<b>Second cycle</b>					

### COMMENDATIONS

1. Strong basis in the internal quality assurance system.

### RECOMMENDATIONS

To address shortcomings

*None*

For further improvement

1. Clarify the processes of quality assurance and public information by using diagrams.
2. Standardise way for teachers to report back on what they did with the feedback from students.

## V. SUMMARY

Information Systems (IS) study programmes are carried out at Kaunas Faculty of Vilnius University (hereinafter referred to as “KnF”). It is a first cycle (Bachelor) study programme (hereinafter referred to as “SP”) “Marketing Technologies” (hereinafter referred to as “MarTech”) and the second cycle (Master) SP “Finance Technologies” (hereinafter referred to as “FinTech”).

"Marketing Technologies" integrates knowledge of marketing practices and information systems, to develop skills amongst students to digitise and transform marketing business models. While the first class are still to graduate (in 2025), there is a need within Lithuania and internationally for graduates who can bridge the 'skills gap' between IT and marketing professionals. "Financial Technology" combines the finance and technology subject areas, with courses designed to train professionals in developing and applying financial technology solutions and tools, such as blockchain, cryptocurrencies, smart contracts, and big data analytical models. In the field of financial technology in Lithuania and internationally, there has been a large expansion of FinTech companies alongside the introduction of innovative financial services.

For both courses, in terms of assessment methods students expressed satisfaction with the mix of group and individual work, and the application of different evaluation techniques to different parts of the course.

It is clear that the marketing technology programme is of a high quality. However, some marketing technology students expressed a desire for more integration between the informatics and marketing parts of the programme. While this may not be possible with the current staff skill set, there was a request for courses that integrated informatics and marketing in a more fundamental way - such as for example, in terms of the role of marketing in the product ownership and development process. It is also clear that the FinTech programme is achieving its goals in educating students with good cross functional competencies, spanning the financial and technical. One area that students mentioned was the challenge in educating those with different disciplinary backgrounds – such as between those with an information systems or computer science background versus an economic or social science background. Some more attention may be needed in supporting students getting 'up to speed' with unfamiliar topics across the different course units.

During the visit, students reported that they appreciate the mix between theory and practice in the courses of both programmes. The students that are working alongside the programmes, also often reported that they found their courses useful in their work. Furthermore, students expressed appreciation of the diversity in courses in both programmes.

Faculty members publish at a reasonable level, although mostly with recognition at the national level. New research groups have been recently initiated around blockchain research, and AI and marketing technology. While this work is at a sufficient level, publication quality could be improved. During the visit the assessment committee discussed key research achievements of faculty, and recent research on centralised blockchain technology was highlighted. While research output seems to be stable, new initiatives to improve research quality could be explored.

Students have been marginally involved in drafting academic articles, although this has been declining in recent years. This could be explored as an area of improvement for excellent students. The SER highlighted a number of students who presented at national conferences, and students who published articles in national journals. In the last two years up to 2023 around 5% of students were research active. As MarTech is a new

study programme, students are themselves becoming more research-involved as they develop across their study years. This could be encouraged to more of an extent, as a continuation of thesis project work.

The facilities used by the study programmes are not easily accessible - old buildings at the downtown of the city, a lot of stairs, which can be a problem for those with mobility issues. However, the University is cautious about this situation and in case of individual needs, they are flexible in terms of moving lectures to the first floor (and this was actually implemented due to a real need). The University is not only acting creatively based on a need, but every year is investing in making their historic premises more accessible, where possible.

Evidence provided by the University, as well as meeting with graduates and social partners, fully confirm the feeling that students are fully prepared for their independent professional activity. Last but not least – they not only have good technical skills, but know how to lead teams, negotiate with colleagues, present new information, perform constructive discussions and reach agreements.

The University is at a good level in terms of evaluating students and providing feedback for them. However, communication with social partners might require improvement and formalisation.

The department is extremely active in Erasmus+. Most of professors have visited international countries as part of an Erasmus+, project collaboration or as a guest of certain organisations. In particular, during the review period, there were 41 visits in total in which 19 were made from associate professors and 11 from professors.

There is a sufficient number of labs which meet all the requirements in terms of having access to resources. Access to software is excellent. Computational resources are being updated gradually. It is thought that for a course related to computing, the use of current software and hardware is particularly important as it prepares the student in having first hand use and experience in resources analogous to a professional working environment.

Overall, the two programmes are clearly educating at a high level and producing students who are extremely employable and benefit Lithuanian society.

The committee thank all those involved in the visit for their generous and warm welcome, and the support they have given to the review process.

## VI. EXAMPLES OF EXCELLENCE

*Examples of excellence exhibiting exceptional characteristics nationally and internationally.*

1. The University has embedded central procedures to support teaching staff induction and staff development, for example, dealing with students with special needs or GDBR. There was a very robust central unit in the university which provides very good training on pedagogical competence.