



**REPORT
OF THE EXPERT PANEL
IN THE PROCEDURE OF INITIAL ACCREDITATION OF THE
UNIVERSITY UNDERGRADUATE STUDY PROGRAMME OF
LOGISTICS, UNIVERSITY OF ZAGREB, FACULTY OF
TRANSPORT AND TRAFFIC SCIENCES**

Date of accreditation: 25 April 2024

May, 2024



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INTRODUCTION

The Agency for Science and Higher Education (the Agency) is an independent legal entity with public authority, registered in the court register, and a full member of the European Quality Assurance Register for Higher Education (EQAR) and the European Association for Quality Assurance in Higher Education (ENQA).

All study programmes delivered by public and private higher education institutions are subject to the initial accreditation of study programmes, a procedure conducted by the Agency in accordance with the Act on Quality Assurance in Higher Education and Science (Official Gazette 151/22) and by following *the Standards and Guidelines for Quality Assurance in the European Higher Education Area* (ESG) and good international practice in quality assurance of science and higher education.

The Agency's Accreditation Council appointed an independent expert panel for the evaluation of the university undergraduate study programme of Logistics, University of Zagreb, Faculty of Transport and Traffic Sciences.

Members of the Expert Panel:

- Prof. Miquel Àngel Piera, PhD, Universitat Autònoma de Barcelona, Kingdom of Spain, Panel chair,
- Assoc. Prof. Mate Barić, PhD, University of Zadar, Republic of Croatia,
- Prof. Jerzy Korczak, PhD, International University of Logistics and Transport in Wrocław, Republic of Poland,
- Assoc. Prof. Dora Naletina, PhD, University of Zagreb Faculty of Economics and Business, Republic of Croatia,
- Neven-Lucian Davidović, student, Josip Juraj Strossmayer University of Osijek, Faculty of Electrical Engineering, Computer Science and Information Technology Osijek, Republic of Croatia.

The Expert Panel held meetings with the following groups:

- Management,
- Head of the study programme,
- Full-time teaching staff that will participate in the delivery of the study programme,
- External associates,
- Representatives of the business sector, potential employers.

The Expert Panel visited the laboratories, the library, the student service office and the classrooms.



The Expert Panel drafted this Report on the initial accreditation of the university undergraduate study programme Logistics, University of Zagreb, Faculty of Transport and Traffic Sciences based on the Proposal of the university undergraduate study programme Logistics, University of Zagreb, Faculty of Transport and Traffic Sciences, other relevant documents and the site visit.

The Report contains the following elements:

- Basic information on the study programme,
- Detailed analysis of each quality standard, recommendations for improvement and quality grade for each standard,
- Final recommendation of the Expert Panel,
- Appendices (quality grade summary by each assessment area and standard and the site visit protocol).

In the analysis of the documents, site visit and meetings held at the higher education institution Faculty of Transport and Traffic Sciences and writing of the Report, the Expert Panel was supported by:

- Maja Šegvić, coordinator, ASHE,
- Iva Žabarović, assistant coordinator, ASHE,
- Maja Mrsin, interpreter,
- Ivana Rončević, translator of the Report, ASHE.



BASIC INFORMATION ON THE STUDY PROGRAMME

Name, seat and OIB (Personal Identification Number) of higher education institution:
Faculty of Transport and Traffic Sciences, University of Zagreb, Vukelićeva 4, 10 000
Zagreb, Croatia, 25410051374

Name and type of study programme: university undergraduate study programme
Logistics

CroQF/EQF/QF-EHEA level: CroQF level 6, EQF level 6, QF-EHEA level 1

Scientific or artistic area and field of study programme: Technical Sciences, Traffic and
Transport Technology

ISCED FoET classification: ISCED 6

Programme duration: 6 semesters (three years)

Number of ECTS points acquired on completion of study programme: 180

Academic or professional degree / qualification obtained upon the completion of the
study programme (if the study programme has several specializations, the issued
degree/qualification cannot be named according to the specialization, but at the level of
the study programme): bachelor of engineering in logistics

Language of delivery: Croatian

Place of delivery of the study programme (at the head office or outside the head office of
the higher education institution): Zagreb

Method of delivery of the study programme: In-person

Admissions quota (for full-time and part-time students): 100 regular, 60 part-time
students

Academic year in which the study programme delivery is to commence: 2024/25

In case of joint programmes delivered by Croatian higher education institutions, please
include a list co-providers/partners: not applicable



THE EXPERT PANEL'S RECOMMENDATION TO ASHE'S ACCREDITATION COUNCIL

1. to issue a licence

DETAILED ANALYSIS OF EACH STANDARD, RECOMMENDATIONS FOR IMPROVEMENT AND QUALITY GRADE

I. Internal Quality Assurance

1.1. Clear justification for the introduction of the new study programme has been provided with regard to the mission and strategic goals of the higher education institution, as well as economic and societal needs.

Analysis: The proposed study programme is developed from the current programme which has logistics included in the general curriculum of transport technologies. As a result of changes in the global transport technologies there was a need to transform the current programme in order to provide more specific student competences in logistics. The needed changes in the programme were initiated by the Faculty staff and external stakeholders which employ a great number of graduates from the former programme in line with the University strategies. The programme is structured in order to fulfil the Faculty mission and vision, which implies that the institution is recognised in the EU and maintains the sustainability of the study programmes. The proposed programme is in line with EU guidelines direction of research and development of the transport and logistics sectors.

The proposed programme is compared to similar programmes in Croatia and Europe. Similar Croatian programmes are *Maritime Logistics and Management* at the University of Rijeka which is delivering the programme based on maritime and harbour transport. There is a study programme *Logistics and Mobility* at University North which has similar basic courses, however the biggest difference is in programme performance (the number of compulsory and elective courses) and a larger number of economics courses. There is also the study programme of *Transport Logistics* at Hrvatsko Zagorje Krapina University of Applied Sciences, which is a vocational course as opposed to the previous ones. There are similarities in basic courses as well as in some specific courses. The difference is in syllabuses which are more focused on the field of traffic technologies and transport. *Supply Chain Management* at Zagreb School of Business is also a vocational programme.



The biggest difference is based on social and economic orientation of analysed courses. A similar programme in the EU is the programme *Industrial Engineering Specialising in Logistics and Mobility* at Hamburg University of Technology which is based on engineering specialisation in logistics and they differ in transportation processes. The programme offers different types of mandatory and election courses available for students. There is also the Specialised University in Logistics at Molde which among all of those provides multiple programmes in logistics and transportation. Programme is full time with a 40-hour week load.

The proposed enrolment quotas are 20% higher than the current full-time programme on *Intelligent Transportation and Logistics*. In the academic year 2023/2024 the full-time quota was filled 99% and part-time quota was filled 30%. As the report from the Croatian Employment Bureau showed that in one year only 1.8% of students are unemployed, and current data show a large demand in the area of qualified workers on the labour market. The increment in full-time quota is explained as a crucial demand for this kind of employees on the market.

Recommendations:

As the Faculty has remarked that the quota for full-time students will be 100 students which represents an increase of 20%, it needs to be highlighted that there is no background for such an increase. If the Faculty wants to increase this quota, then this increase should be achieved through a decrease in the quotas in other studies delivered by the Faculty.

Quality grade: Fulfilled

1.2. The study programme has undergone an appropriate internal quality assurance process and has been formally approved by the higher education institution.

Analysis:

The proposed programme is the result of research in the future need in the labour market done by the Croatian Chamber of Traffic and Transport Technologies. The programme development met the criteria and procedures which are mandatory in the process of creating a new study programme. The process was initiated by the Faculty dean and led by the Vice dean in cooperation with quality management board committee and the committee for study programmes and curriculum. The development was regularly presented to student and alumni representatives. Student meetings were held on 29 November and 6 December 2022. The proposal for adopting the study programme was adopted at the 14th Faculty Council meeting on 20 June 2023.



Recommendations: No recommendations

Quality grade: Fulfilled

1.3. The higher education institution will collect, analyse and use relevant data for the effective management and continuous enhancement of the study programme in accordance with the published quality assurance policy.

Analysis:

Quality assurance policy is available on the website and it was last updated on 15th September 2023 when the new Dean was appointed. The quality policy assures that internal procedures are carried out which ensure enhancement of the programme in accordance with the University and stakeholders needs. The current strategy spans the period from 2023 to 2029. The Faculty underwent the reaccreditation process in 2018 and that is reflected in the Faculty activities in terms of adjusting the action plan in order to correct irregularities. The last version of the five-year action plan was made in 2022. The Faculty also has the ISO 9001:2015 quality standard which was adopted in order to assure the quality of teaching programmes. That system is annually checked by external audit.

The data needed for tracking all aspects of the study are ensured through the student questionnaires and department meetings. Students questionnaires are the basic guideline in quality process to assess the programme from the end user point of view. They are also discussed in the Faculty Council meetings and distributed to students via their representatives. The department meetings are described as a place where the curriculum issues can be detected and resolved.

Recommendations: No recommendations

Quality grade: Fulfilled

1.4. The higher education institution informs the public about the study programmes it offers, as well as plans to offer new programmes, i.e. change made to existing ones.

Analysis:

The current study programme *Intelligent transport systems and logistics* is changed in order to adapt to new market demands and to attract more students. The market demand was communicated with external stakeholders. The new programme will ensure better visibility of graduates on the market and their employment in a shorter time period. The



communication with external stakeholders is ongoing since they participate in the Faculty projects and that ensures constant programme updates in accordance with new technologies. The changes can be done through the Faculty Council if there is no change in more than of 1/3 of the learning outcomes achieved on completion of the study programme.

The Faculty arranges career days and open days to increase their visibility and to increase the attractiveness of the study programmes. The Faculty is active at the University level participating in the activities which allow presenting the programmes and increasing visibility. The Faculty website is regularly updated with new information and documents. Also, the page is available in English. The Faculty is active on social networks where they have more than 5000 followers.

Student enrolment is organised through a common state graduation system which ensures a dynamic student enrolment process with instant feedback.

Recommendations: No recommendations

Quality grade: Fulfilled

II. Study programme

2.1. The proposed study programme is compatible with the qualification standard entered in the Croatian Qualifications Framework Register.

Analysis: Not applicable

Recommendations:

Quality grade:

2.2. The intended learning outcomes at the level of the study programme are aligned with the competences a student should gain by completing the study programme, as well as with the CroQF and EQF level.

Analysis:

The assessment was based on the proposed study programme revised on 28 May 2024, encompassing an overview of competencies and skills essential for the current labour market demands. The intended learning outcomes have been clearly identified and align closely with those of equivalent programmes offered by universities both in Croatia and across Europe. In the Republic of Croatia, two universities (University North and



University of Rijeka) and two universities of applied sciences (Hrvatsko Zagorje Krapina University of Applied Sciences and Zagreb School of Business) provide specialized training in logistics at the undergraduate level. These programmes share similarities in certain core courses in terms of content and learning objectives, albeit often differing in course nomenclature.

Learning outcomes (LO) from the undergraduate study programme on *Maritime Logistics & Management* at the University of Rijeka are quite similar to the learning outcomes proposed in the undergraduate Logistics programme under accreditation. It is worthwhile to highlight an important LO on Operational Research in which optimization methods provides the baseline for academic support to other courses.

The Panel members found during the meeting with external stakeholders that there is a good representation of business and industry logistics sector and that the proposed learning outcomes of the new Logistics programme clearly reflect the current labour market needs in most of current logistics processes in warehouses, inventory management and transport at operational level. Furthermore, external stakeholders also recognize that learning outcomes achieved in the *Logistics* undergraduate programme is an enabler to continue education at Master level for more knowledge-based labour market positions at strategic and tactical decision-making in supply chain management. The learning outcomes also rely on an analysis of labour market needs conducted within three distinct development projects supported by the Faculty of Transport and Traffic Sciences. These projects include Logistics and Mobility Management (LoMi), Development of higher education occupational standards, qualification standards, and study programmes aligned with the Croatian Qualification Framework in transport and logistics (ProLog) for graduate-level qualifications, and Enhancement and implementation of professional practice (APPROACH FPZ).

Although all the learning outcomes are specific to the logistic field, the Panel members recognize that competences acquired by the students paves the way to solve operational problems in other related application areas. Course topics such as Cost-Benefit Analysis, Basics of Simulation, Project Management, Quality Management and Business Analytics are some examples of general and transferable competences.

It is worthwhile to highlight the importance of the compulsory course on “Operational Research” to encourage students to tackle multicriteria optimization problems that considers not only business KPIs, but also sustainable and environmental indicators.

Recommendations: No recommendations

Quality grade: Fulfilled



2.3. The intended course outcomes are aligned with the intended learning outcomes at the level of the study programme.

Analysis:

The contribution of each course to the learning outcomes is summarized in Table 2. Programme outcomes is coherent with the course description and the expected learning outcomes defined for each course in field 1.3 Intended course learning outcomes.

The assessment was based on the intended course outcomes and the overall programme level outcomes from the revised document dated 28 May 2024. The intended course outcomes are well aligned with the broader undergraduate study programme objectives.

Recommendations: No recommendations

Quality grade: Fulfilled

2.4. The study programme content allows students to achieve all the intended learning outcomes.

Analysis:

The assessment was based on the proposed study programme revised on 28 May 2024, particularly focusing on the core courses essential for the profession. Compulsory courses are well identified to ensure students acquire all the Learning Outcomes. Concerning vertical mobility, upon completion of the undergraduate *Logistics* programme, students have the opportunity to enrol in a graduate study programme. If a student completes their undergraduate studies at another technical faculty, they must undertake equivalency courses during the first year of the graduate programme.

The revised document contains the Course Enrolment Requirements in the Course description document, which provides the right information for horizontal mobility among students, particularly those participating in exchange programs such as Erasmus+ and CEEPUS, both in Croatia and the European Union.

Recommendations: No Recommendations.

Quality grade: Fulfilled



2.5. ECTS distribution is aligned with the anticipated actual student workload.

Analysis: The assessment was based on the detailed analysis of the allocated European Credit Transfer and Accumulation System ECTS in the study programme, extended in the revised document dated 28 May 2024, and student workload.

The estimated student workload is well aligned with the amount of contact hours proposed in the different courses.

Recommendations: No Recommendations

Quality grade: Fulfilled.

2.6. Student/professional practice is an integral part of the study programme (if applicable).

Analysis: The assessment was focused on the development of practical skills within the study programme and the integration of professional practice. Acquiring practical experience is a crucial component of the curriculum, facilitating a deeper integration of theoretical knowledge with practical skills and enhancing students' employability prospects. This practical experience will be facilitated through collaboration with mentors from industrial and logistics companies, allowing students to gain valuable insights and hands-on experience in real-world settings. Expertly guided professional practice will culminate in final theses focusing on specific real-life logistics problems, providing students with the opportunity to demonstrate their understanding and application of learned concepts in practical scenarios.

Based on the provided documents, the Faculty currently maintains 58 signed contracts for supervised professional practices with various economic entities, with 19 of these contracts directly related to the study of logistics. This demonstrates a robust commitment to providing students with ample opportunities for practical experience and industry exposure within the logistics field. The Student Internship is a compulsory course that students should take during summer as integral part of the new Logistic programme.

Recommendations:

It is recommended to strengthen relations with business practice not only through new contracts but also through greater involvement of practitioners in the teaching process. This increased involvement will enrich the educational experience by offering students direct exposure to real-world challenges and insights from seasoned professionals.



Furthermore, there is a proposal to elevate ECTS allocation for the Final Thesis to 8 credits. This adjustment acknowledges the pivotal role of the Final Thesis in students' academic journey, as it represents a culmination of their learning and application of acquired knowledge. Increasing the ECTS credits for the Final Thesis underscores its significance in fostering comprehensive academic and professional development among students.

Quality grade: fulfilled

2.7. If the completion of the study programme allows students access to a regulated profession, the programme is aligned with national and European regulations and the recommendations of national and international professional associations.

Analysis: Not applicable

Recommendations:

Quality grade:



III. Teaching process and student support

3.1. Admission requirements and criteria as well as the admissions procedure are clearly defined and transparent, and guarantee that students will possess the necessary prior knowledge.

Analysis: For enrolment of the proposed study programme Logistics, the same criteria will be evaluated as for enrolment in the study programme currently conducted under the name *Intelligent Transport Systems and Logistics*. The admission requirements are completed four-year high school and successfully passed state graduation exam. In the admission process, credits are awarded based on high school success and success in mathematics at the state graduation exam. Passing the physics exam at the state graduation exam is not a requirement for enrollment in the study, but if it is passed, additional points are awarded. Additional student achievements are also evaluated, under which is considered if the student has won one of the first three places in national competitions in mathematics, physics or in the subject of traffic profession. These enrollment conditions are acceptable. Recognition of secondary education completed abroad is a separate procedure from enrolment and it is carried out by the Agency for Science and Higher Education. All of the above is clearly defined and transparently stated on the official website of the Faculty.

Recommendations: No recommendations

Quality grade: Fulfilled

3.2. The planned teaching methods guarantee student-centred teaching and the achievement of all intended learning outcomes.

Analysis: Different types of classes (lectures, seminars, workshops, exercises, discussions, debates, e-learning, field work, independent assignments, mentoring work, individual and group projects) provide student-oriented teaching. Education of teachers focused on the development of their competences with the aim of successfully performing the above types of teaching is systematically conducted. Students are also encouraged to do scientific work and participate in the Faculty projects through which interactive and research learning are promoted. By conducting everything mentioned above, it is possible to achieve all the anticipated learning outcomes.

Recommendations: No recommendations

Quality grade: Fulfilled



3.3. The higher education institution has provided evidence that adequate support will be ensured for future students.

Analysis: The Mentor System through the study programme has been established, which provides support to students throughout the entire period of study with the aim of developing skills and competences and generally support in achieving academic goals. The working hours of the library, student services and consultation schedule are publicly available and are adapted to both full-time and part-time students. A Committee on International Cooperation and Mobility has been established to provide assistance to students interested in mobility. There is a career development office whose purpose is to counsel students for careers, connect current students with alumni and monitor the careers of former students of the Faculty. Since 2015, Career Day has been organized continuously in order to motivate students and give them the opportunity to get acquainted with potential future employers. At the University level, there are several locations where students can find free psychological support if they need it. Regulations have been adopted regarding the protection of students' rights.

Special attention is paid to students from vulnerable and underrepresented groups, and a Guide for Students with Disabilities and Other Health Disabilities has been developed and published on the website.

Recommendations: No recommendations

Quality grade: Fulfilled

3.4. Objective and consistent evaluation and assessment of student achievements are planned so as to ensure the achievement of all intended learning outcomes.

Analysis: The criteria and the methodology of assessment are aligned with the expected learning outcomes and teaching methods. The procedure for filing complaints on assessments is clearly defined, and standards ensuring objectivity and impartiality are described in official University documents. Objectivity and impartiality in the evaluation process are achieved through public records of implementation and the publication of the results of written and oral exams, while protecting students' personal data. A proposal for a form has been developed to achieve a clearer achievement of records of learning outcomes during various checks, which is planned to start being applied to all types of learning outcome checks for the proposed study programme.

Recommendations: No recommendations

Quality grade: Fulfilled



IV. Teaching resources and infrastructure

4.1. The higher education institution has ensured adequate teaching capacities to deliver the study programme and achieve the intended learning outcomes.

Analysis: A preliminary analysis of teachers' profiles summarized in Table 5. Teachers on the study programme, confirms the involvement of most teachers in scientific activities and technology transfer projects in the logistics area, with publications that rank from innovative solutions of the well-known “last mile problem” in the freight transport field to urban mobility for citizens.

Total annual teaching load of all teachers does not exceed 20% of the total annual standard teaching load, but it was identified that a smaller number of teachers exceed acceptable teaching hours.

Although the number of overloaded teachers is low, usually there is a negative impact on their scientific production, their engagement in projects and a potential negative effect on teaching tasks. In order to preserve the annual teaching load standards, it is recommended to redistribute lectures among teachers with available teaching capacity regarding profile and workload or recruit new teachers for some topics assigned to overloaded teachers.

During the visit to the Borongaj Science and Education Campus and the meeting with teachers, their scientific capacity was confirmed in some relevant fields of logistics, that are also supported by their experience acquired through industrial projects and their collaboration with relevant stakeholders of major logistic companies in Zagreb area.

According to Table 3. Ratio of teachers to students the student-to-teacher ratio is 10.5, well below the allowable limit of 30. It is worthwhile to note that the new *Logistics* undergraduate programme will substitute the current undergraduate “Intelligent Transportation System” so teaching capacity for former studies will be used in the new undergraduate programme. The increment on the number of students (full-time and part-time) in the new programme cannot cause an important negative impact on the student-to-teacher ratio particular to the *Logistics* studies. Furthermore, it can be confirmed that the Faculty of Transport and Traffic Sciences employs teachers that can be responsible for delivering courses above 50% of first year courses proposed in the *Logistics* programme. The Panel members confirm that the quantity of teachers and their profiles align with the requirements for executing the study programmes at the Faculty.

Recommendations:



The Panel recommends to the Faculty to redistribute lectures among other teachers with similar profile, or recruit new teachers.

Quality grade: Fulfilled

4.2. The qualifications and professional experience of external associates are appropriate for the delivery of the study programme and the achievement of the intended learning outcomes.

Analysis: The Panel members found during the visit and the meeting with external associates that they have a relevant work experience in the logistics field, but it is apparent that their contribution to the *Logistics* programme is mainly constrained to the assigned lectures, and they do not have an integrated vision of the full programme.

Their involvement of the following topics in the teaching activities is considered very positive, since they can provide students with realistic challenges on particular use cases: Logistics Information Systems, Intelligent Traffic Infrastructure, Business Analytics, Production Logistics, Integral and Intermodal Systems, Reliability and Maintenance of Technical Systems and Transport Logistics.

The Faculty of Transport and Traffic Sciences does not need to encourage the external associates to supervise final theses, because this has been a regular practice in previous collaborations.

On several occasions external associates stated that students have significant possibilities for practice at the premises of their contracted external partners, which is an important asset in the logistics field.

The Faculty regularly arranges educational sessions for external associates from industrial and business environments, focusing on the teaching process. These sessions cover topics such as ECTS, learning objectives, instructional techniques, and various processes and projects conducted within the Faculty.

Recommendations: No recommendations

Quality grade: Fulfilled

4.3. The premises, equipment and entire infrastructure (classrooms, laboratories, library, etc.) are appropriate for the delivery of the study programme and ensure the achievement of the intended learning outcomes.



Analysis:

A visit to Vukelićeva student services office, International cooperation and mobility office, offices and classrooms together with the visit to Borongaj campus facilities, such as the library, 3 different computer rooms, the student room, classrooms, the amphitheatres and two different labs, confirms that the overall space can be regarded as sufficient for teaching purposes.

Some computer rooms can be used by students with a permit of a professor when there are no lab exercises scheduled, while other computer rooms do not require any permit. Computers are updated to support new software releases, but it is recognized that most students prefer to use their own laptops. Students have access to wireless internet in all designated areas.

According to Table 6 Premises, the ratio of students to teaching space is 2.5 m² per student, which exceeds the minimum requirement of 1 m² for each student, ensuring ample space and equipment for the new *Logistics* programme. Consequently, it is evident that the conditions for conducting teaching, scientific, and professional activities have been met.

Recommendations: No recommendations

Quality grade: Fulfilled

4.4. The library premises and resources, as well as access to additional services ensure the availability of literature and library services for the delivery of the study programme.

Analysis: The Faculty of Transport and Traffic Sciences library works in compliance with the Standards for Higher Education Libraries, with a sufficient number of copies of principal textbooks.

Acquisition of bibliographic material for the *Logistics* programme will not be a problem, since the library has an appropriate budget to support the acquisition of new books. Furthermore, most teachers are authors of textbooks that are shared with students through Merlin platform, together with other supporting materials.

The library has 20 m² area of the reading room premises intended for use by library patrons where students and teachers can have access to computer resources. In addition to the printed books and journals, the library provides access to bibliographic material in digital format.



Recommendations: No recommendations

Quality grade: Fulfilled

4.5. The higher education institution ensures the availability of the necessary financial resources to organise the activities and provide a high quality of delivery of the proposed study programme.

Analysis: According to Table 8. Financial sustainability, the financial sustainability for 2025 can be confirmed.

An important source of incomes are the scientific and professional projects, which contributes to the acquisition of new software tools for the lab exercises in the new *Logistics* programme. Additionally, other regular income is generated from tuition fees and the budget from the ministry in proportion to the number of students.

Recommendations: No recommendations

Quality grade: Fulfilled



AMEND THE STUDY PROGRAMME

Rationale:

OPINION OF THE EXPERT PANEL AFTER PROGRAMME AMENDMENTS

The Panel experts positively assess the undergraduate study programme in *Logistics*. The undergraduate study programme in *Logistics* prioritizes technological advancements and profession-specific subjects.

The study programme outcomes align with labour market demands. Some aspects to highlight that are properly considered in the study programme are:

- Trade-off among competing KPI's competences is a complex problem that arise in most logistic problems. The compulsory course on "Operational Research" is an excellent option to provide a solid education and a better integration of learning outcomes: LO1, LO5, LO7, LO12 and LO16.
- Course learning outcomes are well aligned with intended Logistics programme learning outcomes.
- Prerequisites for each course aid students in making informed decisions about enrolment and follow-up the courses.
- Estimated student workload is well aligned with course content and ECTS assigned.

The Panel members agreed to launch the Logistics programme, suggesting also that study programme should be continuously monitored and in future improved in the field of the holistic vision of students on the different components, actors and its interdependencies that plays an important role in the Supply Chain systems. Earlier mention also implies on aspects such as basis on Industry 4.0, Lean Manufacturing, Discrete Event Models, AI for decision-making in Logistics, Risk Models and transport of perishable goods and frozen products.



FINAL RECOMMENDATION OF THE EXPERT PANEL MEMBERS:

a. ☒ **ISSUE A LICENSE, rationale**

b. ☐ **DENY THE REQUEST FOR ISSUING A LICENSE, rationale:**



ANNEXES

1. Quality grade summary - tables

<i>Quality grade by assessment area</i>			
<i>Assessment area</i>	Not fulfilled	Partially fulfilled	Fulfilled
<i>I. Internal Quality Assurance</i>			X
<i>II. Study programme</i>			X
<i>III. Teaching process and student support</i>			X
<i>IV. Teaching resources and infrastructure</i>			X



<i>Quality grade by standard</i>			
<i>I. Internal Quality Assurance</i>	Not fulfilled	Partially fulfilled	Fulfilled
1.1. Clear justification for the introduction of the new study programme has been provided with regard to the mission and strategic goals of the higher education institution, as well as economic and societal needs.			X
1.2. The study programme has undergone an appropriate internal quality assurance process and has been formally approved by the higher education institution.			X
1.3. The higher education institution will collect, analyse and use relevant data for the effective management and continuous enhancement of the study programme in accordance with the published quality assurance policy.			X
1.4. The higher education institution informs the public about the study programmes it offers, as well as plans to launch new programmes, i.e. changes made to existing ones.			X



<i>Quality grade by standard</i>			
<i>II. Study programme</i>	Not fulfilled	Partially fulfilled	Fulfilled
2.1. The proposed study programme is compatible with the qualification standard in the Croatian Qualifications Framework Register.			
2.2. The intended learning outcomes at the level of the study programme are aligned with the competences a student should gain by completing the study programme, as well as with the CroQF and EQF level.			X
2.3. The intended course outcomes are aligned with the intended learning outcomes at the level of the study programme.			X
2.4. The study programme content allows students to achieve all the intended learning outcomes.			X
2.5. ECTS distribution is aligned with the anticipated actual student workload.			X
2.6. Student/professional practice is an integral part of the study programme (if applicable).			X
2.7. If the completion of the study programme allows students access to a regulated profession, the programme is aligned with national and European regulations and the recommendations of national and international professional associations.			



<i>Quality grade by standard</i>			
<i>III. Teaching process and student support</i>	Not fulfilled	Partially fulfilled	Fulfilled
3.1. Admission requirements and criteria as well as the admissions procedure are clearly defined and transparent, and guarantee that students will possess the necessary prior knowledge.			X
3.2. The planned teaching methods guarantee student-centred teaching and the achievement of all intended learning outcomes.			X
3.3. The higher education institution has provided evidence that adequate support will be ensured for future students.			X
3.4. Objective and consistent evaluation and assessment of student achievements are planned so as to ensure the achievement of all intended learning outcomes.			X



<i>Quality grade by standard</i>			
<i>IV. Teaching resources and infrastructure</i>	Not fulfilled	Partially fulfilled	Fulfilled
4.1. The higher education institution has ensured adequate teaching capacities to deliver the study programme and achieve the intended learning outcomes.			X
4.2. The qualifications and professional experience of external associates are appropriate for the delivery of the study programme and the achievement of the intended learning outcomes.			X
4.3. The premises, equipment and entire infrastructure (classrooms, laboratories, library, etc.) are appropriate for the delivery of the study programme and ensure the achievement of the intended learning outcomes.			X
4.4. The library premises and resources, as well as access to additional services ensure the availability of literature and library services for the delivery of the study programme.			X
4.5. The higher education institution ensures the availability of the necessary financial resources to organise the activities and provide a high quality of delivery of the proposed study programme.			X



2. Site-visit Protocol

	Četvrtak , 25. travnja 2024.	Thursday 25 th April 2024
9:00 – 9:30	Sastanak s Upravom visokog učilišta	Meeting with the Management of HEI
9:30 – 10:15	Sastanak s voditeljem studijskog programa	Meeting with the head of the study programme
10:15 – 10:30	<i>Pauza i interni sastanak članova Stručnog povjerenstva</i>	<i>Break and internal meeting of the panel members</i>
10:30 – 11:15	Sastanak s nastavnicima koji će biti angažirani na studijskom programu (u stalnom radnom odnosu – bez prisustva uprave)	Meeting with teachers (full time employed – without management of HEI)
11:15 – 11:20	Pauza	Break
11:20 – 12:00	Sastanak s vanjskim suradnicima koji će biti angažirani na studijskom programu	Meeting with external associates
12:00 – 13:30	Obilazak visokog učilišta (knjižnica, nastavni kabineti, laboratoriji, informatičke učionice, ured za studente, predavaonice)	Tour of the HEI (library, teaching offices, laboratories, computer classrooms, office for students, classrooms)
13:30 – 15:00	Radni ručak Stručnog povjerenstva	Working lunch
15:00 – 15:45	Sastanak s vanjskim dionicima (predstavnicima strukovnih i profesionalnih udruženja,	Meeting with external stakeholders (representatives of professional organisations, business sector/industry)



	Četvrtak , 25. travnja 2024.	Thursday 25 th April 2024
	<i>poslovna zajednica, poslodavci, stručnjaci iz prakse, organizacijama civilnog društva)</i>	<i>sector, professional experts, non- governmental organisations, external lecturers)</i>
15:45 – 16:15	<i>Organizacija dodatnog sastanka o otvorenim pitanjima, prema potrebi</i>	<i>Organisation of additional meeting on open questions, if needed</i>
16:15 – 16:45	Interni sastanak članova Stručnog povjerenstva (priprema za završni sastanak)	Internal meeting of the panel members (preparation for the exit meeting)
16:45 – 17:00	Završni sastanak s upravom	Exit meeting with the Management of HEI