REPORT
OF THE EXPERT PANEL
IN THE PROCEDURE OF INITIAL ACCREDITATION OF THE UNIVERSITY GRADUATE STUDY PROGRAMME MECHATRONICS AND ROBOTICS, UNIVERSITY OF RIJEKA FACULTY OF ENGINEERING

Date of accreditation:
28 May 2025

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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 procedure of initial accreditation of study programmes 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 initial accreditation procedure of the university graduate study programme Mechatronics and Robotics, University of Rijeka, Faculty of Engineering.

Members of the Expert Panel (in the same order as in the Decision to appoint the expert panel):

- Assoc. prof. Šandor Ileš, PhD, University of Zagreb, Faculty of Electrical Engineering and Computing, Republic of Croatia,
- Prof. Faouzi Derbel, PhD, Leipzig University of Applied Sciences, Republic of Germany,
- Prof. Bernhard Jakoby, PhD, Johannes Kepler University Linz, Republic of Austria,
- Asst. prof. Douwe Dresscher, PhD, Faculty of Electrical Engineering, Mathematics & Computer Science, University of Twente, Kingdom of Netherlands, Expert Panel Chair,
- Bruno Petrić, 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,
- Industry representatives, potential employers.

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

The Expert Panel drafted this Report on the initial accreditation of the university graduate study programme Mechatronics and Robotics, University of Rijeka, Faculty of Engineering based on the Proposal of the university graduate study programme Mechatronics and Robotics, University of Rijeka, Faculty of Engineering, other relevant documents, and the site visit.

The Report contains the following elements:

- Basic information about 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 the meetings held at the higher education institution, University of Rijeka, Faculty of Engineering, and writing of the Report, the Expert Panel was supported by:

- Matan Čulo, coordinator, ASHE,
- Jelena Pataki Šumiga, translator of the report.

BASIC INFORMATION ABOUT THE STUDY PROGRAMME

Name, seat and PIN (Personal Identification Number) of higher education institution: University of Rijeka, Faculty of Engineering, PIN: 46319717480

Title and type of study programme: University Graduate Study Programme in Mechatronics and Robotics

CroQF/EQF/QF-EHEA level: CroQF: 7.1.sv / EQF: 7 / QF-EHEA: 2

Scientific or artistic area and field of study programme: Technical sciences, field: Interdisciplinary technical sciences

ISCED FoET classification: Engineering and technology

Programme duration: 2 years

Number of ECTS credits acquired on completion of study programme: min. 120

Academic or professional degree/qualification obtained upon the completion of the study programme (if the study programme has several specialisations, the issued degree/qualification cannot be named according to the specialisation, but at the level of the study programme): University master of science in mechatronics and robotics (univ. mag. ing. mech.)

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): University of Rijeka, Faculty of Engineering

Method of delivery of the study programme: in-person

Admissions quota (for full-time and part-time students): 50 + 10

Academic year in which the study programme delivery is to commence: 2025/2026

In case of joint programmes delivered by Croatian higher education institutions, please include a list of co-providers/partners: /

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:

Based on the documents provided prior to the site visit and the explanations given during the visit, it is clear to the Panel that the proposed study programme is in line with both the mission and vision of the HEI as well as with labour market needs.

Evidence was provided that the minimal institutional requirements are met and are comparable to those in similar study programmes in both Croatia and the EU. Several examples are:

- General development strategies, both the University and the Faculty standards are outlined in publicly accessible documents.
- Assessment standards and regulations are defined and published at the University level.
- Student participation is an integral part of the quality assurance process on various levels, for example, through surveys.
- Labour market representatives are closely involved in the study programme on various levels.
- There is a system in place for collecting, managing, and processing statistical data related to the organisation and study programmes.
- Standards and regulations for periodic assessments and quality assurance are defined and published for both the University and the Faculty.
- Functional procedures are in place to protect students' rights, and a University Counselling Centre has been established for this purpose, offering psychological and legal counselling, among others.

The Croatian Employment Service has submitted a positive opinion on the compatibility of the proposed study programme with the labour market.

The HEI has stated the aim to provide a modern study programme for students in the region, considering the dwindling student numbers in other study programmes at the Faculty. As such, the introduction of the new study programme is a clear strategic move that supports the long-term sustainability of the HEI. In addition, it is clear that local industrial partners are eager to hire Faculty graduates. Moreover, during the site visit, several industrial partners expressed a clear need for graduates with a multidisciplinary background, to be ensured by the proposed study programme.

Recommendations:

- During the site visit, the Panel noted that industrial partners are clearly looking for specific skill sets such as systems engineering, leadership of multidisciplinary teams, and project management. The HEI can further strengthen its position by embedding the development of these skills more strongly in its curricula.

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 HEI has an extensive quality assurance policy. It encompasses all aspects of education and relevant aspects of research regarding university study programmes on its website and is publicly available. During the site visit, it was clear that quality assurance is an integral part of the mindset at all levels of the HEI, from the Management to the teaching staff, and that external stakeholders are involved in the process on a regular basis.

Evidence was provided that the development of the new study programme went through multiple rounds of improvement, involving both internal and external stakeholders. Professors from universities around the world were explicitly included in the discussions, and their advice was implemented. Notably, several members of the Faculty's Economic Advisory Council have supported and contributed to developing the proposed study programme. Also, the Faculty's Quality Committee, which includes members of the Faculty Council, external stakeholders, and students, has reviewed all official documentation. The decision to introduce a new study programme, as opposed to changing an existing one, has been well justified.

Recommendations:

Based on the discussions during the site visit, the Panel has two recommendations for the Faculty to further strengthen its internal quality assurance process:

- Establish a channel through which the student surveys results and the teaching staff's response can be shared with students. Clear feedback on how their input is used to improve the study programme will support student motivation to participate in the quality assurance process. During the discussion, teachers expressed their openness toward that possibility.
- Currently, teachers receive feedback on their teaching primarily from students. While mentioning that they share experiences and best practices informally among themselves, it would be beneficial to adopt explicit ways in which teachers could provide feedback on and inspire each other's teaching.

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:

Standards and procedures for management and continuous enhancement of the study programme follow those defined for both higher education and the Faculty. The quality assurance policy involves stakeholders, such as teachers and external partners. During the site visit, the stakeholders confirmed that they are indeed integral to the quality assurance processes.

Relevant key indicators and assessment tools, such as student surveys and pass rates for courses, are defined and employed to monitor the quality of the study programme, as well as metadata such as student enrolment, duration of the study, and employability. Target values and deadlines have been defined for the metadata key indicators.

Monitoring is used for the continuous improvement of the study programme. During the discussions, teachers explicitly expressed that the results of the regular measurements of quality are a valuable tool they use to adapt their teaching methods, as well as methods of student evaluation and examination.

Monitoring results are publicly available in part (See recommendations in standard 1.2.).

Recommendations:
None

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. changes made to existing ones.

Analysis:

Information about the study programmes the HEI offers (including learning outcomes, teaching and assessment methods) as well as about admission requirements and procedures is available on the HEI website in a well-organised and searchable way.

The Faculty of Engineering maintains an active collaboration with industry stakeholders through initiatives such as the Riteh Job Fair. This regular event serves as a bridge between students and potential employers, allowing students to gain insights into the job market and explore their career opportunities even before graduation. In addition to connecting students with companies, such events enable industry representatives to communicate their workforce needs, thus helping the Faculty align its educational offerings with labour market demands. Further information about past and upcoming events is available on the dedicated website: https://fest.riteh.hr/.

Recommendations:
None

Quality grade:
Fulfilled

II. Study programme

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

Analysis:

As there is no associated qualification standard in the Croatian Qualifications Framework Register, this is not applicable.

Recommendations:
N/A

Quality grade:
N/A

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:
According to the Self-Evaluation Report (SER), the report on the measures taken, and the meetings, the Panel believes that all formally required steps have been taken and fulfilled. In particular, there is evidence for the existence of an accredited undergraduate study programme in the same scientific field. Furthermore, next to profession–relevant skills, the currently defined learning outcomes (LOs) also include general skills, e.g. effective business communication and collaboration with multidisciplinary teams. Additionally, there is an evaluation of specialist knowledge and competencies, which reflects the labour market requirements. The learning outcomes related to lifelong learning indicate one's ability to continue their education and to adapt to evolving technological environments. Furthermore, learning outcomes on ethical responsibility reflect a commitment to meeting broader societal needs.

Also, the current LOs clearly differ from those in the associated undergraduate study programme. (The HEI has obtained an accreditation licence for the undergraduate study programme in Mechatronics and Robotics in 2024 (see the following link: https://riteh.uniri.hr/novosti/novi-prijediplomski-studij-mehatronike-i-robotike-na-tehnick/).

The defined LOs reflect a progression from those on the undergraduate programme. The latter focus on describing, evaluating, and applying fundamental and specialist

knowledge, while the graduate LOs emphasise critical assessment, independent research, and advanced algorithm development.

Although each of the defined learning outcomes at the level of the study programme is compatible with the general standards (both in Croatia and the EU) as well as with the achievement of necessary competencies, they seem partially generic and, depending on the interpretation, somewhat overlap. Also, during the meetings with the Head of the study programme and the teachers, the Panel noted that this made it hard to establish clear connections between the course-level LOs and programme-level LOs. As a result, the connection with the course LOs was found somewhat vague and partially inconsistent when analysing how the individual courses were mapped in the matrix in Table 2 (also, see below).

Recommendations:

- Redefine programme-level learning outcomes in a clear and more compact manner, which will largely facilitate alignment between course-level LOs and programme-level LOs in Table 2 (which should be revised as well).

Quality grade:

Partially fulfilled

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

Analysis:

The Self-Evaluation Report provides a description of course objectives, expected learning outcomes, and detailed course content that includes both general and profession-specific competencies. Course learning outcomes are specific, and their connection to the study programme learning outcomes is provided in Table 2. It shows that each outcome is covered by 7 to 25 courses; therefore, this requirement is formally fulfilled.

However, due to the generic and vague descriptions of the study programme LOs (see section 2.2. and the Panel's recommendation to reformulate the programme-level LOs), it is difficult to establish clear connections in certain cases. Moreover, in the discussions with the Head of the study programme and the teachers, the Panel noted that this has led to some ambiguity.

In certain cases, e.g. regarding the ethical LOs, connections can be expected but are not guaranteed. This especially refers to the final thesis, which, depending on the task and topic, could or could not relate to certain LOs.

Recommendations:

- As per the recommendation to reformulate the study programme LOs (see 2.2.), the connections must be re-established as well. In this process, the Panel suggests a central review to ensure a consistent interpretation (e.g., by the Head of the study programme).
- The Panel furthermore recommends allowing for the indication of potential connections by using a symbol "(+)" instead of "+" to reflect cases where the relationship is possible but not definitive.
- These revisions are straightforward, and the Panel sees no need to review this issue again.
  (Note: Formally, the standard is fulfilled, but in line with the recommended revisions in section 2.2., the connections in Table 2 have to be adapted, which, on its own, is only a minor revision.)

Quality grade:

Partially fulfilled

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

Analysis:

As far as this can be assessed, the study programme design is comparable to existing study programmes in the Republic of Croatia and EU countries, supporting both horizontal and vertical student mobility in the national and European Higher Education Area. Students who enrol in the study programme from undergraduate study programmes that are not directly related to this one can compensate for the difference in their competency profile by choosing appropriate elective courses. Since most courses do not have prerequisites, there are no major obstacles in tailoring individual study profiles for students. The defined micro-qualifications (these are not mandatory) further help all students to organise their individual elective course profile.

Since the field of mechatronics is quite broad, the definition of "core competencies" leaves room for interpretation. During discussions, the Panel questioned certain decisions regarding the selection of compulsory courses – particularly the inclusion of *Stochastic*

Mathematics and *Applied Pneumatics and Hydraulics* – as core disciplines. One of the key arguments given by the Head of the programme was that this selection aimed to align competencies with the HEI's teaching and research focus, which is justified in the context of establishing a sustainable study programme.

The next point is related to section 3.4., but since the Panel considers assessment to be an important method for the achievement of learning outcomes, it is also mentioned here.

The documents suggested that in certain core courses, no written or oral exams were specified as assessment methods, and that mere class participation was listed as part of the assessment process. During the discussion, it became clear that due to the structure of the form, some teachers misinterpreted or forgot to include exams in section 1.8, related to the assessment. It was also clarified that class participation is only a minor part of the assessment in the laboratory parts of the courses, which is logical. However, all teachers and the Head of the study programme confirmed the use of an oral and/or written exam in every course, typically related to the lecture part of the course.

Recommendations:

- Although the Panel's concerns regarding the assessment method were eliminated during the meetings, the forms need to be completed/revised accordingly. Furthermore, the Panel would like to suggest clarifying which type of assessment is used for what teaching method, but is leaving this to the Faculty to decide.
- The Panel is of the opinion that the inclusion of more electronics courses in the future would benefit the curriculum, but leave the ultimate decision on this to the Faculty.

Quality grade:

Partially fulfilled

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

Analysis:

The proposed two-year study programme requires a minimum of 120 ECTS credits for completion. These credits are allocated to each study programme component based on the actual student workload and in line with the principles of the European Higher Education Area. The *ECTS Users' Guide*, published by the European Commission and the Ministry of Science and Education, was used as a reference for defining learning outcomes and allocating credits.

Courses are organised in modules, all featuring the same ECTS workload, which facilitates the design of a curriculum. It was not transparent how these ECTS are distributed between practical vs. lecture course content, or how different contact hours were evaluated. Hence, this was discussed with the teachers and the Head of the study programme. The Panel is satisfied that instructors make a conscious effort to balance the workload across different types of teaching activities. This is supported by assigning a single responsible teacher (or, in some cases, two). Any potential discrepancies are addressed through the ECTS monitoring process described during the evaluation.

Recommendations:
None

Quality grade:
Fulfilled

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

Analysis:

The Self-Evaluation Report (SER) indicates that professional practice is an integral component of all study programmes delivered by the Faculty of Engineering in Rijeka. This was confirmed during the meetings with the teaching staff and external stakeholders. The practice is conducted outside the HEI in collaboration with the industry representatives. It is a compulsory course, carrying 8 ECTS credits, which equates to 240 working hours and is an appropriate allocation. To ensure that professional practice is implemented systematically and responsibly, each study programme appoints a dedicated Head of Professional Practice, who is responsible for overseeing the achievement of intended learning outcomes. The acquisition of practical skills and experiential learning is carefully planned and structured. This structured approach to professional practice aligns with broader trends in higher education, where internships, though not universally standard, are increasingly recognised as valuable components of academic programmes.

Recommendations:
None

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:

The proposed profession is not listed in the database of regulated professions in Croatia, so this issue is formally not applicable. In any case, the curriculum conforms to common engineering curricula.

Recommendations:

N/A

Quality grade:

N/A

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:

The admission criteria and procedures are clearly defined by the *Regulations on Studies and Studying at the University of Rijeka* and are publicly available. The criteria ensure that candidates have the required prior knowledge aligned with the study programme and that admission is carried out through a transparent and competitive selection process.

Procedures for recognition of prior learning are in place and managed by the Committee for the Recognition and Evaluation of Prior Learning, which issues formal decisions on admission for transfer students in accordance with the *Regulations on the Recognition and Evaluation of Prior Learning*.

The institution has specified the type of evidence required in the admission process, such as previously obtained ECTS credits and grade point average.

Recommendations:
None

Quality grade:
Fulfilled

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

Analysis:

Teaching is closely tied to the study programmes and encourages active student participation. Classes are held in various formats: lectures, seminars, lab work, fieldwork, projects, and individual tasks with a strong focus on practical experience. Students often deal with real-life problems, sometimes in collaboration with companies.

Digital tools such as online platforms and materials (LMS, repositories, etc.) are used. The workload is distributed evenly throughout the semester, in line with the ECTS credit system.

In various courses, students can choose from several proposed topics and form groups to work together. This allows them to organise themselves and manage their workload more efficiently. The existing practice has received good feedback from students.

Furthermore, students are encouraged to participate in research and projects, as well as exchange programmes.

The Faculty collaborates with industry partners, and many students write their theses in collaboration with companies and external mentors, which makes their work more relevant and practical.

Under Article 19 of the *Regulations on Studies and Studying at the University of Rijeka*, additional support is available for athletes, artists, students with disabilities, and student parents. The Faculty may also extend support to other students facing difficult personal situations, including asylum seekers.

Recommendations:
None

Quality grade:
Fulfilled

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

Analysis:

The Faculty ensures that future and current students have access to support throughout their studies. All key information, such as study programme structure, student rights, and available services, is available online and included in the student information package.

Academic and administrative support is available from the very beginning, including help with course selection, study tracking through the ISVU system, and consultation with study programme coordinators. Students can also contact teaching staff via email or the Merlin platform, and in-person office hours are regularly scheduled and clearly communicated.

There is dedicated support for students with disabilities, as well as psychological, legal, academic, and career counselling services, which are coordinated by the University Counselling Centre. Also, students have access to a student ombudsperson for help with their rights and complaints.

To support learning, students are provided with access to libraries, labs, computer rooms, and other key resources. Services are delivered by qualified staff with clearly defined roles, ensuring that support is consistent and easy to access.

Recommendations:
None

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:

At the beginning of each course, students receive all key information: the number of ECTS credits allocated to the course, topics to be covered, expectations for their performance, and grading criteria.

Grading methods are aligned with the learning objectives of each course and are used consistently. There is flexibility when needed, and students with disabilities can obtain certain adjustments, as outlined in the *Regulations on Studies and Studying at the University of Rijeka*. These can include modifications in how exams are taken or other forms of support to ensure fairness for every student.

While reviewing the documents, the Panel noticed a few minor mistakes in some course descriptions, such as unclear explanations of content descriptions or grading methods. The discussion confirmed that the assessment itself is fair and well-balanced, so there is no formal concern. Still, it is recommended that the Faculty revise and clarify those sections (see also the recommendation in standard 2.4.).

Recommendations:

- Revise and correct course descriptions.

Quality grade:

Partially 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:

As of 9 November 2024, the Faculty of Engineering in Rijeka employs 207 staff members, comprising 203 full-time and 4 part-time employees. Among them, 86 hold research-teaching and teaching positions at various levels. Additionally, 109 members of teaching and associate staff have doctoral degrees. The Faculty also collaborates with 23 external associates.

According to Table 4 of the Request for the initial accreditation, the study programme includes a total of 63 contact hours of direct instruction. A total of 50 teachers and associates are involved in delivering these hours, with individual contributions ranging from 0.44% to 6.35% of the total programme contact hours.

According to Table 5 of the Request for Initial Accreditation, the total annual teaching load of all teachers does not exceed 20% of the total annual standard teaching load.

More than 50% of all direct teaching within the study programmes is delivered by full-time Faculty members.

The student-to-teacher ratio, based on the number of students enrolled and the number of full-time teachers or associate teachers, is 9:1, which is well below the maximum permissible ratio of 30:1.

Based on the Request for the initial accreditation and observations during the site visit, the Faculty members demonstrate a high level of qualification in both teaching and research.

Recommendations:

None

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 Faculty of Engineering in Rijeka collaborates with 23 external associates from other HEIs and industry. Selected for their expertise in specific fields, these associates contribute to various courses in the study programme with their valuable professional experience. Several of them are employed by other HEIs. The Faculty has confirmed that external associates always work under the supervision of a qualified teacher.

Currently, these external associates are involved in delivering courses within the university's undergraduate study programmes, demonstrating the availability of qualified teaching resources.

Five external associates are scheduled to be engaged in the study programmes. All five are affiliated with HEIs in Croatia, further confirming their high level of qualification and their suitability for supporting the delivery of the programmes and achieving the intended learning outcomes.

Recommendations:
None

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:

Based on the site visit and the Request for Initial Accreditation, the Faculty of Engineering in Rijeka has adequate premises, equipment, and overall infrastructure, including classrooms, laboratories, and a library, to support the effective delivery of the study programme and the achievement of the intended learning outcomes.

The laboratories visited during the evaluation, such as those dedicated to drone technology and the development and assembly of robots, offer an excellent environment for students to acquire practical, hands-on experience.

Furthermore, the Faculty's collaboration with industry partners in the equipping and operating of these laboratories provides a solid foundation for early student engagement in real-world applications of knowledge and skills.

According to the data presented in Table 6 and the SER, the Faculty has access to 11,922 m^2 of gross space, comprising 8,062 m^2 in the main building and 3,860 m^2 in the laboratory building. Of this, 1,338.25 m^2 is allocated to lecture halls and classrooms, 2,098.7 m^2 to teaching laboratories/practical classrooms, and 750 m^2 to research laboratories. The Faculty also provides 10 computer classrooms equipped with approximately 200 computers. With an average student population of 1,220.5, the infrastructure indicators – such as a ratio of 0.3 students per square meter and 6 students per computer – are considered adequate and meet the required standards.

Recommendations:
None

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 library and its facilities are generally equipped to support high-quality scientific research and teaching activities. According to the Request for the Initial Accreditation, the library encompasses 403 m^2 across two floors and includes a reading room, a computer room, and spaces for housing its collections. As of 2024, the collection consists of over 22,500 bound publications, 750 periodical titles, and approximately 1,700 non-book materials. Among these are 1,913 volumes of mandatory literature for Faculty courses. It also provides access to ICT resources. Furthermore, the library provides access to databases available to the Croatian academic and scientific community as well as to various open-access databases. The library meets the criteria outlined in the *Official Gazette* 81/22.

However, based on course descriptions, particularly concerning required readings and the number of copies available in relation to student enrolment, there appears to be a shortage or insufficient availability of some key materials.

The Faculty has acknowledged this issue and confirmed that additional literature will be provided. Furthermore, the Faculty actively encourages staff to develop their own

textbooks and teaching materials by offering incentives. Students also have access to the national library, where they can find appropriate academic resources.

Recommendations:

- Provide sufficient literature for students.
- Provide access to e-books.

Quality grade:

Partially fulfilled

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

Analysis:

The graduate study programme will be delivered almost entirely by its full-time research and teaching, as well as associate staff. This highly qualified team, covering all core areas of the interdisciplinary study programme, allows for its implementation without the need for substantial initial investment.

All the necessary technical requirements are already in place, including lecture halls, well-equipped laboratories, modern computer facilities, a library, and other essential resources. In addition, the Faculty collaborates with industry partners to ensure that the laboratories are appropriately equipped, providing significant added value for students.

Furthermore, according to Table 8 in the Request for the Initial Accreditation and the publicly accessible financial records, the Faculty of Engineering at the University of Rijeka demonstrates financial stability. According to the *Decision of the Ministry of Science and Education on the Financing of Public Higher Education Institutions in Croatia for the Academic Year 2024/25* (of 5 April 2024), the proposed study programme is expected to generate income through the "Teaching Activity Funding" category, based on student enrolment, amounting to 12,481.84 EUR per year of study. In addition, revenue from "Dedicated Tuition Income" for part-time students, categorised as Student Tuition Participation Costs, is estimated at 4,699.20 EUR per year of study. The estimated income is expected to be sufficient to cover the study programme's anticipated operational costs.

Recommendations:
None

Quality grade:
Fulfilled

☐ **AMEND THE STUDY PROGRAMME**

Rationale:

OPINION OF THE EXPERT PANEL AFTER PROGRAMME AMENDMENTS

FINAL RECOMMENDATION OF THE EXPERT PANEL MEMBERS:

a. ☒ **ISSUE A LICENSE, rationale:**

The Panel has conducted a thorough review of all submitted documentation, placing particular emphasis on the key document: *Initial Accreditation Procedure Application Form – Study Programme: University Graduate Study in Mechatronics and Robotics, University of Rijeka, Faculty of Engineering*. This central document offers a comprehensive and structured self-evaluation, addressing most aspects of the Quality Standards for Evaluation and is supported by a substantial amount of relevant data and evidence.

During the site visit and meetings with the Management, the Head of the study programme, academic staff involved in programme delivery, and external stakeholders, the Panel observed a high level of preparedness on the part of the Faculty of Engineering, University of Rijeka, for the launch of the Mechatronics and Robotics study programme. The University's efforts are further reinforced by strong local support from representatives of industry and other institutions, providing a solid foundation for the successful implementation of the proposed study programme.

The proposed study programme meets the majority of quality standards across all evaluation areas. In the few instances where standards were only partially met, the Panel identified only minor issues. These include suggestions, rather than requirements, to consider revising the study programme learning outcomes to reduce overlap, and to re-examine the alignment between course-level and programme-level learning outcomes. Additionally, minor adjustments to assessment methods and the availability of required literature prior to the study programme's commencement are recommended. These changes are intended to further enhance the study programme and are left to the Faculty's discretion.

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

ANNEXES

1. Quality grade summary – tables

Quality grade by assessment area			
Assessment area	Not fulfilled	Partially fulfilled	Fulfilled
I. Internal quality assurance			X
II. Study programme		X	
III. Teaching process and student support			X
IV. Teaching resources and infrastructure			X

Quality grade by standard			
I. Internal quality assurance	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 offer new programmes, i.e. changes made to existing ones.			X

Quality grade by standard			
II. Study programme	Not fulfilled	Partially fulfilled	Fulfilled
2.1. The proposed study programme is compatible with the qualification standard in the Croatian Qualifications Framework Register.	n/a		
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.	n/a		

Quality grade by standard			
III. Teaching process and student support	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	

Quality grade by standard			
IV. Teaching resources and infrastructure	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 quality delivery of the proposed study programme.			X

2. Site-Visit Protocol

PROTOKOL POSJETA / SITE VISIT PROTOCOL

Mjesto izvođenja studija: Rijeka / Place of study programme delivery: Rijeka
Adresa/Address: Vukovarska 58, 51000, Rijeka

	Srijeda 28. svibnja 2025.	Wednesday, 28 May 2025
09:00 – 09:30	Sastanak s upravom *(bez prezentacije)*	Meeting with the Management *(no presentation)*
09:40 – 10:40	Sastanak s voditeljem studijskog programa	Meeting with the Head of the of the study programme
10:40 – 11:00	*Pauza i interni sastanak članova Stručnog povjerenstva*	*Break and internal meeting of the panel members*
11:00 – 12:00	Sastanak s nastavnicima koji će biti angažirani na studijskom programu *(u stalnom radnom odnosu – nisu na rukovodećim mjestima)* i vanjskim nastavnicima	Meeting with teachers *(employed full-time – except those in managerial positions)* and external associates
12:00 – 13:15	Obilazak mjesta izvođenja studija *(knjižnica, nastavni laboratoriji/praktikumi/informatička učionica, ured za studente, predavaonice)*	Tour of the place of study programme delivery *(library, teaching laboratories/practical classrooms, computer classrooms, Office for students, classrooms)*
13:15 – 14:45	*Radni ručak Stručnog povjerenstva*	*Working lunch*
14:45 – 15:45	Sastanak s vanjskim dionicima – predstavnicima strukovnih i profesionalnih udruženja, poslovna zajednica, poslodavci, stručnjaci iz prakse, organizacijama civilnog društva	Meeting with external stakeholders – representatives of professional organisations, business sector/industry sector, professional experts, NGOs, external lecturers
15:45 – 16:15	Organizacija dodatnog sastanka o otvorenim pitanjima, prema potrebi	Organisation of an additional meeting on open questions, if needed
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