Josip Juraj Strossmayer University of Osijek
Faculty of Agrobiotechnical Sciences Osijek

Self-evaluation report

Faculty of Agrobiotechnical Sciences Osijek

2024

Osijek, 2024.

Name of evaluated higher education institution:	Faculty of Agrobiotechnical Sciences Osijek
Name of university of which evaluated higher education institution is constituent unit:	Josip Juraj Strossmayer University of Osijek
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Date of adoption of the Self-evaluation report:	27th September 2024
Period covered by the Self-evaluation report:	2018/2019 - 2022/2023

This Self-evaluation report reflects the efforts of the Committee for Self-evaluation and all individuals involved, and it has been compiled with the aim of improving the quality of work, educational processes, and research activities at our faculty during the relevant period.

I confirm that the content of this document accurately and precisely represents the current state and developmental guidelines of the institution.

Osijek, 27 September 2024

Prof. Dr. Krunoslav Zmaić

Dean

Self-evaluation report

Faculty of Agrobiotechnical Sciences Osijek

CONTENT

Introduction

Faculty of Agrobiotechnical Sciences Osijek (further in the text: the Faculty) is the oldest constituent of Josip Juraj Strossmayer University of Osijek, with the establishment of which back in 1960 the development of higher education in the field of biotechnical sciences started in eastern Croatia. That year marked the initiation of higher education delivery at the Higher Agricultural College in Osijek, which was a constituent part of the University of Zagreb. In 1970, the Higher Agricultural College changed its name to become the Faculty of Agriculture and Food Technology, and in 1975, it transferred to the University of Osijek as its constituent unit. In 1976, the Faculty changed its name again, and registered as the Faculty of Agriculture. This was followed by integration of the Faculty into the Biotechnical Science and Teaching Centre, which comprised other institutions, namely the Faculty of Food Technology, the Agricultural Institute, the Sugar Beet Institute and the Fruit Nursery Garden. In 1977, the Faculty integrated with the Higher Agricultural College in Vinkovci and reorganised its study programmes. The first postgraduate study in Plant Protection and Agricultural Products was organised by the Faculty in 1972.

In the period of 1977-1991, the Faculty of Agriculture in Osijek was operating in its new building on the Tenja Road, and this period marked a new phase in the Faculty's development. The Faculty had at its disposal more than 4,000 m^2 of new laboratory space, as well as classrooms and other premises, which significantly contributed to the improvement of study conditions and intensification of scientific and professional work. The period from 1991-1995 is remaining deeply embedded in the history of the Faculty’s development as the most difficult one, since the Faculty building was completely destroyed and devastated. During the Homeland War, as well as in the post-war years until 1995, the Faculty was operating at several locations scattered around the city of Osijek, and since 1995, it found its seat in the building of the former General Barracks at the address Trg Svetog Trojstva 3 in the Osijek Old Town. The process of Faculty's complete infrastructure reconstruction consisted of spatial organisation, equipping of lecture halls, laboratories, library, IT cabinets and other premises, both at the main Faculty building in the Osijek Old Town and in Vinkovci, where the Faculty was delivering its professional study programmes.

Until 2011, the Faculty performed its teaching and research activities in the above-mentioned building, and on 5 October 2011, it moved to a modern building located at the University campus, in Vladimir Prelog Street 1, where it is now operating. As of 23 July 2018, the Faculty of Agriculture changed its name to the Faculty of Agrobiotechnical Sciences Osijek. The new name of the Faculty is based on many activities realised in the field of Biotechnical sciences, having a dominant prefix put on the scientific area of agriculture and related branches. The Faculty also expanded its activities in the interdisciplinary field of science by cooperating with institutions in the fields of natural sciences, biomedicine and health, as well as social and technical sciences.

The change of Faculty’s name represents a new driving force for its intensive development and emphasises the importance of the agronomy profession for the society, thus confirming mission and vision as well as the role of the Faculty in the community. From the Faculty's establishment until today, significant progress has been made in equipping the laboratories with modern scientific equipment, without which it would not be possible to carry out scientific research activities and achieve exceptional progress in practice. The Faculty's name change was followed by the establishment of the Faculty's Experiment station for innovation and technology, the Central

Agrobiotechnical Analytical Unit (CAAU) and the Biotechnical Scientific Research Centre, that are pursuing new scientific technologies, patents and innovations to be transferred to industry.

All of the above-mentioned contributes to the profiling of the Faculty into a modern higher education institution that delivers quality education and modern scientific knowledge at all levels of university undergraduate, graduate and postgraduate studies.

In its new premises in Osijek, the Faculty spreads on 19,000 square metres of modern spaces that are adapted for scientific and teaching purposes and disposes of all infrastructure as of the highest European standards for higher education institutions. In the Faculty's main building in Osijek, there are 27 laboratories, 16 practice halls, 15 lecture halls, 3 great halls (one ceremonial hall), 123 teachers' offices, Dean's Office, meeting room, library, printing room, and premises used by joint services.

In addition, within its Experiment station for innovation and technology, the Faculty disposes of plots in Tenja, Antunovac and Mandićevac spreading on a total area of 96.75 ha, which is rented from the Republic of Croatia, and an own area of 3.67 ha in Mandićevac, with vineyards where several vine sorts are grown. In 2022, there has been an experiment station established in Bilje for the purpose of conducting research into beekeeping and biopolination.

Organisational structure of the Faculty is presented by Figure 1. The Faculty is managed by the Faculty Council and the Dean. In his work, the Dean is assisted by five vice-deans and the Faculty's academic secretary. At the Faculty, there are 6 departments with 30 chairs, and the Central Agrobiotechnical Analytical Unit with three sub-units, as well as the Experiment station for innovation and technology, and Central Administration.

Faculty departments are basic organisational units that coordinate teaching, scientific and professional activities in their particular science field or branch. Central Agrobiotechnical Analytical Unit (CAAU) participates in realisation of practical and laboratory teaching and performs analyses required within scientific and professional research.

Within CAAU, there are three sub-units: Sub-unit for determination of phenotypic and production characteristics, Sub-unit for quantitative analysis, and Sub-unit for precise instrumental analysis. Experiment station for innovation and technology is an organisational unit of the Faculty involved in realisation of the practical teaching and professional student practice, scientific research and professional work, thus providing support to Faculty's activities and international cooperation.

There are two centres at the Faculty: the Centre for Lifelong Learning and the Biotechnical Scientific Research Centre (BSRC). The Centre for Lifelong Learning delivers lifelong learning programmes that refer to training programmes offered on a market to a wide population for acquisition of micro-credentials. BSRC encourages and creates an entrepreneurial environment and provides specialised infrastructure for the transfer of knowledge and technologies to support establishing of student start-ups, research projects and a platform for sharing of knowledge, contacts and know-how necessary for successful business undertakings.

Successful functioning of the Faculty and administrative support to all organisational units is provided by the Faculty's Central Administration Office and its six units: Division for student and study support, Division for science and IT systems, Division for international projects and technology transfer, Division for human resources and public procurement, Division for financial affairs and investment management, and Division for infrastructure and safety of work and environment.

Figure 1. Organisational structure of the Faculty

At present, there are 234 employees working at the Faculty, of whom 40 are appointed to the scientific-teaching job position of full professor with tenure, 26 are full professors, 20 associate professors, 20 assistant professors, 9 senior assistants, 11 assistants, 2 lecturers and 2 senior lecturers, 11 professional advisors, 9 senior associates, 4 associates, 20 laboratory technicians and technical support staff, 56 administrative and maintenance support staff, and 4 project associates.

The Dean represents the Faculty, acts as its leader and has all rights and obligations as defined by the University Statute and the Article 34 of the Faculty Statute. The Dean is responsible for the legality, implementation of the Statute provisions and all decisions made by the Faculty bodies. The Dean is responsible to the Faculty Council and the Rector. At least once a year, the Dean is obliged to submit to the Faculty Council an annual report on the implementation of the Faculty's development strategy, a report on the realisation of Faculty's activities and on accomplishment of a part of tasks assumed from the programme contracts, as well as other reports, as defined by the Faculty Statute.

There are five vice-deans at the Faculty:

- vice-dean for Education and Quality Management,
- vice-dean for Science and Postgraduate Studies,
- vice-dean for International Cooperation and Study Programs in the English language,
- vice-dean for Experimental Station Development and Technology Transfer,
- vice-dean for Business Organization and Investment Management.

Professional collegium is an advisory and expert body of the Dean, which consists of vice-deans, heads of departments, head of the Central Agrobiotechnical Analytical Unit, heads of centres, Faculty academic secretary, one head of an office in the Central Administration, and head of the Experiment station for innovation and technology.

The Faculty Council is composed of the following members: dean and vice-deans, representatives of teachers appointed to scientific-teaching positions, representative of teachers appointed to teaching positions, representatives of associates appointed to associate positions, representative of other employees, and representatives of students, who make up 10% of all Faculty Council members, of whom a maximum of 20% are postgraduate students. Faculty academic secretary and a representative of a major union of science and higher education workers active at the Faculty, who is an employee of the Faculty, are also members of the Faculty Council, but without the right to vote.

The Faculty Council usually assemblies once a month and all sessions are chaired by the Dean.

Within the Faculty Council, there are the following permanent boards and committees:

- Board for science
- Board for bachelor and master theses
- Board for publishing activities
- Committee for teaching
- Committee for the Obtainment of a Doctoral Degree in Science Committee for postgraduate specialist studies
- Committee for quality assurance
- General Acts Committee
- Committee for development and organisation of experimental stations
- Committee for business, development and investments
- Committee for Ethical Issues

Apart of the permanent boards and committees, there are also non-permanent committees active at the Faculty: Academic faculty and staff awards committee, Committee for recognition of student mobility programmes, Committee for Faculty promotion, Committee for cooperation with the economy sector and innovations, Scientific forum committee, Animal ethics committee, Advisory board for international issues, Programme council of the Centre for Lifelong Learning, and the Disciplinary committee.

The stated Faculty management structure ensures that students and employees participate in the decision-making processes. Students are also members in most of the Faculty boards and committees. Students are also represented by the student ombudsman at the University level. Students are active also through the Student Union and the Alumni Association.

In accordance with its Development Strategy and recommendations obtained from previously completed re-accreditation procedures, the Faculty is in the process of significant structural changes. There were three external quality evaluations carried out at the Faculty by the Agency for Science and Higher Education (ASHE), i.e. two procedures of re-accreditation of the Faculty and one procedure of the doctoral study programme evaluation. Based on the Final Report of the Faculty evaluation completed in April 2013, the Expert Panel appointed by the Agency for Science and Higher Education rated the Faculty with high grades. The Expert Panel pointed out the possibilities for improvement and gave recommendations for quality improvements, which were implemented in previous years. Based on the Expert Panel recommendations, there was the

Faculty's Action Plan devised for the period 2014-2018, as well as the Strategic programme for scientific research 2014-2018, both of which are almost completely realised. On the basis of the ASHE accreditation recommendation issued on 1 October 2013, the Ministry of Science, Education and Sports of the Republic of Croatia issued on 5 June 2014 a confirmation for the Faculty stating that it fulfilled the requirements for performance of activities in higher education and science.

In the academic year 2016/2017, i.e. in June 2016, ASHE carried out the re-accreditation procedure of the Doctoral study programme in Agricultural Sciences. The Expert Panel visited the Faculty and prepared a Report on the implemented evaluation procedure, based on which ASHE issued on 3 February 2017 an accreditation recommendation for issuing a certificate on fulfilment of conditions for performing part of the Faculty's activities, which refers to the delivery of the Doctoral study programme in Agricultural Sciences. Furthermore, an Action Plan was prepared by the Faculty to plan the improvement of the Doctoral study programme quality, on the basis of which the Ministry of Science and Education issued a Certificate on fulfilment of conditions for performance of one part of the Faculty's activities related to the delivery of the Doctoral study programme in Agricultural Sciences (on 21 March 2017). Action Plan for improvement of quality of the Doctoral study programme in Agricultural Sciences for the period of 2017/2018-2021/2022 was following the recommendations of the re-accreditation procedure, and prepared reports on the realisation of the Action Plan confirm the fulfilment of all tasks (1st, 2nd and 3rd Report on the implementation Action Plan).

The next cycle of re-accreditation was scheduled for the Faculty by ASHE in 2019. The Expert Panel visited the Faculty from 26-29 November 2019 and prepared a Final Report on the re-accreditation process. Based on the Expert Panel's Report, and following the obtained recommendations, the Faculty prepared the Action Plan 2020-2025, which is now almost accomplished, along with the Strategic programme for scientific research 2019-2023. According to the evaluation of five areas (Internal quality assurance and the social role of the higher education institution; Study programmes; Teaching process and student support; Teaching and institutional capacities; and Scientific/artistic activity), the Faculty achieved a satisfactory level of quality. As of the Accreditation Recommendation issued by ASHE (CLASS: 602-04/18-04/0043, FILE No.: 355-02-04-20-0010) on 13 May 2020, Ministry of Science and Education of the Republic of Croatia issued a confirmation on 22 May 2020 to the Faculty confirming that it fulfilled all conditions for performance of higher education and scientific activities. All realised improvement tasks are elaborated in the first Report on the realisation of the Action Plan. The implementation of the Action Plan is still ongoing and will end in December 2024, when the final Report on the Action Plan realisation will be prepared and submitted to ASHE for evaluation.

All previous evaluations of the Faculty carried out by ASHE within two re-accreditation processes and one evaluation procedure of the Doctoral study programme have contributed to improvement of the quality assurance system, to the strengthening of scientific and research work and its interaction with the teaching process, to introduction of new study programmes and their positioning in national and European frameworks, and to strengthening of internationalisation.

Being aligned with the Bologna Declaration principles and the European Credit Transfer System (ECTS), the Faculty delivers the University undergraduate study programme in Agriculture (with five majors), 8 university graduate study programmes (with a total of nine majors), one Doctoral study programme in Agricultural Sciences (with eight majors) and 5 university specialist study programmes. The Faculty is systematically improving its educational, scientific and research processes by adhering to its ethical principles and by applying a well-defined system of values. Special emphasis is put on the development and improvement of study programmes with clearly defined learning outcomes and devising of new study programmes to develop student

competencies that are in demand on the labour market. The process of devising six new undergraduate study programmes and six new graduate study programmes is ongoing. Upon initialising delivery of new study programmes, the existing university undergraduate and graduate study programmes will be cancelled. With the aim to contribute to the improvement of quality and relevance through internationalisation and integration into the European higher education area, the Faculty started to carry out the University graduate study programme in Digital Agriculture taught in English language. It is a joint study programme developed in cooperation with the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek (FERIT). The interest in this study programme is great, since there is no similar study programme offered by other HEIs in the region.

The Faculty is involved in the process of creating a knowledge society by developing skills and competencies within the framework of lifelong learning programmes, thus contributing to strengthening of personal, social or professional skills of an individual and of society in general. Lifelong learning programmes at the Faculty meet current economic and social needs and ensure the acquisition of green skills. The Faculty has positioned itself as one of the leading teaching and research institutions in the region, given its long tradition in higher education and the systematic implementation of a development strategy based on excellence in teaching, research and professional work.

In addition to the teaching activity, attention is paid to the scientific research activity, which is aimed at realisation of projects and popularisation of science. The Faculty joined the European research area through scientific centres of excellence, within which scientists, together with the economy sector and public entities, systematically conduct research into topics of importance for scientific community and society. In order to encourage participation in EU-funded research programmes and other international programmes and to ensure international visibility and recognition, the Faculty established 17 research teams that were active from 2019 to 2023, and from September 2023, it widened the teams to 19 of them. As a result, in the period 2019-2023, research teams implemented many projects and cooperation with the economy sector (342), of which 289 projects are domestic and 53 are international. The implementation of the mentioned projects and cooperation resulted in the scientific production of 1,094 scientific and professional papers published in journals. The majority of scientific papers (505) were published in journals indexed in the citation database Web of Science – WoS, 360 scientific and professional papers were published in conference proceedings, and 28 papers were additionally indexed in the Scopus database. Furthermore, 92 scientific and professional papers were published in journals indexed in the CAB Abstract database and 136 papers were published in symposium proceedings.

Bearing in mind the importance of creating, disseminating, sharing and using knowledge derived from research, the exchange of teachers, scientists and students with foreign institutions enables transformation towards greater innovativeness and diversity, and boosts participation in bilateral and multilateral research programmes. Over the past five years, the Faculty has made significant progress in its international cooperation by harmonising its activities with national and European strategic documents, such as the Education, Science and Technology Strategy of the Republic of Croatia, the European Strategic Agenda and the New European Innovation Agenda. The Faculty increased student and staff mobility through the Erasmus+ and CEEPUS programmes, which, along with a growing number of international projects and cooperation, confirm its global visibility.

Efforts are also invested into preparing students for the global labour market by promoting European and global values and establishing partnerships with companies from the higher education ecosystem. International cooperation is coordinated by the vice-dean for International Cooperation and Study Programs in the English language, and the Office for international

cooperation and projects, which provide support during all phases of preparation and implementation of projects, international activities and academic mobility. Information about opportunities for studying abroad is distributed through various communication channels, and particular efforts are invested into attracting international students to the Faculty. Thanks to such support, the Faculty manages to constantly increase the outgoing and incoming mobility of students, and to successfully overcome the challenges caused by the COVID-19 pandemic.

The Faculty implements a quality assurance policy aiming to promote excellence of educational and scientific research work and to ensure international recognition. Through the quality assurance system, the educational process is constantly improved to enable faster and more efficient planning, realising, monitoring, analysis and ultimately improvement of the Faculty activities. By following its quality assurance policy, the Faculty realises its Development Strategy and implements recommendations of ASHE. It also cooperates with the University of Osijek and the University Centre for Advancement of Quality Assurance in Higher Education to assure quality in all segments of its activities.

The Faculty Quality Assurance Office and the Committee for quality assurance are supporting training and development of teaching staff and other Faculty staff. They are also engaged in improving the teaching methods and in strengthening cooperation with the economy sector. They raise academic standards in providing quality support to students to ensure they acquire learning outcomes and develop careers. The implementation of measures of the entire quality assurance system resulted in better orientation on students in the teaching process, in better decision-making based on relevant evidence, as well as in involvement of all stakeholders in the process of constant system improvements. Constant monitoring of the QA system is enabled by carrying out internal and external assessments of the system through various questionnaires and surveys and other forms of checking the management of the quality assurance system. Results obtained through various questionnaires and surveys contribute to identification of opportunities for improvement of the QA system and its better efficiency.

The Faculty systematically applies measures for improvement of the quality assurance system through definition of principles, criteria and methods, which support excellence in higher education, scientific research, international cooperation, as well as in professional and administrative activities. Quality assurance system is based on clearly defined mission, vision and strategic goals of the Faculty.

Accordingly, within its mission and vision as well as the Strategy, the Faculty continuously works towards assurance of quality and promotion of a culture of excellence in education and scientific-research activities, thereby strengthening its international recognition, meeting high standards of all stakeholders in higher education and science, and catering for the needs of society in general.

I. Higher education institution management and quality assurance

1.1. The mission of a higher education institution guides the process of operational planning and the development of quality assurance processes.

Faculty of Agrobiotechnical Sciences Osijek (further in the text: the Faculty) recognises education, science, and innovation as its development priorities, and highlights them as the only ones that can ensure long-term social stability in a globalised world of dynamic societal, economic and cultural changes and contribute to the Faculty prosperity in the long run. This is also supported by the fact that the Faculty realises significant success in the education of students and professional staff, as well as in the implementation of scientific and professional projects, and in cooperation with the economy sector.

The Faculty determined its Strategic objectives of the Faculty development 2011/2012-2015/2016 and its Development Strategy of the Faculty of Agrobiotechnical Sciences Osijek 2018/2019-2022/2023. In the process of realisation of the mentioned strategic documents, the Faculty follows the set tasks that are comprising defined areas of activity: organisation and quality of work, teaching activity and students, scientific and research activity, international cooperation and cooperation with the economy sector, as well as knowledge and technology transfer. The Faculty Development Strategy also contains an action plan that lists tasks and activities, efficiency indicators, responsible persons for task completion and the deadline for implementation, which is aligned with the University Development Strategy. Revision of strategic objectives is regularly carried out and published on the Faculty website.

At the 11th regular session of the Faculty Council held in July 2011, there were Strategic objectives of the Faculty development adopted for the period of 2011/2012-2015/2016. Strategic objective 5 refers to the development of a quality assurance system management, which is applied in all segments of Faculty activities. As of the Dean's decision reached in May 2012, the Committee for quality assurance is established to become the first body officially responsible for the establishment and development of the quality assurance system. In accordance with the Faculty's strategic commitment, the Faculty Council adopted the Quality assurance policy at its regular session in April 2017. The objectives of the Quality assurance policy are continuously monitored, analysed and revised by all stakeholders through adopted methodologies and procedures. The Strategy on quality assurance system has been adopted in 2017.

The Faculty mission is to develop, sustain and advance dynamic and multidisciplinary teaching and research environments in which it will efficiently use research potentials, advance existing and acquire new knowledge. Such an environment facilitates an excellent transfer of the latest knowledge and skills to students and allows them to profile themselves as leading experts in the field of agronomy and agrobiotechnology who will apply the latest scientific knowledge in practice. With its research environment, education of experts in agronomy and with continuous

development of knowledge and skills for lifelong education, the Faculty serves its social community and contributes to the development of society in general.

Currently in implementation, the Development Strategy of the Faculty of Agrobiotechnical Sciences Osijek 2023/2024-2027/2028 is adopted at the 9th regular session of the Faculty Council held in July 2024. The Strategy is divided into several sections: organisational structure of the Faculty, SWOT analysis, strategic objectives of the Faculty's development, as well as the mission and vision of the Faculty. The mission defined in the Strategy clearly defines the specific role of the higher education institution in delivery of higher education and scientific and professional activities, and contributes to the development of contemporary society. The mission positions the higher education institution in the national and international context, and directs the development of study programmes and other educational programmes and activities. The mission of the Faculty is the starting point for the process of strategic planning and for determination of strategic objectives.

The Faculty has announced its mission, which, along with defined values and objectives, represents the framework and direction of activities. Representatives of various stakeholder groups participated in the development and definition of the mission and vision of the Faculty. All Faculty Council members, all employees of the Faculty Departments and of CAAU have been invited to give their comments and suggestions, thus contributing to the quality of the Faculty strategic orientation.

As a leading regional research and higher education institution in the field of biotechnical sciences with unique scientific research potential, the Faculty of Agrobiotechnical Sciences Osijek will develop an excellent and competent educational and scientific research profile that is recognised internationally. The Faculty shall continue to educate prominent, competitive experts to become widely recognisable in biotechnical and interdisciplinary scientific areas in which they will achieve excellence. It will actively participate in the European higher education and research area, aiming to become a biotechnical centre of excellence for the transfer of innovations, knowledge and technology into the economy.

Through its activities, the Faculty has positioned itself at the national and international level as a leading higher education institution in the field of agronomy. The prioritised activities refer to scientific research and teaching in strategic areas. In the scientific component, positioning in strategic areas is achieved by monitoring scientific productivity, encouraging open science policy and encouraging excellence. In accordance with the mission and vision of the Faculty, project activities are focused on strategic areas and competitive projects. Furthermore, incoming and outgoing mobility and networking with the aim of establishing new research consortia have been supported. The process of assuring the quality of scientific and teaching activities, which has been constantly raised over many years, is incorporated in all regular activities of the Faculty, as determined by the Quality assurance policy.

1.2. The higher education institution defined the internal organisational structure and processes that are managed responsibly, efficiently and effectively, and the higher education institution's stakeholders are included in the decision-making processes.

Management of the higher education institution is based on academic self-governance and the university autonomy. The organisation and management of the Faculty is based on the provisions of the Act on Higher Education and Scientific Activity, Act on Institutions (NN 76/1993, NN 29/1997, NN 47/1999, NN 35/2008, NN 127/2019, NN 151/2022,), Statute of Josip Juraj Strossmayer University of Osijek and the Statute of the Faculty of Agrobiotechnical Sciences Osijek.

The Faculty is a constituent unit of Josip Juraj Strossmayer University of Osijek. It retains a status of a legal entity in accordance with the Act on Higher Education and Scientific Activity and the Statute of the University. Josip Juraj Strossmayer University of Osijek has founding rights over the Faculty. The Faculty is registered in the Court Register and in the Register of Higher Education Institutions of the Ministry of Science, Education and Youth of the Republic of Croatia.

The Faculty is managed by the Faculty Council and the Dean.

Members of the Faculty Council are dean and five vice-deans, representatives of teachers appointed to scientific-teaching positions, one representative of teachers appointed to teaching positions, three representatives of associates appointed to associate positions, one representative of other employees, and representatives of students, who make up 10% of all Faculty Council members, of whom a maximum of 20% are postgraduate students. Faculty academic secretary and one representative of a major union of science and higher education workers active at the Faculty, who is an employee of the Faculty, are also members of the Faculty Council, but have no right to vote.

The Dean is the Faculty leader. The Dean represents the Faculty and assumes all responsibility for the legal actions, as defined by the University Statute and the Faculty Statute. In the work, the Dean is assisted by the vice-deans and the Faculty academic secretary. The Dean is responsible to the Faculty Council and the Rector. The Dean is obliged to submit to the Faculty Council an annual report on the implementation of the Faculty's development strategy, a report on the realisation of Faculty's activities and on accomplishment of a part of tasks assumed from the programme contract, as well as other reports, as defined by the Faculty Statute.

Efficient management as well as the decision-making process at the Faculty is facilitated by its organisational structure. Faculty departments are basic organisational units that coordinate teaching, scientific and professional activities. Faculty departments are further divided into chairs. Each department is managed by the head, and each chair has its president. Central Agrobiotechnical Analytical Unit (CAAU) is also an organisational unit of the Faculty. It consists of three sub-units managed by heads. The head of CAAU coordinates its work together with the vice-dean for business and investment management. The Experiment station for innovation and technology is also managed by the head. In addition, the Faculty has established two centres: Centre for Lifelong Learning and Biotechnical Scientific Research Centre, managed by the Programme council. For successful administrative functioning of all organisational units, there is the Central Administration Office and its six units: Division for student and study support, Division

for science and IT systems, Division for international projects and technology transfer, Division for human resources and public procurement, Division for financial affairs and investment management, Division for infrastructure and safety of work and environment.

Efficiency of coordination, monitoring and improving of all business activities undertaken by the Faculty is in charge of the Professional collegium, which is an advisory and expert body of the Dean, composed of vice-deans, heads of departments, head of CAAU, heads of centres, Faculty academic secretary, head of one unit in the Central Administration Office, and head of the Experiment station for innovation and technology. The management structure ensures that students and employees participate in the important decision-making process at the Faculty. Students are also members of Faculty committees.

The Faculty assures and improves its quality within the system of internal quality assurance, by applying provisions outlined in the following documents: Act on the Quality Assurance in Higher Education and Science (OG 151/2022), Act on the Croatian Qualifications Framework (OG 22/2013, 41/2016, 64/2018, 47/2020, 20/2021), Act on the Recognition and Assessment of Foreign Educational Qualifications (OG 69/2022), Standards for the evaluation of quality of higher education institutions in the procedure of re-accreditation (ASHE, 2023), Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) (2015), Criteria for external independent periodic evaluation of the quality assurance system (audit) of higher education institutions (ASHE, 2017), Network of higher education institutions and study programmes in the Republic of Croatia (National Council for Higher Education - NCHE, 2011), New Colours of Knowledge - Strategy for education, science and technology (MSE, 2015), Ordinance on the content of licence and conditions for issuing licence for performing higher education activity, carrying out a study programme and re-accreditation of higher education institutions (OG 24/2010), Ordinance on the conditions for issuing licence for performing scientific activity, criteria for re-accreditation of scientific institutions and content of the licence (OG 83/2010), Ordinance on quality assurance system (2017), Ordinance on Establishment and Function of Quality Assurance System at Josip Juraj Strossmayer University of Osijek (2013), Guidelines for Quality Assurance at Josip Juraj Strossmayer University of Osijek (2018), Quality assurance manual (2013), Ordinance on study programmes and studying (2015), Regulations of the University Centre for Advancement of Quality Assurance in Higher Education (2023).

The Programme contract, as a key mechanism of public funding, guarantees to the Faculty complete autonomy in the management of its scientific activity, while ensuring compliance with national strategic priorities. Through this four-year contract, the Faculty receives constant funding from the state budget, in accordance with the new Act on Higher Education and Scientific Activity, thus providing a framework for achievement of high standards of scientific excellence.

As having autonomy in the financial management, the Faculty increases the efficiency of its scientific activities, intensifies international cooperation and strengthens ties with the economy sector. This funding model enables the Faculty flexibility in making strategic decisions, which improve its competitiveness, activities and contribution to the scientific community. The funds are also valuable in improvement of the business processes, which additionally ensures long-term sustainability and excellence in all segments of the Faculty activities.

The Faculty makes decisions on which projects to enter and which international cooperation to develop through a structured process that includes: strategic planning, proposal and approval of the project application, and monitoring and evaluation of project implementation.

Before the project application, a member of the academic staff, i.e. the leader of the research team fills in a Form on general information about the project, which is available on the Faculty's website.

The process of acceptance, i.e. evaluation and assessment of the project application is based on the submitted form that contains general information about the project application, including basic information about the call for proposals, applicants, project partners, and details about the project itself, such as objectives, type of activity, time frame for realisation, partnerships, planned engagement and mobility of team members, planned new employment of associates, use and purchase of new equipment, budget and the request for pre-financing.

The Dean makes the final decision on the acceptance of project applications and international cooperation. When making such decisions, the Faculty's strategic objectives, including scientific relevance, available resources and opportunities for further development are taken into account.

After accepting the project proposal, the Faculty monitors its implementation through regular annual reports presented to the Faculty Council. In case of international cooperation, special attention is paid to maintaining quality communication and fulfilling all project obligations. In this way, the Faculty ensures that all international projects contribute to the overall development and international recognition of the institution, while respecting high standards of academic and research excellence.

The financial plan is adopted by the Faculty Council on the proposal of the Dean. Mid-year and annual reports on the realisation of the financial plan are also adopted by the Faculty Council.

Information on spending of public funds is updated once in a month at the Faculty's website. All financial plans and reports on their realisation are published at the Faculty's website, which proves Faculty's transparency and responsible business in the social community.

Quality assurance system mechanisms at the Faculty are transparent, aligned with strategic documents and relevant regulatory framework. Internal and external stakeholders are actively involved in their implementation. Planned activities are continuously realised, and the recommendations from the previous internal assessment of the quality system have been considered.

The quality assurance system has been developing over a certain period of time, and has become a part of regular activities undertaken by the Faculty. It is built on good foundations of material and human resources. The Faculty has adopted the Quality assurance policy, which is implemented through the implementation of the Strategy. The Strategy includes a SWOT analysis, strategic objectives, risks, priorities and methods of its implementation, as well as the Strategic programme for scientific research. There are clearly defined procedures for assurance and improvement of the quality at the Faculty, which are revised when necessary. Data on processes, resources and results are systematically collected and analysed and then used for further improvements. The internal quality assurance system established at the Faculty includes stakeholders, i.e. students and external stakeholders - employers, alumni, representatives of vocational and professional associations.

The QA Committee prepares a report on the realisation of its annual activities, and submits it to the Faculty Council once a year. The Report on the management and effectiveness of the quality assurance system with guidelines and recommendations for further activities is attached. The Committee submits a report on internal quality assurance system assessment to the University, and, if necessary, to the external stakeholders.

Within the quality assurance system, the Faculty supports the involvement of various internal and external stakeholders in all aspects of the QA management. Committee for cooperation with the economy sector and innovations, professional bodies and associations, and the wider academic community, including Alumni Association of Faculty graduates and friends, i.e. alumni, are actively

involved in the development of new study programmes and in the revision of existing ones. The quality assurance system encourages students to regularly participate in university and internal surveys, the results of which are discussed and used in the process of revision of study programmes or administrative processes. Teachers and associates are encouraged to plan their professional training and follow trends in the development of certain domains of expertise, which contributes to the promotion of good pedagogical practices and an interdisciplinary approach to learning and teaching.

The Faculty Management board actively contributes to the development and quality of study programmes. It allocates necessary resources, and builds capacities that guarantee the high-quality delivery of scientific and teaching activities, as well as of administrative and professional activities. The Faculty Management board also takes care of the student standard and provision of student support, and monitors the communication and information sharing to the public. An important segment of the Faculty's management is seen in the provision of support to the teaching staff in their scientific and research work, and in systematic development of national and international cooperation. With all aspects of its activity, the Faculty is contributing to the development of society in general.

Faculty staff and students are taking part in various boards and committees, by which the Faculty assures the transparency of the management system and builds the quality assurance system. All students and staff who are not official members of boards and committees are receiving timely information about all Faculty activities, thus making the quality assurance system fully functional and transparent.

1.3. The higher education institution collects, analyses and uses data relevant for the effective management of all activities, and publishes the information about its work.

The Faculty keeps electronic records of all enrolled students, exams, passing of exams, completion of studies and other important information about the course of studies. All information is available in the Information System of Higher Education Institutions (Croatian abbreviation ISVU). ISVU is an IT system developed for all higher education institutions in the Republic of Croatia. This system enables digitalisation of work, and its purpose is to facilitate and simplify the performance of administrative tasks related to studying. Digital records are kept on the enrolment, on progress through the studies, on application for exams, on completion of studies, and similar. The ISVU system is used by students, teachers, employees of the Student office and by the Faculty administration. Students use the ISVU system module called Studomat to monitor their success at studies. Through Studomat, students apply for exams or withdraw such applications, check out the exam schedules, enrol into the next study year, print out various certificates, get insights into their financial obligations, and see almost all data recorded about them in the system. Teachers use the ISVU Teacher Portal, which allows them to check the exam schedules, enter students' grades, and suggest topics for bachelor and master theses. In addition to the Teacher Portal, teachers also use the module called *ISVU ispiti* (ISVU exams), within which they set the exam dates. Staff working in the Student office use the ISVU system in their daily work, they record information about students, enter exam dates, prepare diplomas for printing, help students and teachers to

solve various issues, print out certificates that students cannot print themselves via Studomat. The Faculty Management board uses the ISVU system as a source of information for making decisions important for the management of Faculty's activities. In addition to the ISVU system, the Faculty also uses the IT system *Postani student* (English translation Become a student), through which applications for admission to the undergraduate university studies are made. In the Postani student system, a ranking list of candidates for students is created based on success the prospective students achieve at the State Matura exam. Candidates granted the admission receive an admission number. Furthermore, from the Postani student system, the Faculty gets information about prospective students' interest in enrolling its undergraduate studies, as well as other data important for the analysis of interest in studying at the Faculty.

The Faculty also runs an internal repository (teaching and research database called NIB), which comprises the following modules: assessment of students, scientific papers, bachelor and master theses, cooperation projects, courses, students, academic years, employees, users, travel orders, labs, hall reservations and price lists. The mentioned modules contain pieces of information and data useful for all employees, which they can access quickly, thus supporting their efficient functioning in everyday work.

The Faculty has established an internal organisation and work processes that enable responsible and efficient management through a quality assurance system, by which it fulfils the key condition for integration into the European higher education area.

The teaching process is a fundamental process at the Faculty, within which knowledge is collected and transferred by teachers to students, making them aware of the latest scientific and professional achievements. Continuous development of the quality assurance system and quality improvement is a necessity. In accordance with the European guidelines, and within the implementation of the Bologna Process, the Faculty actively develops the quality culture through the establishment and improvement of the quality assurance system based on the Act on the Quality Assurance in Higher Education and Science (OG 151/22), the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG, 2015), the Ordinance on quality assurance system of the Faculty of Agrobiotechnical Sciences Osijek, the Ordinance of the University Centre for Advancement of Quality Assurance in Higher Education of Josip Juraj Strossmayer University of Osijek, Quality assurance manual, as well as other regulations related to the quality assurance system published at the Faculty website.

Within the quality assurance system and available information technology systems, the Faculty collects data by using different methods, analyses them and uses relevant information for the purpose of monitoring trends, reporting on its activities, planning further activities and measures, and making decisions.

Surveys carried out at the Faculty, either occasionally or regularly, are:

- Analysis of interests into study programmes and indicators of student success and progress through studies
- Analysis of the pass rate of students in all study programmes and majors
- Analysis of completion of study programmes
- Survey on self-evaluation of the teaching staff
- Survey on self-evaluation of the non-teaching staff
- Survey of students on satisfaction with studying
- Survey of teaching staff on satisfaction with online lectures
- Survey of students on satisfaction with online lectures

- Survey related to studying during the COVID-19 pandemic
- Survey of students on the advantages and disadvantages of the mentor system
- Survey of students related to organisation of professional practice
- Survey of employers/feedback
- Survey of graduates
- Survey of employers on employment opportunities
- Analysis of ECTS credit distribution
- Survey of prospective students
- Surveys on the reasons for dropping out of studies
- Analysis of the dynamics of employment of graduates
- Surveys on the satisfaction of doctoral students with studying

The Faculty implements the Common University Student Survey among students, the results of which are available to all teachers via their AAI@EduHr identity through the link.

The Committee for quality assurance works together with the Quality assurance office to monitor the survey indicators and to comply with legal conditions for delivery of higher education and scientific activities. Accordingly, the Committee created a professional development plan for teaching and non-teaching staff at the Faculty, about which realisation the records are kept. The results of the surveys are public and available in the Quality assurance office.

The Faculty analyses results of surveys into the exam pass rates at undergraduate and graduate level of studies, interests of students in the studies, number of enrolled students, structure of enrolled students, success at exams, and according to the results, appropriate improvement measures are determined. In cooperation with the Croatian Employment Service, the Faculty's Quality assurance office systematically collects data on the employment of graduates (it receives monthly reports for the Osijek-Baranja County and quarterly reports for five surrounding counties). The data is processed and presented at the Faculty Council sessions. The Faculty announces the admission criteria, quota, study programmes and lifelong learning programmes, learning outcomes and qualifications, forms of support available to students, procedures applied in teaching, learning and assessment, exam pass rates and opportunities available to students. Within the CroQF Portal, the profile of the sector is created and the level of occupation and qualifications is analysed.

In order to improve the quality of studying at the Faculty, interviews are held with teachers, for whose courses there is a lower exam pass rate (below 30%). Measures are proposed to increase the exam pass rate and guidelines are given for raising the quality of studying through learning outcomes, additional consultation hours and organisation of workshops for development of teachers' pedagogical and didactic skills in university teaching.

Workshops organised since 2019 have been focused on educating teachers on the application of new interactive methods in teaching, by putting special emphasis on digital transformation. Some of the organised workshops were:

- Digital platforms in online teaching at universities
- Implementation of tools for distance learning and teaching: planning, programming and evaluation of the teaching process
- European approach to quality assurance of joint studies
- How to develop and conduct an online exam?
- People make the difference - a motivated academic community

- Challenges of managing and leading a student group
- Improving the quality of university teaching

Aiming to improve the teaching skills of its teachers, communication with students and readiness for lecturing, the Faculty of Humanities and Social Sciences Osijek delivered a workshop Examples of good practice and quality factors of distance learning: educational tools and methods. A workshop was also held for non-teaching staff on improvement of their skills in using MS Excel.

The Faculty organised a professional training on methodology skills for its teachers, which was comprised in a cycle of 5 lectures lasting 6 hours per lecture. Participants were divided into two groups of 25 teachers. A total of 50 teachers completed the mentioned training. The workshop lasted from 11 April to 06 June 2022. The goal was to train the participants on how to use theoretical and practical knowledge of pedagogy, didactics and other social sciences in the process of teaching specific contents of courses, and how to motivate students for active participation in lectures. Participants practised the role of teachers in real conditions and acquired procedural knowledge necessary for teaching and training, for reaching the level of critical-thinking abilities, as well as criteria and attitudes related to teaching competencies. The workshops were divided by topics (1. Education 4.0 for Industry 4.0 and generation characteristics; 2. Active learning and critical thinking; 3. Teaching methods; 4. Teaching systems; 5. Outcomes and competencies - projections and activities). On 20 April 2022, Prof. dr. Zlata Dolaček Alduk, member of the University Committee for Advancement of Quality Assurance in Higher Education, delivered the workshop *How to successfully develop new curricula and study programmes,* with an emphasis put on determination of learning outcomes.

Faculty employees participate in many projects related to improvement of the teaching processes, within which they develop and implement study programmes or acquire new teaching/digital competencies. Some of such projects are:

- AGROKAZ - Development of bachelor program in agroecology with dual education in Kazakhstan
- HEAL-IN-ONE - From digital technology to educational tools: Improving the quality of active learning and teaching in the online and hybrid environment in applied disciplines of agricultural sciences
- ICT in Agriculture
- HariSa - Harmonization and Innovation in PhD Study Programs for Plant Health in Sustainable Agriculture
- SUSTRA – Blended Sustainable Training for Livestock and Animal Food production
- AGFORWEB - Agroforestry practices in West Balkan for sustainable development: weaknesses and strengths
- EURO-PLANT-ACT - Cooperation to implement innovative methods for the assessment of medicinal plants with central roles in pharmaceutics, agriculture and nutrition
- INNO-SAFE-LIFE - Partnership for innovation on the exchange of best practices and the design of joint collaborative initiatives at European level related to the awareness of the effects of contamination on human health
- MEET - Modern Techniques to Ensure Environmental Sustainability in Eastern Europe
- RUR'UP – Innovative education for sustainable development in peripheral rural area

The Faculty keeps records of internal data and allows access to and exchange of the data in accordance with the national legislative framework.

In 2022, the new Faculty website https://www.fazos.unios.hr/ has been launched. The website offers relevant information about:

- study programmes and learning outcomes
- admission criteria and admission quota
- support available to students
- projects
- international cooperation
- social role of the Faculty
- quality assurance system.

The new Faculty website is available in Croatian and English, and it contains updated, concise and valid information about Faculty's study programmes and other activities. There is also an Information Package published for all full-time undergraduate and graduate students, as well as a Student Guide with instructions for students enrolled in the study programme of Digital Agriculture in English language.

The Faculty has created profiles on social networks, such as Facebook, Instagram, TikTok, X, and LinkedIn, where information about all activities and events organised by the Faculty employees and students are posted. In making Faculty social media profiles attractive, the Faculty cooperates with Easy Going creative studio specialised in providing high-quality marketing, design and promotional solutions. Links to the Faculty's social media profiles:

Facebook: https://www.facebook.com/FAZOSOsijek/

Instagram: https://www.instagram.com/fazos.unios/?hl=hr

TikTok: https://www.tiktok.com/@fazos.unios

X: https://x.com/FOsijek

LinkedIn: https://www.linkedin.com/company/faculty-of-agrobiotechnical-sciences-osijek/

The Faculty implements key aspects of digital transformation and complies with relevant policies and legislation, due to which there is no need for the Faculty to develop its own digital transformation strategy. The Faculty recognises the importance of digital transformation by complying with the key factors:

- **Compliance with national and European strategies**: the Faculty recognises the national strategies, such as the Digital Croatia Strategy for the period until 2032, and participates in the European Digital Infrastructure Consortium, by which it adopts the highest standards of digital transformation.
- **Active cooperation with relevant institutions**: the Faculty cooperates with the Central State Office for the Development of Digital Society and acts as a member in the Committee for European policies, by which it aligns its activities with current policies and recommendations of the *Europe's digital decade*, and the Action Plan of the Republic of Croatia *Put u digitalno desetljeće* (*Path to the Digital Decade*).
- **Use of existing national digital platforms**: the Faculty uses services provided by the Croatian Academic and Research Network (CARNET), such as e-learning, access to educational platforms, digital certificates, network data protection, and support for research projects through advanced network and IT resources.
- **Practical implementation of digital tools and training on how to use those tools**: The Faculty has successfully implemented digital tools and offered training for employees on how to use those tools (e.g. for delivery of online lectures and for verification of authenticity

of student papers). Key elements of digital transformation are adopted without the need to formalise them in a strategy. Workshops are organised on "New challenges in online teaching", "Usage of anti-plagiarism software for checking the authenticity of student papers", "How to create and conduct an online exam?", and "Introduction to scientific and professional work". Those workshops were focused on digital transformation, assurance of quality in teaching, improvement of teaching skills and skills in online teaching.

- **Comprehensive digitalisation of administrative processes**: Existing systems for e-business, including e-invoices, travel orders, and submission of requests and issuance of certificates, already enable efficient digitalised administrative processes.
- **Regular training and monitoring of legal news**: Non-teaching staff are regularly trained through digital platforms and they receive professional information in digital form, which ensures that the Faculty is up to date with the latest information on regulations, legislative changes and new practices.
- **Usage of digital platforms for international mobility and promotion**: working in platforms, such as Erasmus Without Papers Dashboard and Keystone SmartHub, enables the optimisation of international mobility, easier communication with international students and staff, and the Faculty promotion, by which the Faculty already achieves the goals of digital transformation within the existing structure.

In addition, the Faculty is dedicated to achieving the goals of the green and digital transition through the integration of sustainable practices into its daily work and the use of digital solutions that reduce paper consumption and optimise energy resources. The Faculty pursues a sustainable and environmentally friendly development model.

In accordance with the Regulation on office operations (OG 75/21), the Faculty uses an appropriate information system for its administration. By creating support for data exchange with other institutions and business entities, the Faculty will be able to perform all administration in digital form. The Dean uses digital e/m-seal and e/m-signature for signing of documents. Administrative staff is participating in professional training courses and receives professional newsletters and journals, some of which are also available in digital form (Računovodstvo i financije, Tim4pin, TEB, etc.). Public procurement of goods and services is carried out within the EOJN system, by complying with all legal regulations. Simple procurement of goods and services is carried out by publishing tenders on the Faculty's website or through the EOJN system, depending on the value of procurement and rules of specific tenders. Documents on procurement are kept in digital and printed form. The Faculty subscribes to the journal Radno PRAVO and Official Gazette, by which all employees of the administrative staff stay up to date with all news about legal issues and official regulations.

For administration of international mobility, the Faculty uses a digital platform Erasmus without Papers Dashboard, which is the European Union's initiative for digital transformation of the Erasmus+ Programme. Digital platform SmartHub (Keystone Education Group) is used for communication with international students and for promotion of study programmes to the international student community.

The tool Microsoft Teams is used for delivery of online teaching as well as for online meetings. OneDrive is used for sharing of documents, and Merlin (Moodle) is used for e-learning and sharing of digital teaching materials. ISVU system is used for keeping records on students, exams and other student affairs. Digital transformation is supported through the integration of online tools for collaboration, management and administration of educational processes. The Faculty provides 1 TB of memory on Microsoft OneDrive to each academic staff. Each newly employed member of

staff gets a new computer with Microsoft Office and a software for statistical data processing of their choice (Statistica; SAS Software), the licences for which are updated every year, so that the software is available to all teachers and scientists.

Topics of student interest, like How to Study Workshop are organised for students of the first study years. Thematic lectures on "How to write a CV", "How to present yourself to an employer" and how to write a motivational letter are organised for students of higher study years. Students are also participating in the Career Week organised by Josip Juraj Strossmayer University of Osijek, during which they learn how to develop their careers and establish connections with the business sector. The Career Week offers various activities, workshops, round tables, forums, speed-dating activities and lectures for students. For students of final study years, the University Centre for Advancement of Quality Assurance in Higher Education organises workshops on "Rules and forms of citation in bachelor and master theses".

In order to promote the Faculty and its activities to secondary school students and to the wider public, there is the Committee for Faculty promotion established at the Faculty, which is involved in organisation of various activities aimed at promotion of the Faculty among prospective students, social community and other stakeholders (attached). Also, the Scientific Forum is established at the Faculty, which organises various workshops and round tables, to which prospective students are invited to participate.

The initiative of the Scientific Forum and the Student Union was supported to organise the Faculty promotion in secondary schools in the Osijek-Baranja County and in neighbouring counties. Professors and assistants delivered a series of scientific and popular lectures. Every year since 2011, the Faculty organises Open Door Days for the purpose of informing prospective students about educational opportunities that the Faculty offers. Press releases, printed promotional materials, social media posts and information on the Faculty's website are directed towards the Faculty promotion. The Faculty participates in the Festival of Science and the University Fair.

In cooperation with the Faculty Student Union and the Alumni Association, the Faculty organises fairs of family farms, and the Wine Fest event, on the occasion of which it gathers its current and former students as agricultural producers to exhibit and sell their agricultural food products.

In 2023, the Faculty organised the "Meeting of Generations" at which it gathered former and current students of Agroeconomics. The aim was to facilitate networking and sharing of experiences. This Meeting of Generations is an opportunity for former and current students to connect, obtain information about the labour market, real sector opportunities and professional practices. A survey was conducted on the employability of graduates, and the contacts of graduates are updated in the Faculty database.

In cooperation with the Bio-based Industries Consortium (BIC) and the Association of European Life Science Universities (ICA), the Faculty organises a competition Bio-based Innovation Student Challenge (BISC). The Bio-based Innovation Student Challenge is a European student competition that recognises excellence in the growing bio-based industrial sector. BISC strives to raise awareness and involve students in the transition to bioeconomy. It is intended for students at undergraduate, graduate and first year of postgraduate (doctoral) study levels. Student teams are given a task to create innovative bio-based products or processes and to solve challenges faced by societies and industries. This competition is an opportunity for students to get involved in sustainable entrepreneurial projects. In addition to this international competition, students also participate in the “Budi uzor” (Be a Role Model) Competition, in which they present innovations, prototypes and business plans.

The main activity of the QA Office and the Committee is to initiate and implement various developmental programmes, to define the standards and criteria for the University Centre for Advancement of Quality Assurance in Higher Education. With the purpose of continuous quality assurance and improvement, the QA Office and the Committee prepares annual reports on the internal assessment of the quality assurance system of the Faculty, and submits them to the University Centre. Those reports, containing recommendations for improvements, are available on the website. Since 2011, there has been a permanent agenda item introduced at the Faculty Council sessions, which is related to reporting on the activities undertaken within the quality assurance system.

The Faculty regularly informs the public about admission criteria, admission quotas, about its study programmes and other lifelong learning programmes, about related learning outcomes and qualifications, forms of student support, procedures applied in teaching, learning and assessment, about exam pass rates, learning opportunities available to students, as well as about employability of graduates. Description of methods of notification that the Faculty uses for sharing of information is contained in Chapter 3. As previously stated, the Faculty publishes an Information Package for students that contains all the necessary information on studying and study programmes. In the next chapter (Chapter II), there is detailed information about the study programmes, and information on other activities and services that the Faculty undertakes and provides is contained at the Faculty website in Croatian and English language, as well as the Faculty profiles on social media networks.

1.4. The higher education institution supports ethics and transparency, academic integrity and freedom, and prevents all types of unethical behaviour, intolerance, and discrimination.

As a constituent of Josip Juraj Strossmayer University of Osijek, the Faculty complies with the Code of Ethics of Josip Juraj Strossmayer University of Osijek adopted in 2011. That document determines general ethical principles and values in science and higher education.

As proposed by the Dean, the Faculty Council appoints the Ethics committee for an office term of four years. The Ethics committee consists of five members. The Dean nominates four members, i.e. two members represent teachers appointed to the scientific-teaching positions, one member represents assistants, one member represents other employees, and one member is nominated by the Faculty's Student Union.

The Ethics committee is in charge of:

- monitoring the implementation of the Code of Ethics at the Faculty and carries out the procedure for determining the violation of the Code of Ethics at the Faculty
- implementing the procedure in cases of violation the University's Code of Ethics on its own initiative or on the initiative of teachers, employees, students or other persons who believe that the University's Code of Ethics has been violated at the Faculty
- reporting to the Dean the case of serious violations of the Code of Ethics, and proposing disciplinary proceedings
- annual reporting on its work, implemented procedures in cases of violation of the Code of Ethics to the Dean and the Faculty Council.

The Ethics committee meets when needed, i.e. when it officially receives a written complaint or request for consideration of a specific issue. In cases of reported unethical behaviour of employees, the Ethics committee considers the report and, if necessary, discusses the problem separately with both sides (the party that filed the case of unethical behaviour and the person reported for unethical behaviour). The Ethics committee requests written statements about the issue from the employee against whom the report was filed. After that, the case is reviewed and a decision is forwarded in writing to the Dean, who is obliged to act in accordance with the Ordinance on disciplinary responsibility.

In performing its duties, the Ethics Committee can ask for professional assistance from appropriate scientific and professional institutions or individual experts. In the process of determining violations of the Code of Ethics, the Ethics Committee has to respect the principle of secrecy and to protect the dignity of persons involved in the process.

The Ethics committee deals with the cases of unethical behaviour and discrimination between employees of the Faculty, and between employees and students. The Committee also deals with reports referring to plagiarism of research results or plagiarism of students' qualification papers. At the beginning of each academic year, the Dean delivers a welcome speech to students of first study years. On this occasion, students are familiarised with the Code of Ethics. The Board for bachelor and master theses prepared the Author statement, which each student signs as a part of their bachelor and master thesis submission for assessment. There is also a Statement on the authenticity of the doctoral dissertation and academic integrity, which is signed by students of the Doctoral study programme in Agricultural Sciences on the occasion of initiation of doctoral dissertation assessment procedure. The same statement is also signed by the students of postgraduate specialist studies. Anti-plagiarism software Turnitin is at disposal to all Faculty teachers to detect plagiarism. Scientific and teaching staff participated in a workshop on the use of Turnitin, which was organised by the Committee for quality assurance. In cases when plagiarism of research results is reported, a written statement from the reported person and a written statement from the author of the original research results is required. After collecting all information, the Ethics committee makes a decision and sends it to the Dean for review and for reaching a final decision.

There is the Disciplinary committee appointed by the Faculty to act as advisory body for conducting disciplinary proceedings. The Disciplinary committee carries out disciplinary proceedings for more serious disciplinary offences and proposes disciplinary measures to the Dean. The Disciplinary committee consists of a president and two members, of whom two are teachers holding scientific-teaching titles and one is an associate appointed to the associate position. The president and two members of the Disciplinary committee and their deputies are appointed and dismissed by the Dean.

In cases of minor disciplinary offence, within eight days from the day of receiving the disciplinary report, or from the day of getting the information on the disciplinary offence personally, the Dean is obliged to ask the reported teacher or associate to present their defence. If the Dean determines that a disciplinary offence has been committed, he is obliged to issue a disciplinary measure that is determined by the Ordinance on disciplinary responsibility of teachers and associates of Josip Juraj Strossmayer University of Osijek.

Disciplinary proceedings for serious disciplinary offences are initiated by the Dean, who is obliged to request the Disciplinary committee to initiate disciplinary proceedings, based on a written report or ex officio procedure of the committed disciplinary offence. Any teacher, associate, employee, student or other person can submit a written report immediately after a commitment of a disciplinary offence, or after obtaining information on a committed disciplinary offence, yet no later

than the deadlines established by the law. Exceptionally, a disciplinary report can be submitted orally, in the case of which an official note is made. The disciplinary report, that is, the official note, must be signed by the person who files a report. The disciplinary procedure is carried out in the form of a hearing before the Disciplinary committee. Immediately after receiving the request to initiate disciplinary proceedings, the Disciplinary committee schedules a hearing to which the person to whom the request refers, the person who filed a report, or the person authorised for representation, and the union representative are invited. The hearing before the Disciplinary Committee is public, except during voting and reaching a decision. If the Disciplinary Committee concludes that a disciplinary offence has been committed, it issues a conclusion on disciplinary offence commitment and, with the same conclusion, proposes to the Dean disciplinary measure, as determined by the Ordinance on disciplinary responsibility of teachers and associates of Josip Juraj Strossmayer University of Osijek.

As of the Ordinance on the procedure for internal reporting of irregularities and appointment of a confidential person, employees of the Faculty can report irregularities, actions or omissions that are illegal, as referring to the regulations in the Article 4 of the Act on the Protection of Whistleblowers, or that are contrary to the purpose of those regulations.

Internal reporting of irregularities starts with the submission of a report to a confidential person. Confidential person of the Faculty is Professor Vesna Rastija, and the deputy confidential person is Professor Vladimir Margeta.

As of the provisions set by the Labour Act and the Ordinance on the Faculty activities, apart of the Dean, Prof. Dr. Ivona Djurkin Kušec and Assoc. Prof. Dr. Tihomir Živić are authorised to receive and resolve complaints related to the protection of workers' dignity.

Josip Juraj Strossmayer University of Osijek appoints a Student Ombudsperson, who receives student complaints related to students' rights, and discusses them with competent authorities.

At the Faculty, there are mailboxes at disposal to students, non-teaching and teaching staff, in which they can anonymously leave a letter reporting all problems and shortcomings they encounter in their daily performance of activities.

1.5. The quality assurance system is periodically improved and revised on the basis of the results of implementation of regular internal and external quality assurance procedures.

The Quality assurance system established at the Faculty is based on the mission, vision and the Faculty's strategic objectives, on the Development Strategy of Josip Juraj Strossmayer University of Osijek 2021-2030, and the Strategy of education, science and technology of the Republic of Croatia. The Committee for quality assurance of the Faculty is established by the decision of the Faculty Council. It consists of nine members: four representatives of teachers, one representative of assistants, two students (proposed by the Student Union) and two external stakeholders (attached). Such composition of the Committee allows for involvement of the Faculty stakeholders, as well as external stakeholders (Agricultural Institute, Žito Ltd. Osijek, Croatian Agriculture and Food Agency), with which the Faculty cooperates and collects feedback that it further uses in quality improvement activities. Contribution to the Committee's work is provided

also by students. Students are actively involved in the Faculty Council and in other committees, as well (Committee for teaching, Committee for postgraduate studies, Ethics committee).

The Quality Assurance Office was established in 2016. While cooperating with the Committee for quality assurance, the QA Office carries out activities and analyses the quality assurance system. The Office and the Committee cooperate with the University Centre for Advancement of Quality Assurance in Higher Education. The QA Office monitors the quality of studies at the Faculty, conducts surveys among students, teaching and non-teaching staff, business entities and, when necessary, other stakeholders of undergraduate, graduate and doctoral studies. The mentioned surveys are intended for obtaining opinions about the quality of teaching, course contents, literature, the introduction of new forms of teaching, way of conducting the exams, communication with teachers, level of information students receive about study programmes, student workload and other issues important in the teaching process. Based on the collected data, the QA office prepares reports on the results of the conducted surveys. The Committee presents those reports to the Faculty Council and proposes measures to improve the quality of the teaching process.

Based on the recommendation obtained within the previous re-accreditation procedure completed in 2019, the Faculty devised an Action Plan for the period 2020-2025, which determines measures for improvement of quality of Faculty management and operations.

The following activities are carried out in accordance with the recommendations of the Expert Panel from the previous re-accreditation process:

1. **Improved and revised system of student mentoring**
    a. The mentoring system *„Mentor-Study year coordinator“* started in 2015. Study year coordinators / mentors are appointed at the beginning of the academic year. Mentors are teachers assigned to provide support to students. They organise group or individual meetings with students. At those meetings with mentors, students are informed about the possibilities of employment and continuation of studies. The meetings with mentors are structured according to the proposed topics defined by the Committee for quality assurance, and are adjusted to student needs.
    b. Starting in 2022, the Faculty implements the student support system through the *"Student tutor"* mentoring system, which provides for better interaction with students, so that they can adapt to the challenges of student life more easily and get fully involved in the academic community. Within this new mentoring system, senior students can become student tutors. As of the Faculty Council decisions, students are appointed as student tutors at each study level and for each year of study.
    c. The Faculty organises workshops for teachers that work as mentors of doctoral students at doctoral studies. The workshops aim to improve provision of doctoral education and to raise awareness of the importance of student supervision at the doctoral study. There are many studies carried out by the Faculty staff into the quality of education and systems of mentors, which are published as scientific papers at the International symposium on quality “Quality - Yesterday, Today, Tomorrow”, organised by the Croatian Quality Managers Society (some of papers are *„Sustavi mentoriranja kao podrška obrazovnom sustavu“* https://hdmk.hr/; *„Challenges in teaching and learning in higher education during the COVID-19 crisis“* http://www.trend.uns.ac.rs/; *„Digital transformation in the higher education system: situation, experiences, advantages, successfulness, and opportunities of distance learning at the Faculty of Agrobiotechnical Sciences*

Osijek“ https://confcoast.com/img-publications; “*Educational opportunities and challenges for the study programme in Agroeconomics*“, *https://www.croris.hr/crosb,* and many others. The system of mentors established at the Faculty is continuously analysed and recommendations are issued for improvements of mentors’ work. Proposed measures for improvements are adopted by the Faculty Council..

2. **Increased the level of success of studying at the Faculty**
    a. Surveys are carried out among potential students on their motivation to study at the Faculty. Surveys are also carried out among students after their first year of study to assess their satisfaction with studying, and a survey is also given to students to investigate the reasons for dropping out of studies. According to the survey results, if compared to the previous five-year period, the number of students who complete their studies without prolongation has increased, and the average duration of studying has decreased.
    b. The Faculty provides support to students from underrepresented and vulnerable groups through adapted learning resources. When needed, an individual approach to teaching is arranged with teachers of each course for which a student needs specific adjustments.
    c. In order to provide all sources for successful studying, the Faculty continuously invests into the purchase of scientific literature.
    d. Reports on delivered teaching (attached) and the Records on delivered lectures (attached) are used for continuous monitoring of achieved learning outcomes in classes.
    e. For courses that are detected to have a lower pass rate at exams, as indicated by students through the Unified University Student Survey, the quality of teaching process is continuously monitored and measures are undertaken to increase the exam pass rates.
    f. Skills referring to career development and acquisition of entrepreneurial competencies are encouraged, and students are offered opportunities to establish contacts with potential employers within various workshops, fairs and similar events that the Faculty organises every year in cooperation with its stakeholders.
    g. In order to improve generic skills necessary for easier entry to the labour market, the Faculty has increased financial support available to students for their participation in scientific and professional conferences, study visits and excursions.
    h. In the summer semester of the academic year 2021/2022, the offer of courses for foreign exchange students delivered in English language has been widened (http://www.fazos.unios.hr/katalog-kolegija).
    i. In 2021, the Faculty has launched the new university graduate study programme in Digital Agriculture in English language.
3. **Revised professional practice**
    a. Surveys carried out among students and employers who provided professional practice for students showed that the number of hours spent in the professional practice programme was too low, so a new concept of conducting professional practice at the Faculty was developed and adopted. Professional practice programme is explained in Chapter II, paragraph 2.3.

4. **Intensified promotion of recognition and visibility of the Faculty in community**
    a. participation of Faculty employees and students in activities related to the promotion of the Faculty (Festival of Science, Open Door Day of the Faculty, Career Day, presentation of the Faculty in secondary schools and at fairs, professional events, etc.) has been increased by 20%.
    b. The Faculty invited secondary school students to visit its facilities and Experiment stations and organised interactive workshops for them.
    c. Faculty's presence in digital media is intensified and greater visibility is achieved if compared to the previous five-year period.
5. **Reorganisation of university undergraduate and graduate study programmes**
    a. In the academic year 2021/2022, a decision has been reached to start the process of developing new university undergraduate and graduate study programmes.
    b. The Committee for development of undergraduate university studies and the Committee for development of graduate university studies have defined the basic rules and structure of future undergraduate and graduate study programmes.
    c. An analysis of the existing professional studies was carried out (number of students, exam pass rate, dropout rate, satisfaction with studies) and a decision was reached to delete those professional studies from the register of study programmes.
6. **Encouraged mobility**
    a. Mobility of teaching, non-teaching staff and students during the evaluation period has been increased, if compared to the previous re-accreditation period (details available in Chapter III, paragraph 3.5)
    b. In the previous five-year period, the Faculty fulfilled the recommendations of the National Agency for Mobility and EU Programmes of an annual increase of at least 5% in the number of academic mobilities. The Faculty reached about a 20% increase in the number of mobility, which ranks it among the most successful University constituents when it comes to participation in academic mobility.
    c. There is an increase in the number of signed cooperation agreements with institutions from the EU and third countries for the purpose of staff exchange and realisation of scientific research activities.
    d. The number of international professional projects has been increased as well.
    e. The Faculty promoted its studies at educational fairs and through digital services of international and national platforms, thus reaching out to a large community of international students.
7. **Revised lifelong learning programmes**
    a. The Faculty Council adopted the Decision on activating the dormant status for the lifelong learning programmes that did not attract enough students. Lifelong learning programmes for which there was interest in the past period are still being carried out, and they are planned to be aligned with the learning outcomes of CroQF, in order to offer those programmes to students via Croatian Employment Service vouchers. Market survey is carried out to assess the needs of the labour market, and participants who completed lifelong learning programmes have been surveyed (Questionnaire for participants) to obtain information on their satisfaction with studying. Promotional material is created for individual lifelong learning programmes. Calls for admission to lifelong learning programmes are

announced in accordance with the needs of the labour market and on the basis of students' interest expressed in the pre-application phase. More about lifelong learning programmes is to be found in the Chapter II.

In accordance with the mentioned processes, QA Office and the Committee for quality assurance constantly improve their work, by which the Faculty supports the development of a culture of quality among teachers, students, non-teaching and administrative staff, and promotes the importance of active participation in internal and external quality assurance procedures. Thus, the Faculty fulfils its purpose by acting as a driver of change and by offering new perspectives for improvements in the higher education ecosystem.

II. Study programmes and lifelong learning programmes

2.1. The intended learning outcomes at the level of a study programme are aligned with the competences a student should gain by completing the study programme, as well as with the CroQF level (ESG 1.2.).

The Faculty of Agrobiotechnical Sciences Osijek (further in the text: the Faculty) educates students in the area of Biotechnical sciences. Teaching is delivered at three study levels. Within the first level, the University undergraduate study programme in Agriculture is delivered as of the licence obtained on 26 May 2008, and entered in the Register of study programmes under the code 243. The University undergraduate study programme in Agriculture consists of five majors:

1. Agricultural Economics
2. Plant Production
3. Horticulture
4. Mechanisation
5. Zoo-techniques.

The above majors have been carried out since the academic year 2005/2006, except for the major in Horticulture, which has been introduced in the academic year 2008/2009.

University undergraduate study programme in Agriculture lasts for three years, i.e. six semesters. The first semester is mutual to all majors and consists of 6 obligatory courses that enable students to acquire knowledge and skills necessary for continuation of the following semesters. The second semester also contains 6 obligatory courses, of which two are the same for all majors, and the remaining four courses are specific for each major or mutual for all majors. During the second year, students enrol in ten obligatory courses of their major. In the third year (5th semester), there are five obligatory courses within each major, one of which is professional practice. In the last 6th semester, there are four elective courses (students choose elective courses from the list of elective courses), and a bachelor thesis preparation. All undergraduate courses last for one semester, i.e. they are delivered in one semester in 45 - 75 teaching hours, upon completion of each, students obtain 3 - 6 ECTS credits. Within the University undergraduate study programme in Agriculture, students acquire 180 ECTS credits, of which 86% are obtained by taking obligatory courses and 14% by taking elective courses. Upon completion of the University undergraduate study programme in Agriculture, the student earns an academic degree of the University Bachelor of Engineering in Agronomy (Croatian abbreviation: univ. bacc. ing. agr.).

Students who graduate from the undergraduate study can get employed or can continue with graduate studies. The Faculty offers the following university graduate study programmes:

1. Agricultural Economics (code in the Register of study programmes 562)
2. Plant Production (code in the Register of study programmes 563), majors in:
    - Plant Production
    - Plant Nutrition and Soil Science
    - Plant Breeding and Seed Production
    - Plant Protection
3. Ecological Agriculture (code in the Register of study programmes 566)
4. Mechanisation (code in the Register of study programmes 564)
5. Vegetable and Flower Growing (code in the Register of study programmes 1847)
6. Fruit Growing, Viticulture and Wine Production (code in the Register of study programmes 1842), majors in:
    - Viticulture and Wine Production
    - Fruit Growing
7. Zoo-techniques (code in the Register of study programmes 565), majors in:
    - Feeding of Domestic Animals
    - Hunting and Beekeeping
    - Special Zoo-techniques
8. Digital Agriculture (code in the Register of study programmes 2645)

Teaching within the University graduate study programmes in Plant Production, Ecological Agriculture and Mechanisation is delivered as of the licences issued on 2 June 2005. The university graduate study programmes in Agricultural Economics and Zoo-techniques are delivered as of the licences issued on 21 June 2005, and the University graduate study programmes in Vegetable and Flower Growing, and Fruit Growing, Viticulture and Wine Production are delivered as of the registration in the Register of study programmes completed on 7 December 2010. The University graduate study programme in Digital Agriculture has been delivered since the academic year 2021/2022.

During the first year of the university graduate studies, students enrol ten obligatory courses specific to each study programme. In the second study year, i.e. in the 3rd semester, students enrol the obligatory course of Professional practice and, in agreement with the mentor, choose four elective courses that are offered on a joint list of elective courses for the graduate studies (there is one list of elective courses for all graduate study programmes except for Digital Agriculture). During the 4th semester, students work on their master thesis. Preparation of theses usually includes research, within which students use acquired knowledge in practice and learn about scientific-research methods applied in Biotechnical sciences, in the area of agriculture. In addition to the research for their master theses, students can present a selected thesis topic through a review paper based on extensive processing of literature data. Courses at the graduate level are delivered over 75 teaching hours, and each course is assigned with 6 ECTS credits. Professional practice is one of the obligatory courses, it lasts for 10 days, and upon successful completion of Professional practice, students acquire 6 ECTS credits. The preparation and defence of the master theses are awarded with 30 ECTS credits, which are acquired by students through the following activities (Ordinance on bachelor and master theses):

1. approval of the thesis topic, objectives and research methods - 10 ECTS credits
2. approval of the report on the conducted research – 15 ECTS credits

3. thesis defence – 5 ECTS credits.

The University graduate study programmes last for two years, and upon completion, students gain 120 ECTS credits, of which 80% are gained through obligatory courses and 20% through elective courses. Upon completion of the university graduate studies, students are awarded a degree of the University Master of Engineering, along with stated profession (Croatian abbreviation: mag. ing.).

After completing the university graduate studies, students can continue their education at the postgraduate level. The Faculty offers postgraduate specialist studies, as well as the Doctoral study programme in Agricultural Sciences (code in the Register of study programmes 718) with the following majors:

1. Agricultural Economics
2. Agrochemistry
3. Plant Breeding and Seed Production
4. Plant Protection
5. Animal Husbandry
6. Animal Feeding and Forage Technology
7. Hunting and Cynology
8. Technical Systems in Agriculture

On the basis of the licence issued on 19 December 2007, the Doctoral study programme in Agricultural Sciences has been delivered since the academic year 2008/2009. The study lasts for three years, and upon completion, students are awarded 180 ECTS credits and a title of Doctor of Science in the field of Biotechnical Sciences (Croatian abbreviation: dr. sc. biotech.).

The Faculty delivers five postgraduate specialist studies:

1. Quality and Safety of Animal Products (code in the Register of study programmes 819)
2. Production Systems in Animal Husbandry (code in the Register of study programmes 817)
3. Pig Breeding (code in the Register of study programmes 818)
4. Management of Agricultural Farms (code in the Register of study programmes 815)
5. Plant Protection (code in the Register of study programmes 816).

Postgraduate specialist studies have been delivered since the academic year 2008/2009, and last for 3 semesters. Upon completion, students are awarded 90 ECTS credits. The University postgraduate specialist study in Plant Protection is an exception, as it lasts for 4 semesters and students gain 120 ECTS credits upon its completion. Postgraduate specialist studies are issued licences dated 8 November 2007, 15 December 2007 (Management of Agricultural Farms) and 24 November 2008 (Plant Protection).

Since the Faculty constantly monitors the employability of its graduates and considers all recommendations issued by the Croatian Employment Service regarding the admission quotas, it made a decision to stop accepting students to professional studies. As decided by the Faculty Council, the professional studies in Agricultural Entrepreneurship and Mechanisation have not been offered to students since the academic year 2018/2019. Professional studies in Plant Production, major in Crop Production, and in Zootechniques are also abolished, as students have not been enrolled since the academic year 2021/2022 (Decision). Considering above mentioned, information about professional undergraduate study programmes are not shown in Analytical supplement.

In addition to the above-mentioned study programmes, The Faculty also offers lifelong learning programmes. The following lifelong learning programmes are currently delivered:

1. Basics of Plant Protection
2. Plant Protection
3. Management of projects for rural development
4. Basic training course for coordinators and staff working in stations for inspection of technical systems in plant protection
5. Advanced training course for coordinators and staff working in stations for inspection of technical systems in plant protection

Within all study programmes, learning outcomes are clearly defined both at the level of the whole study programme and at the level of each course (Analytic Supplement, Table 2.1 and Teaching delivery plan 2022/2023).

Within the re-accreditation process of the Faculty, completed in June 2013, the Expert Panel determined that learning outcomes were not defined at the level of courses. Following their recommendation, within the Action Plan of the Faculty 2014-2018, learning outcomes were determined for all courses of all undergraduate and graduate study programmes, as well as for postgraduate specialist studies and for the doctoral study. The learning outcomes of all undergraduate and graduate studies were developed within the project "Improving the quality and application of the CroQF in undergraduate university studies in Agriculture", within which all existing study programmes were analysed and surveys of employers and students were carried out. For the purpose of defining the learning outcomes of the study programmes, the Faculty analysed the labour market trends and the needs for workforce in agricultural profession, and used the results of surveys conducted among employers in agricultural sector and among graduates. By doing so, the Faculty also contributed to creation of the occupational standards in accordance with the CroQF. Effective definition of learning outcomes as of CroQF and EQF is essential for creating coherent, transparent and internationally recognised study programmes. The procedure requires constant cooperation between higher education institutions, policy makers and all interested stakeholders from the economy sector and society in general, so that defined learning outcomes remain relevant and aligned with national and global standards. In order to facilitate that process, the Faculty issued the Quality assurance manual, which in its Chapter referring to Approval, monitoring and periodic evaluation of programmes and qualifications, stipulates the obligation of surveying the graduates and employers, as well as the obligation to monitor the employability of graduates. Based on the results of surveys, the Faculty is obliged to proceed with the amendments to the study programmes.

Before proceeding with definition of learning outcomes, teachers participated in workshops dealing with topics on learning outcomes, which elaborated the process of definition of learning outcomes in accordance with professional guidelines and the ECTS Users' Guide 2015. In order for the defined learning outcomes to be specific, measurable, focused on student achievements, and aligned with the study programme objectives and CroQF and EFQ descriptors, the Faculty relied on their teachers' experiences in teaching acquired over the period of 64 years of higher education in the field of Biotechnical sciences, as well as experiences gained from cooperation with European universities and colleges operating in the field of Biotechnical sciences (e.g. BOKU – University of Natural Resources and Life Science Wien, Austria, the University of Hohenheim, Germany, Wageningen University & Research-WUR, Netherlands, Faculty of Agriculture, University of Zagreb). The learning outcomes of all university undergraduate and graduate study programmes

are defined and approved by the University Senate, as of the decision issued on 9 June 2015 (Decision on compliance of undergraduate and graduate university studies and professional studies of the Faculty of Agriculture). The exception refers to the University graduate study programme in Digital Agriculture, which is developed within the project Development and establishment of a joint study program „ICT in Agricultural Science". It is a joint study programme that the Faculty developed in cooperation with the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek (FERIT). The project was successfully completed and the first generation of students has been enrolled in the study programme in the academic year 2021/2022. The proposal of the study programme has been devised within the mentioned project, and it contains learning outcomes at the level of the study programme and at the level of each course, as presented in the Study Programme Proposal.

In the process of defining the learning outcomes for individual courses, attention was paid to their alignment with the learning outcomes of the study programme and the educational level, as of the descriptors of CroQF and EQF. Therefore, as shown in the Analytic Supplement, Table 2.1, each study programme contains defined learning outcomes. There are also learning outcomes determined for all courses (Teaching delivery plan 2022/2023), and in the mentioned table, courses are distributed to groups showing which course contributes to achievement of specific learning outcome of the study programme. Each course with its learning outcomes contributes to achievement of one or more learning outcomes of the study programme. In this way, the courses are intertwined and confirm the importance of individual teaching units or indicate potential overlaps and repetitions of individual teaching units within one course or between two and/or more courses. The course objectives, teaching methods, assessment and the number of ECTS credits were also taken into account in the process of harmonisation. Learning outcomes of each course contribute to the achievement of the intended learning outcomes of the study programme. The intended learning outcomes contribute to acquisition of not only specific professional competencies, but also general or generic competencies (Table 2.1.). In addition to specific competencies, generic competencies are necessary for successful performance of tasks in a working environment. At the University level, the Gender Equality Plan (GEP) has been adopted, and its provisions apply to the Faculty as well, meaning that all teachers adhere to them.

Table 2.1. Some courses and their learning outcomes that develop generic competencies

Examples of generic competencies	Course
Knowledge of foreign language	English language I and II
Basic computer skills	Information and communication technologies Plant production modelling
Ability to work in a team	Business communications and advisory work Agricultural and rural policy
Skills in project development and management	Management and assessment of developmental projects
Ability to communicate with people who are not experts, the ability to work in an interdisciplinary team, ethics at work	Professional practice I Professional practice II

At university postgraduate studies, generic and expert competencies which students obtain during the studies are shown in Analytical supplement; Table 2.1.

When defining the learning outcomes, special attention was paid to the alignment of the learning outcomes of the study programmes with the CROQF and EQF descriptors in order to address the competencies of the appropriate study level (levels 6, 7, or 8). In addition, by harmonising learning outcomes with CROQF and EQF descriptors, the level of achievement is defined and the transparency of qualifications is assured, as qualifications are easier to be compared in different education and training systems among EU member states. When defining the learning outcomes, one of the most important challenges is to consider the needs of the labour market and of society in general. By aligning the learning outcomes with the CROQF and EQF descriptors, it is assured that a study programme will provide for acquisition of competencies that are necessary for a certain level of study and that students will reach a certain level of knowledge and independence, thus being recognised on the labour market, or being able to continue education at higher level of study. Qualifications awarded upon completion of studies correspond to the educational levels. When graduating, each University Bachelor of Engineering in Agronomy or University Master of Engineering or Doctor of Sciences in Biotechnology is awarded a diploma and a diploma supplement in Croatian and English language. At the national level, the content of diploma and diploma supplement is regulated by the Ordinance on the format and content of certificates, diplomas and Diploma Supplement. Among other information, the Diploma Supplement contains the information on all passed courses with achieved grades and ECTS credits, information about the qualification level, and achieved learning outcomes.

The Diploma Supplement provides an insight into the learning outcomes and competencies that the student acquired within a specific study programme, so that employers can assess whether the stated competencies reflect the specific knowledge of potential employees. For students who continue their studies at a higher level, the data contained in the Diploma Supplement are necessary to determine whether they meet the requirements for admission to a higher level of study. In general, at the Faculty, almost 87% of students who complete undergraduate studies continue to study at one of the Faculty's graduate studies.

In addition to all the above, the intended learning outcomes of the studies are in accordance with the Faculty mission and its strategic objectives. In the Development Strategy of the Faculty of Agrobiotechnical Sciences Osijek 2018/2019 – 2022/2023, one of the overall aims states the following: “Ensuring high quality of student education through interconnection of teaching and research and through recognition of contemporary study programmes in the field of Biotechnical sciences and agriculture, as well as in the multidisciplinary fields, which shall further lead to the improvement of students and staff mobility and to the development of high-quality lifelong learning programmes based on the real needs of the economy sector. This will also facilitate the Faculty’s ability to attract the best secondary-school-leaving students to continue their higher education at one of the study programmes offered by the Faculty”. This overall aim confirms the importance of a precise definition and of alignment of learning outcomes. Learning outcomes shall ensure a high level of education quality and adequate preparation of graduates for the labour market. Furthermore, alignment of learning outcomes with the CROQF and EQF descriptors facilitates the mobility of students and the recognition of achieved ECTS credits, which contributes to the internationalisation of the Faculty.

The Faculty also defines learning outcomes for its lifelong learning programmes. Learning outcomes for lifelong learning programmes are presented in the Analytic Supplement, Table 2.1. Learning outcomes for lifelong learning programmes have been defined in the process of lifelong learning programme development, by taking into consideration the needs of the labour market and the requirements of individuals for additional training and acquisition of specific competencies in the field of Biotechnical sciences and agriculture. The Centre for Lifelong Learning has been

established at the Faculty as a separate organisational unit. It actively delivers training programmes and contributes to professional development of experts in the field of agriculture. The Centre for Lifelong Learning is currently working on development of programmes for partial qualification or micro-qualifications (depending on the scope of the programme), which the Faculty shall offer to candidates using the voucher system of the Croatian Employment Service.

The Quality assurance manual determines the procedures for development and revision of study programmes, and states the obligation of monitoring and assessing study programmes through surveys of students and teaching staff (self-evaluation) as well as employers. The collected information is used as a basis for deciding on amendments of the existing study programmes or for development of new study programmes. The mentioned surveys are also used to monitor whether the teaching delivery is in accordance with the teaching delivery plan (survey results). Within all study programmes, teaching is organised in semesters (each course lasts for one semester, i.e. 15 weeks), and the courses are scheduled in a logical sequence, so that the learning outcomes are structured to build on each other. For example, all majors of the undergraduate study programme in Agriculture contain the basic course in Chemistry in the first semester, and in the following years of study, scheduled courses, such as Biochemistry, Genetics, Plant Nutrition, etc., require prior knowledge in Chemistry. By achieving learning outcomes from the course in Chemistry, students can successfully continue with studying and achieving further learning outcomes intended within the mentioned courses at higher study years. Certain courses set passing of exams at specific courses as a prerequisite for enrolment. For example, before taking the final exam of the course Animal Products I, students need to pass the exam in Basics of Biochemistry and Microbiology. Students need to acquire certain learning outcomes by setting priorities in taking exams. Methods of evaluating students' achievements are prescribed by the Ordinance on assessment of students' performance at the University undergraduate study, undergraduate professional study and University graduate study of the Faculty of Agriculture in Osijek within the European Credit Transfer System (ECTS). The Ordinance determines methods and procedures for assessment of acquired knowledge, skills and competencies (achievement of learning outcomes) of students at all types and levels of study at the Faculty. The ordinance also defines necessary conditions that each student has to fulfil in order to receive a grade. Students' performance is monitored and evaluated during lectures and in the final exam. Assessment is based on the European Credit Transfer System (ECTS), the national numerical grading system and the percentage of success in achieving the defined learning outcomes.

2.2. The higher education institution determined the processes for planning and developing new study programmes, and for monitoring and periodically revising the existing ones. This ensures that the study programme is up-to-date, and that the content of study programmes is aligned with the latest scientific / artistic / professional knowledge (ESG 1.2. and 1.9.).

As determined in the Development Strategy of the Faculty of Agrobiotechnical Sciences Osijek 2018/2019-2022/2023, the Faculty mission and vision relies greatly on the tradition in higher education in the field of agriculture. The Faculty aims to build a recognisable educational profile based on modern and contemporary learning outcomes, on a flexible concept of lifelong learning and on education of highly qualified experts. The Faculty profiles itself into a recognisable educational institution in the biotechnical and interdisciplinary fields of sciences and aims to become an active participant in the European Higher Education Area. It also develops into a biotechnical centre of excellence for the transfer of knowledge and technologies into the economy sector. With this in mind, it is important to modernise the existing study programmes and, when necessary, to introduce new study programmes. The Faculty has established processes for the planning and development of new study programmes and for monitoring and periodic revision of existing study programmes. Processes of development of new study programmes and continuous improvement of existing study programmes are defined in the Quality assurance manual, which is aligned with the Statute of the Faculty of Agrobiotechnical Sciences Osijek, with the Development Strategy of the Faculty of Agrobiotechnical Sciences Osijek 2018/2019-2022/20223, and the Ordinance on study programmes and studying at Josip Juraj Strossmayer University of Osijek.

Periodic revision of study programmes is carried out in accordance with the procedure described in the Quality assurance manual. Quality of existing study programmes, amendments to existing study programmes, analysis of the compliance of teaching with the study programme teaching delivery plan, surveying of graduates and employers, compliance with the ECTS and the workload of students, monitoring the success at completion of studies, monitoring the graduates' employability, evaluation of study programme attractiveness, and the process of development of new study programmes are just some of the issues determined by the Manual.

Evaluation of the quality of existing study programmes refers to monitoring of the study programme quality by following the indicators of success. Department heads, working group within each department, vice-dean for education and quality management, vice-dean for science and postgraduate studies, Committee for teaching, Committee for the doctoral degree award, Committee for postgraduate specialist studies, Committee for quality assurance, Quality assurance office and Student services are in charge of monitoring the study programme quality. The Quality assurance office and the Student services collect the data necessary for evaluation of the study programme quality. The working groups carry out the analysis of study programmes, by following the instructions for (self) analysis of study programmes. Amendments to the study programmes are proposed and implemented on the basis of results obtained within the process of study programme quality analysis, and by taking into account various indicators. The head of the

working group submits a proposal for amendments to the organisational unit of the Faculty and to the vice-dean for education and quality management.

Amendments to the existing study programmes are necessary because of continuous improvement of study programmes and the obligation to make learning outcomes meet the needs and expectations of students and the needs of the labour market. The mentioned processes are supervised by the vice-dean for education and quality management, the vice-dean for science and postgraduate studies and heads of department. Proposals for amendments to study programmes are submitted by the heads of department to the vice-dean for education and quality management and to the vice-dean for science and postgraduate studies. Proposals are sent to the Faculty Council for adoption. Further approval of amendments to study programmes is carried out according to the Ordinance in assessment of study programmes at Josip Juraj Strossmayer University of Osijek.

Compliance analysis of the teaching plan with the study programmes is carried out continuously, which is necessary to ensure the proper realisation of study programmes, and thus the achievement of defined educational goals and learning outcomes. The analysis of the proposed curriculum is carried out by the heads of department, the vice-dean for education and quality management and the vice-dean for science and postgraduate studies. It is checked whether the curriculum contains all prescribed elements (the elements of curriculum are defined in the Act on Higher Education and Scientific Activity) and it is compared with the study programme. If deviations are detected, the head of the department proposes a new curriculum, taking into account the conclusions of the analysis. After conducting the analysis, the proposed curriculum is submitted to the Faculty Council for adoption.

Surveying of graduates is conducted every third year with the aim of determining the satisfaction of graduates with the acquired theoretical and practical knowledge during their studies. The Quality assurance office, the Committee for quality assurance, vice-dean for education and quality management and vice-dean for science and postgraduate studies are in charge of implementing the survey. The results of the survey show whether the intended learning outcomes have been achieved by students at the end of their studies, and the obtained results are used as guidelines for amendments to study programmes. Results of this survey show if the study programmes enable the acquisition of the intended learning outcomes and provide information to which extent graduates are satisfied with studies and studying at the Faculty. According to the survey conducted among 94 respondents, 85% of them would recommend studying at the Faculty to someone else (Figure 2.1.).

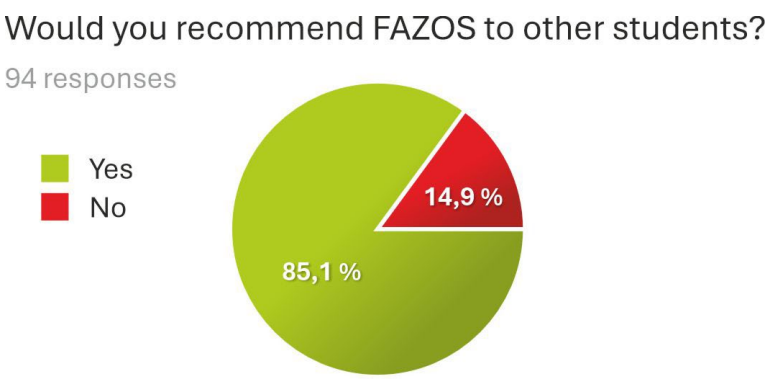


Figure 2.1. Example result from the survey of graduates

Assessment of the compatibility of the ECTS credits and the actual student workload is carried out by the Student service, Quality assurance office, heads of department, working groups of independent organisational units (including students), the vice-dean for education and quality management and the vice-dean for science and postgraduate studies. The Quality Assurance office conducts a survey among students on the actual workload on courses and the corresponding ECTS credits, and shares the obtained results with the working groups. The working groups analyse the student workload, including student obligations, elements of knowledge assessment for each course, and compare them with the amount of ECTS credits determined for each course. Teaching delivery plan are compared with the results of the student survey. Each working group prepares a report and submits it to the authorised vice-dean and to the Committee for quality assurance. Within three months after receiving the report, the Committee for quality assurance has to prepare recommendations and send them to the Dean, who, if necessary, decides on appropriate further steps. Based on the results of the last survey into the compatibility of the ECTS credits and the actual workload of students, changes were made in the organisation of professional practice at all University undergraduate and graduate studies. A detailed description of the changes undertaken in the procedure of professional practice organisation is contained in Chapter 2.3. There were inconsistencies between the number of ECTS and the student workload noticed in other courses as well, but it was decided that no major changes shall be undertaken in accordance with the Ordinance on evaluation of study programmes of Josip Juraj Strossmayer University of Osijek, since the Faculty is in the process of developing of new study programmes, the launch of which will lead to the cancellation of existing study programmes.

Surveying of employers is intended to include external stakeholders in the process of reviewing existing study programmes and drafting of new ones. The survey is conducted every third year with the aim of determining employers' satisfaction with the competencies of graduates, and special attention is paid to the opinion of employers on the acquired level of theoretical and practical knowledge of graduates. Obtained data is used to assess whether the learning outcomes fulfil the needs of the labour market and if amendments to the existing study programmes are required. The Quality assurance office conducts a survey of employers. After processing the data, the Quality assurance office submits the results to the vice-dean for education and quality management, who prepares a report within a three-month period for the Committee for quality assurance. The Committee then makes recommendations for amendments to the study programmes. Employers' opinion on study programmes delivered by the Faculty and their needs for qualified experts in the future are presented at the Faculty Council. Those data also serve as a basis for discussion on the initiation of new study programmes.

Monitoring the success at completion of studies is carried out continuously for each academic year with the aim of determining the percentage of students who drop out of studies, the average duration of studies, the number of students who succeed to complete their studies within the deadline, the number of students who complete their studies after the deadline, and the average grade achieved for their bachelor and master theses, as well as the grade point average achieved at postgraduate studies. The data are presented in the Analytic Supplement, Table 3.4. Analysis of the success related to completion of studies is presented at the Faculty Council session, while the entire report containing all results is available in the Quality assurance office.

Monitoring the employability of graduates is necessary for alignment of admission quotas with the real requirements for workforce in the labour market. The analysis is carried out once a year by the Quality assurance office and the Committee for quality assurance. Data on the number of

graduates are collected from the Student service and compared with data obtained from the Croatian Employment Service - CES for the areas of the Osijek-Baranja County, Vukovar-Srijem County, Brod-Posavina County, Požega-Slavonia County and Virovitica-Podravina County. The obtained data refer to: the number of students graduating from the Faculty, the number of graduates registering with CES as unemployed in the mentioned five Croatian counties, the number graduates who got employed, and (if possible) the data on employers' sector (agriculture, industry, administration, etc.). The data referring to students graduating from the Faculty and registering as unemployed with CES in the past three years are presented in the Analytic Supplement, Table 3.6.

All amendments made to study programmes on the basis of above-mentioned procedures are recorded in the teaching delivery plan and published at the Faculty website. Based on the conducted surveys, there was a need detected to change the learning outcomes of the existing study programmes and align ECTS credits with the actual student workload, but the determined changes were not fully implemented due to the fact that the Faculty started developing new study programmes, which shall replace the existing study programmes. The only amendment that was made on the basis of the previously mentioned surveys is the improved model of professional practice organisation, which was observed as the biggest shortcoming in study programmes. The process of amending the professional practice is described in detail in Chapter 2.3.

Development of new study programmes is a responsibility of the Dean, vice-dean for education and quality management, vice-dean for science and postgraduate studies and heads of department. A high-quality study programme is based on the latest scientific findings. The knowledge and competencies that students acquire within each study programme have to meet the needs of the labour market. When creating new study programmes, it is necessary to collect as much data as possible (based on the previously mentioned procedures) from employers and alumni, and to process scientific knowledge related to the study program subject areas. The procedure of creating a new study programme is the following:

- The Faculty Council appoints the Committee for development of new study programmes that consists of teachers, students, alumni and employers)
- teachers, students, employers and graduates are surveyed in order to obtain data on existing study programmes and the needs of the labour market
- based on the analysis of the obtained data, the Committee prepares a proposal of the new study programme
- a proposal of the new study programme is delivered to the Committee for teaching, or the Committee for the doctoral degree award, or to the Committee for postgraduate specialist studies
- Specific Committee adopts the proposal of new study programme and presents it to the Faculty Council
- Once adopted at the session of the Faculty Council, the study programme is submitted to a further procedure as determined by the law (as of the Ordinance on evaluation of study programmes of Josip Juraj Strossmayer University of Osijek).

The Faculty is currently in the process of developing new study programmes. The process of development of new study programmes started after having analysed surveys of teachers, students and employers (presentation of the survey results was held at the Faculty Council session). The Faculty Council appointed the Committee for development of new undergraduate study programmes of the Faculty of Agrobiotechnical Sciences Osijek, as well as the Committee for development of new graduate study programmes of the Faculty of Agrobiotechnical Sciences

Osijek (Decision of the Faculty Council). Those Committees prepared proposals on the structure and names of the study programmes, which were adopted by the Faculty Council. Following the above-mentioned decision, there are six university undergraduate and six university graduate studies currently developed (Table 2.2). While defining the name and content of the study programmes, attention was given to the modernity of the proposed programmes, so that the proposed study programmes comprise the latest scientific knowledge and trends in Biotechnical sciences, and meet the needs of the labour market.

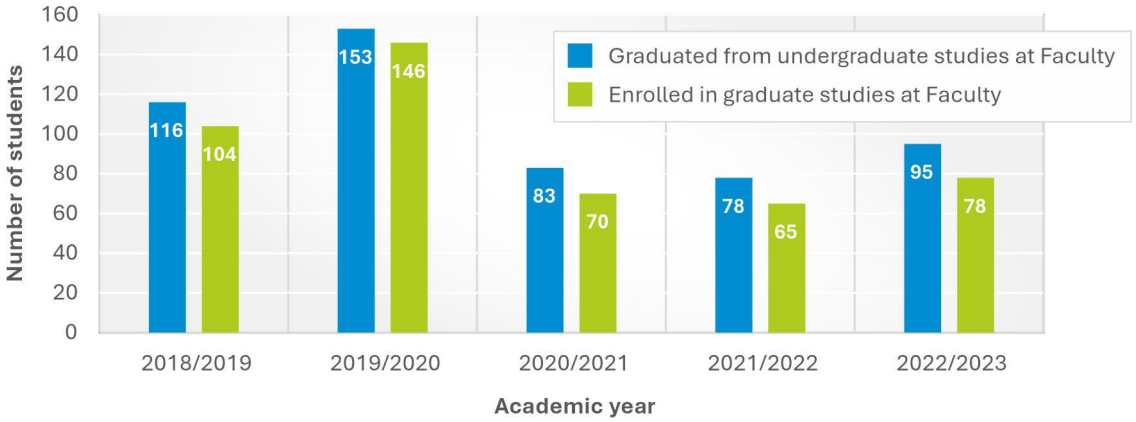
Table 2.2. List of proposed university undergraduate and graduate study programmes

University undergraduate study programmes	University graduate study programmes
Innovative Crop Production Systems	Plant Production And Biotechnology
Innovative Animal Production Systems	Animal Production And Biotechnology
Horticulture and Perennial Plantations	Horticulture and Enology
Agricultural Technology and Precision Agriculture	Agricultural Technology and Renewable Energy Sources
Agribusiness and Rural Entrepreneurship	Agricultural Management
Management of Bioresources and Food Production	Phytomedicine and Agroecosystem Conservation

After obtaining licences for the new study programmes, the existing study programmes of the Faculty will be deleted from the Register of study programmes.

The University graduate study programme Digital Agriculture is the only study programme that will be retained once the new study programmes are introduced, so it will not be put into a dormant status. Digital Agriculture is an innovative study programme, which develops specific knowledge and skills in the field of Agriculture, and puts a strong emphasis on development of digital competencies of students, thus educating agronomists for the 21st century. It is predicted that an agronomist of the 21st century shall be an analyst, advisor, consultant, drone operator, an expert in precision agriculture, decision maker, and for all those roles application of digital technologies is indispensable. The study programme based on the use of digital technologies in agriculture should continue to be implemented and constantly adjusted to the needs of the labour market.

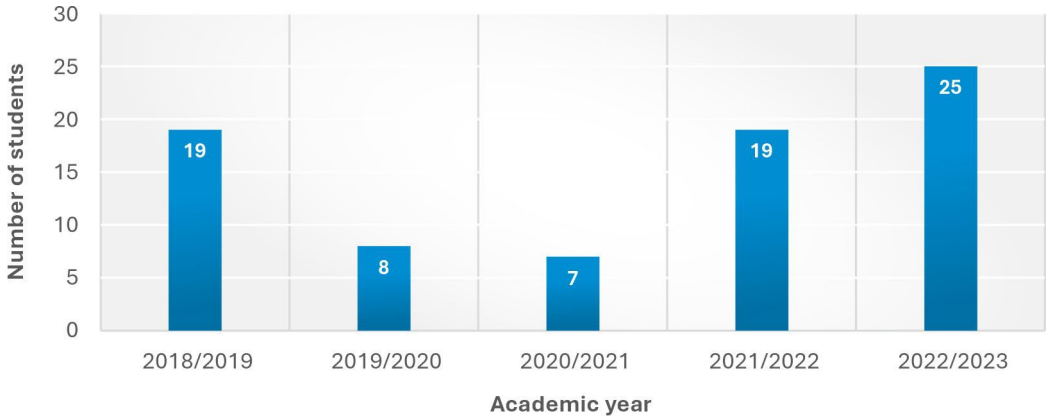
The existing study programmes, as well as the new study programmes that are currently being developed, are completely aligned with the Bologna process, which means that they are carried out on three educational levels, and comply with ECTS. Learning outcomes are defined at the level of courses and study programmes, the quality assurance system is functional, new academic titles and professional titles are awarded, and diplomas and diploma supplements are introduced. Such a way of study programme delivery facilitates vertical and horizontal student mobility. As already mentioned in chapter 2.1, the vertical mobility of students at the Faculty is high. In the past five-year period, almost 87% of students who completed our university undergraduate studies continued with studying at one of our university graduate studies (Graph 2.1.).



Graph 2.1. Number of students who continued studying at the graduate studies upon having completed the Faculty's undergraduate studies

Furthermore, when considering the total number of students enrolled in the 1st year of university graduate studies in the previous five-year period, an average of 57% of enrolled students completed the Faculty's university undergraduate studies. Such information indicates that approximately 40% of students that enrol in our graduate studies come from other faculties or from the Faculty's professional studies. This is proof that our study programmes are compatible with similar studies in the Republic of Croatia and the vertical mobility of students is facilitated. The average duration of studying at all study programmes is presented in the Analytic Supplement, Table 3.4. In the previous five-year period, the average duration of studying at undergraduate level was 3.32 years, while the average duration of studying at graduate level was 2.40 years. In the same period, from 2019 to 2023, the grade point average achieved at university undergraduate studies was 3.28, while at the graduate level, students completed their studies with GPA of 4.18.

The learning outcomes of study programmes are aligned with the EQF descriptors, thus facilitating horizontal student mobility. Horizontal mobility is usually realised within the ERASMUS+ and CEEPUS programmes. The Faculty has been continuously increasing the number of outgoing student mobility since the academic year 2020/2021 (Graph 2.2.). In the last five years, all students who gained ECTS credits during academic mobility or spent at least 75 hours in a professional practice programme abroad were granted recognition of their achievements, which encourages students to participate in exchange programmes. Horizontal mobility is also supported through the possibility of enrolling elective courses from other study programmes at the Faculty (elective courses of university undergraduate studies and joint list of elective courses for graduate studies) or choosing courses from the offer of the elective courses at the University, which are delivered by other University constituents. Mobility of students at university postgraduate studies is shown in Analytical supplement; Table 3.5.



Graph 2.2. Number of outgoing students in exchange programmes

In addition to all of the above stated, the student survey also collects data on students' satisfaction with the work of student support services, i.e. the work of the Student service, library and printing office. Students evaluate the equipment of laboratories, the quality of the website, IT equipment and computer classrooms as well as Library services. Report on the results of that survey is available here. The survey is conducted every year. A self-evaluation survey is conducted among non-teaching staff, within which support service staff and other non-teaching staff express their satisfaction with working conditions, and the results of the survey are available here.

2.3. Student practice is an integral part of study programmes, where applicable.

Student (professional) practice is an obligatory course planned within the University undergraduate study programme and all university graduate study programmes. Professional Practice I is an obligatory course with defined learning outcomes for each major of the University undergraduate study programme of Agriculture. Professional practice lasts for 75 hours, and upon successful completion students obtain 6 ECTS credits. Professional Practice II planned within the university graduate study programmes is also obligatory. Learning outcomes of Professional Practice II are specified for each study programme major. It also lasts for 75 hours, and also brings students 6 ECTS credits after its completion. Students at both levels, undergraduate and graduate, perform professional practice in the summer semester, after they finish with lectures, which is usually from 10 June to 15 July, and before the beginning of the next academic year, from 1-30 September. Students are divided into groups and involved in a 10-day practice with employers working in the field of agriculture. During the professional practice or at the end of the practice, students keep a professional practice diary and describe the work duties they perform with the employer. Upon completion of the professional practice, the students' mentor (who has to be an agronomist and have the appropriate qualification level) signs and certifies the professional practice diary. The signature or certification of the diary by the mentor is a confirmation that students have completed the practice and that they acquired necessary practical skills and intended learning outcomes. The student applies for the Professional practice exam and brings the professional practice diary to the course coordinator, who checks the diary and through a conversation with the student determines whether the student has acquired practical skills and learning outcomes, and confirms in the ISVU information system the fulfilment of the intended learning outcomes for the Professional Practice course.

In organising professional practice, the Faculty is responsible to inform all students about the basics of occupational safety. Students have to pass the Test on the basics of occupational safety for professional practice. Without passing this test, students are not allowed to participate in practice and cannot achieve the intended learning outcomes. The training in occupational safety is organised and conducted at the Faculty. In addition, all students have compulsory accident insurance.

During the academic years 2021/2022 and 2022/2023, student surveys examined students' satisfaction with professional practice. Surveys of employers with whom students performed professional practice were also conducted. The results of both surveys indicated the same deficiency, since both the students and the employers stated that there should be more hours of practice at both undergraduate and graduate levels of study, and that students should have more practical classes during their studies (Survey results).

Moreover, employers mentioned the challenges of organising student practice in tight schedules, which resulted in large groups of students doing practice in the same period, so it was difficult to introduce each student to the entire production process, but only with a part of the process that is carried out in that time period (10 days) when realising professional practice.

Furthermore, a survey conducted among graduates examined their satisfaction with the way of performing professional practice (Figure 2.2), within which it was determined that a third of the students (n = 94) rated their satisfaction with professional practice with the grade 3 (on a scale of 1 to 5), which meant that they were not dissatisfied, but not satisfied either, while almost 24% of students were not satisfied or were completely dissatisfied with the way professional practice was carried out.

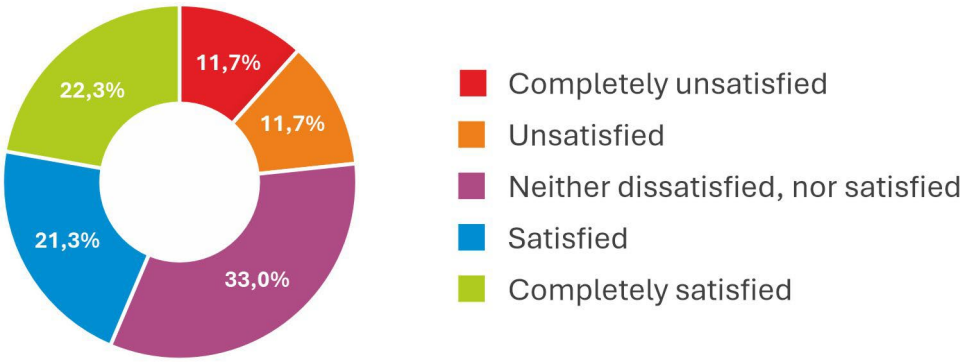


Figure 2.2. Satisfaction students with professional practice

Being aware of the importance of the structured and responsible realisation of professional practice, the authorised committees, the Dean and the vice-dean for education and quality management proposed amendments to professional practice and initiated a discussion at the Faculty Council, which reached a Decision on its session held on 1 February 2022. By that Decision, the schedules of professional practice were redefined, so the graduate students now perform professional practice during the entire 4th semester, from 01 March to 30 September. Furthermore, undergraduate students perform professional practice at companies and other legal entities dealing with agricultural activity in the Republic of Croatia, while graduate students perform professional practice in companies or in the Faculty laboratories and at the Experiment Station in Tenja. In order to facilitate organisation of professional practice and its quality, it was decided that students will perform practice in groups of three to five students, which is the optimal

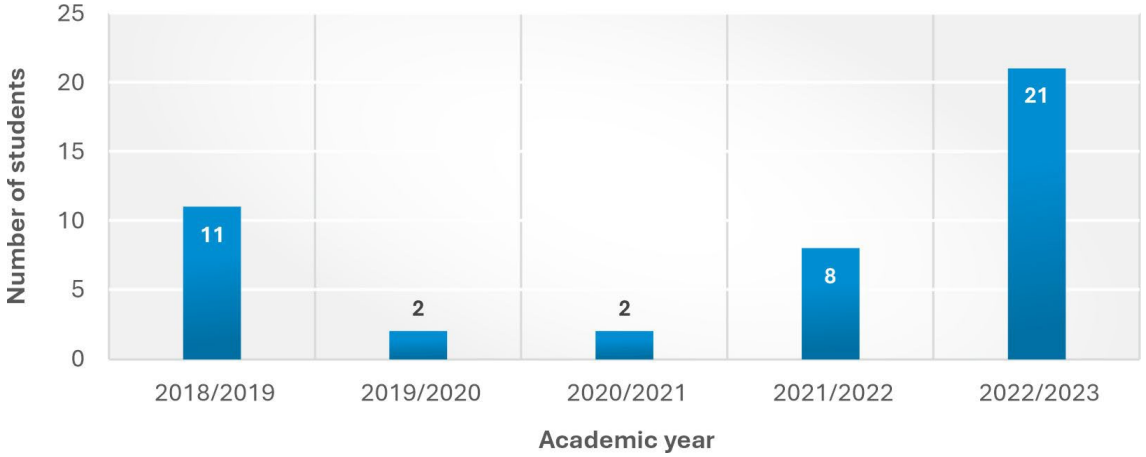
number according to the employers. The size of student groups participating in practice in the Faculty laboratories or at the Experiment Station in Tenja will be agreed with the professional practice coordinators, in accordance with the capacities of those Faculty facilities. The above-mentioned Decision entered into force on the day of its adoption, so as of 01 March 2022, the graduate students have been informed about the schedules of professional practice in laboratories or at the Experiment Station in Tenja. Students perform practice every day during the entire 4th semester, and students are obliged to attend it according to the schedule (schedule of practice at the Faculty). Undergraduate students perform practice in companies, on the basis of Referrals for professional practice. List of companies with which the Faculty cooperates to deliver professional practice to students is available HERE.

With the improvements in organisation of student professional practice, schedules of professional practice were updated to make its realisation more efficient, yet the discrepancy between the actual student workload and the corresponding ECTS credits is still not eliminated. At the end of the summer semester of the academic year 2021/2022, survey was an analysis of student satisfaction with the way of conducting professional practice was again carried out, and based on their experience, the experience of employers and the coordinator of professional practice at the Faculty, proposals were made for additional changes to professional practice.

In accordance with the proposal, the Faculty Council reached a decision on redistribution of ECTS credits and the organisation of professional practice. As of the analysis, it was determined that 6 ECTS credits are too many for 75 hours of professional practice, a proposal is adopted to introduce an additional professional practice course at the University undergraduate and graduate studies. The undergraduate students attend the course Professional Practice I-I in the 5th semester, and Professional practice I-II in the 6th semester lasting 75 hours, i.e. 10 days in each semester, each allocated with 3 ECTS credits. An additional course on Professional Practice is also introduced at the graduate level, so that graduate students perform professional practice in the 3rd semester (Professional practice II-I) and in the 4th semester (Professional practice II-II), lasting 75 hours (10 days) and upon completion of each course, they obtain 3 ECTS credits in each semester. In this way, the number of hours for professional practice is increased, thus solving one of the biggest shortcomings. Furthermore, practice is organised during the winter and summer semesters, so students attend professional practice one day a week. Students perform practice also in teaching bases, in companies and in the Faculty laboratories and at the Experiment stations. Coordinators of professional practice courses at undergraduate and graduate studies are appointed, Students are also assigned a mentor for professional practice that is an employee in a company or entity providing the practice, according to the Ordinance. Coordinators of professional practice courses and the vice-dean for education and quality management are in contact with mentors to provide support during the practice realisation. As the described amendments to professional practice courses have been implemented at the beginning of the academic year 2023/2024, the data are not included in this Self-evaluation report, yet they are explained to prove the faculty's dedication towards constant improvement of quality of professional practice organised for students. Such a model of professional practice organisation, as well as the rights and obligations of all stakeholders involved in the process are described in the Ordinance on professional practice, which entered into force also in the academic year 2023/2024.

The process for monitoring and improving the quality of student practice is clearly defined, and it is continuously implemented. It involves internal and external stakeholders, and data obtained through surveys are used as a basis for undertaking improvement measures, as proved by the above-described process of amending the delivery of professional practice for students.

Besides regular professional practice organised for students in companies in the Republic of Croatia and in the Faculty laboratories and experiment stations, students are also offered a possibility to perform professional practice abroad, usually within the ERASMUS+ and CEEPUS programmes. Student mentors, study year coordinators and student tutors inform students on available professional practices abroad, and the Office for international cooperation and projects provides support to students in preparation of all phases of mobility for the purpose of realising professional practice abroad. The number of students who have completed their professional practice abroad is continuously growing (Graph 2.3).



Graph 2.3. Number of students who completed professional practice abroad

In order to promote significance of practice among students and to involve them in the Faculty's projects, there is a plan to engage students, either individually or in groups supervised by a mentor or of a teacher, in the Biotechnical Scientific Research Centre and at the Faculty's experimental station (Development Strategy of the Faculty of Agrobiotechnical Sciences Osijek 2023/2024 – 2027/2028).

2.4. Quality assurance of lifelong learning programs is part of the internal quality assurance system of the higher education institution. This ensures that study programmes are relevant and up to date and that they meet the current social needs.

One of the overall aims stated in the Development Strategy of the Faculty of Agrobiotechnical Sciences Osijek 2018/2019 – 2022/2023 refers to the increase of the Faculty's attractiveness and quality of studies through the Measure 1.6 Organisation of lifelong learning programmes. Organisation of lifelong learning programmes is envisaged by the Development Strategy of the Faculty of Agrobiotechnical Sciences and finds its basis in the Faculty's mission, which states: „Mission of the Faculty of Agrobiotechnical Sciences Osijek is focused on assuring sustainable development through providing high-quality education based on modern learning outcomes and on lifelong learning concept, as well as on the training of highly qualified experts.“ The Faculty recognises the importance of strategic planning in development of lifelong learning programmes, so it established the Centre for Lifelong Learning and appointed the Programme Council of the

Centre for Lifelong Learning, which manages activities related to planning, developing and delivering the lifelong learning programmes.

The role and scope of work of the Centre for Lifelong Learning, as well as its processes applied to the development of new and improvement of existing lifelong learning programmes are defined in the Ordinance on work regulations of the Centre for Lifelong Learning. In accordance with the Ordinance, each new lifelong learning programme undergoes a review process. If a lifelong learning programme proposal contains all formal elements, the Committee initiates the review process. The review is carried out on the defined review sheet, by which indicators of the quality and feasibility of the programme are evaluated. After a positive review, the Committee submits the proposal to the Faculty Council for adoption, which approves it and requests further approval of the University Senate.

The topics of lifelong learning programmes are tailored to meet the needs of current economic and social trends. By analysing the categories of programmes supported by the Croatian Employment Service within its Voucher programme, emphasis is put on lifelong learning programmes dealing with digital and green topics. All lifelong learning programmes offered by the Faculty fit into the category of green skills, i.e. green programmes, and all are fulfilling current economic and social requirements for such competencies. In the previous five-year period, from 2019 to 2023, the Faculty delivered the lifelong learning programmes listed in Table 2.3.

Table 2.3. Number of candidates in lifelong learning programmes in the period 2019-2023

Lifelong learning programme	2019	2020	2021	2022	2023
Training of classifiers of animal carcasses on a slaughter line	3	5	-	21	5
Basics of plant protection	5	8	4	7	-
Plant Protection	3	5	1	3	-
Basic training course for coordinators of stations for inspection of technical systems in plant protection	-	5	5	2	-
Advanced training course for coordinators of stations for inspection of technical systems in plant protection	-	5	9	-	-
Training for safe handling and correct application of pesticides	39	1476	665	183	172
Management of projects for rural development	-	-	-	15	-

Number of candidates attending the lifelong learning programmes (Table 2.3.) differs among individual years, which depends on the requirements of the labour market, and on the amendments to the Labour Act that stipulates necessary qualifications and additional qualifications for specific jobs. For example, both Basic and Advanced training courses for coordinators of stations for inspection of technical systems in plant protection are carried out continuously. The Training for safe handling and correct application of pesticides is carried out in accordance with the Act on the Sustainable Use of Pesticides (OG 46/22). The Act incorporates provisions of the Directive 2009/128/EC of the European Parliament and the Council of 21 October 2009 referring to the establishing of the framework for achieving sustainable use of pesticides. In accordance with the Act, the Faculty offers a training course for employees of examination centres and checks whether legal entities and natural persons possess necessary equipment and fulfil standards for performing regular inspections before submitting an application for authorisation of the examination centre.

According to the same Act (OG 46/22), all persons who work with plant protection products, professional users, distributors and advisers have to be trained for the safe handling and correct application of pesticides and have to comply with regulations that refer to training for the safe handling and correct application of pesticides with respect to their different roles, jobs, duties and responsibilities. In order to be able to perform the above-mentioned jobs, persons have to obtain an appropriate professional qualification and be trained in plant protection. Since many professionals have been employed for many years in the workplaces covered by this Act (OG 46/22, 32/20, 115/18, and 14/14), but have not completed the prescribed training course in plant protection, there has been a need to offer to them a lifelong learning programmes in Basics of plant protection and Plant Protection, which cover the mentioned areas of training. Lifelong learning programmes attended by those participants so that they can obtain a certificate to continue to perform their jobs related to plant protection.

Requirements by the labour market for lifelong learning programmes are continuously monitored, and calls for admission of candidates to lifelong learning programmes are announced by the Faculty as necessary. Before the call for admission is announced, the Faculty publishes an invitation for the expression of interest on the Faculty's social networks and portals, on the basis of which data on potential candidates interested in a particular lifelong learning programme is collected. After that, calls for admission are announced only for those lifelong learning programmes for which the interest has been expressed. Calls for admission clearly state the name of the lifelong learning programme, admission requirements, fee, programme duration and the number of ECTS credits that a candidate acquires upon successful completion of the programme. An example of a call for admission is available HERE. Calls for admission to lifelong learning programmes are published on the Faculty's website.

In order to ensure the appropriate level of quality of lifelong learning programmes, candidates fill out a survey on their satisfaction with the completed programme. On average, 80% of candidates are very satisfied with the programme they attended. Also, candidates express satisfaction with the teaching methods, the level of acquired knowledge and the improvement of their professional skills. An example of a survey is available HERE.

Some lifelong learning programmes have been cancelled by the Faculty Council. Such decision was reached on the basis of data collected in the surveys, discussions with the Committee for cooperation with the economy sector and innovations, discussions with representatives of professional associations and employers, and by following the recommendation of the Expert Panel from the previous cycle of re-accreditation on the suspension of programmes in which no candidates were admitted.

For all lifelong learning programmes that are offered by the Faculty, there are learning outcomes defined (Analytic Supplement, Table 2.1). So far, the Faculty has created one partial qualification, which is entered in the CroQF register under the name Assistant manager in organic poultry production.

III. Student-centred learning and teaching – the teaching process and student support

3.1. Learning and teaching are student-centred and ensure that all the intended learning outcomes are achieved.

The study programmes and majors delivered by the Faculty are devised to ensure the acquisition of the necessary level of general and specific knowledge and skills in a certain area of agricultural activity. Acquisition of the knowledge and skills is facilitated through teaching delivery and creative education, within which each major and/or course have their own specifics in the mode of delivery and engagement of students in the teaching process. Accordingly, the overall objective of study programmes is to provide students with academic education of the highest standard based on the latest scientific findings and knowledge in agriculture, and the skills necessary for scientifically based problem solving and the development of new technologies in the field of agriculture. The specific objectives of the study programmes and other important information are presented in the content of courses and in learning outcomes of each course. Each of the courses contains a detailed overview of objectives, content, learning outcomes, assessment methods, and teaching methods, as well as a list of obligatory and additional reading materials, teaching units, elements of monitoring of students' performance and knowledge assessment. Teaching is conducted in the form of audio-visual and field lectures, seminars and practices that are conducted in audio-visual and laboratory form, depending on the course learning outcomes. In order to successfully deliver all forms of teaching, the Faculty disposes of necessary resources, which are described in the last chapter. It additionally provides necessary financial resources for the purchase of laboratory material and chemicals for the purpose of conducting laboratory practices and achieving all learning outcomes within individual courses. Study programmes and courses are designed to motivate students to actively participate in the teaching process, which is achieved by using modern teaching tools and pedagogical methods, such as quizzes to assess acquired knowledge in a particular teaching unit, presentations, projects and business plans.

Furthermore, for all courses of all study programmes and majors, the Faculty Council approves teaching delivery plan and syllabi for each academic year. Teaching delivery plan contain information about course names, the names of course teachers, associates, methods of teaching (lectures, seminars, field classes, audio-visual practices and laboratory practices) and the number of ECTS credits. All information about each study programme and major is available to students at the Faculty website. At the first introductory lecture, teachers are obliged to inform students about the content of each course and all conditions of attending the course, as well as on the methods of evaluation and assessment. During May of the current academic year, teachers propose amendments to the courses to become effective in the following academic year, by taking ECTS credits and learning outcomes into account. The proposed amendments to the courses are

discussed at the Faculty Council session and a decision is made on their approval. The Faculty Council can make decisions on minor amendments to the teaching delivery plan, such as changes of course teachers, associates, distribution of teaching hours between teachers, and lists of reading materials. All other amendments are subject to the procedure determined by the Ordinance on evaluation of study programmes of Josip Juraj Strossmayer University of Osijek.

Student engagement into the teaching process is also encouraged through the system of students' performance assessment and grading, since student engagement is one of the elements of monitoring student success within courses. In the majority of courses, seminar paper is a mandatory part of the teaching content, and students prepare it independently or in groups, and then present it in front of other students and the teacher. The seminar paper is evaluated by the teacher, and in some cases, the decision on the grade is made together with other students, who evaluate each other's presentation skills and the content of their colleagues' presentations. In this way, students actively participate not only in the teaching process but also in the evaluation process through reflection and self-reflection. Field teaching is part of the teaching content of many courses. Through this form of teaching, students acquire practical knowledge and skills in specific areas. For realisation of field teaching, the Faculty disposes of six vans (54 seats in total). The costs of field teaching are financed from the Faculty's own resources, and field classes are organised several times a year. Audio-visual and laboratory practices are performed in well-equipped premises of the Faculty, at the address Ulica Vladimira Preloga 1, in Osijek. Courses that require computer software and digital tools are delivered in modern computer classrooms. Moreover, the Faculty disposes of many teaching models and posters, which facilitate the teaching process and allow students to learn on 2D and 3D visualisation of certain physiological and biochemical processes in plants, parts of the muscular and skeletal system in animals, etc.

Professional practice is an integral part of all study programmes and majors. Professional practice is realised at the Faculty's experiment stations, and in companies on the basis of signed cooperation agreements on the provision of professional practice, as well as at many family farms. It should be noted that the Faculty significantly strengthened its cooperation with the real sector in the previous period, and Professional practice can now be carried out in more companies than in the period from 2013 to 2018. Since 2011, the Faculty has been developing its own Experiment stations. In the Experiment stations, students are offered optimal conditions for acquiring practical knowledge and skills in agricultural production, all according to the highest academic standards. During the previous period, i.e. in the last 5 years, the Faculty's experiment stations have been equipped with modern machinery. At present, there are two agricultural tractors, one tractor for orchards and one for vineyards, and all machines used in preparation, sowing, planting, crop protection and harvesting. Students have the opportunity to participate in the technological production process of agricultural crops and to work with the modern equipment and apply the latest technological achievements in agriculture (hail protection system in two orchards, irrigation, GPS in tillage and sowing, mapping and recording with drones, etc.). In addition to the commercial production of crops, vegetables, industrial plants and fruits, as well as vines and beekeeping, numerous scientific researches and projects are carried out at the Faculty's experiment stations. Those projects are also involving students, within which they prepare their bachelor or master theses or perform professional practice. Furthermore, during the previous period, at its Experiment stations, the Faculty engaged students of Horticulture in production of certain products (spice mix, seedlings of spices and vegetables, etc.). In this way, students participated in the entire production process, as well as in sales, which further encouraged them to achieve all intended learning outcomes and to acquire professional and practical knowledge.

Additional motivation for and engagement of students in professional and scientific activities are achieved through organisation of various events, such as forums, workshops, lectures, competitions. Such events are organised by teachers in cooperation with student associations and the Faculty Student Union.

In addition to the mentioned teaching methods, all teachers use the e-learning system Merlin. Introduction of e-courses, i.e. e-learning model through the available distance learning systems was one of the strategic objectives of the Faculty's Development Strategy 2018/2019-2022/2023. The Merlin e-learning system enables teachers, students and higher education institutions to organise online teaching by using e-learning technologies. Merlin is based on the Moodle open source system, which was adapted for end users by the University Computing Centre - SRCE e-Learning Centre. Today it is one of the most advanced systems for e-learning. The Merlin virtual e-learning environment consists of Merlin e-learning, webinar platform and e-portfolio system, which are connected with ISVU - Information System of Higher Education Institutions. Merlin enables online lectures and exams and other distance learning methods in case of a need or when such e-learning is planned by the course content itself. Also, all students who are absent because of studying abroad or cannot attend lectures because of some reasons specific to non-traditional student population, can access all teaching materials and literature through the Merlin system and prepare successfully for exams, thus achieving intended learning outcomes. Although all teachers use the Merlin system to communicate with students and all are trained for distance teaching, they deliver all courses and study programmes on site, i.e. by physical contact with students, as determined by the licences for conducting of studies. During the COVID-19 pandemic, lectures were held during the summer semester of the academic year 2019/2020 in an online mode, and the exams were organised both in person and online, depending on the occasion. In order to encourage different ways of teaching and to improve the quality of the teaching process, teachers participate in workshops for improvement of their teaching skills and on usage of modern teaching methods in accordance with pedagogical standards. Such workshops are organised by the Quality assurance office. Furthermore, the QA Office cooperates with the University Quality Assurance Centre (the University Centre for Advancement of Quality Assurance in Higher Education of Josip Juraj Strossmayer University of Osijek) on the implementation of the Unified University Student Survey, within which teachers' performance and the quality of teaching at all studies and courses at the University are evaluated. The Quality assurance office presents results of the survey to the Faculty Council. The analysis of the student survey shows the most important praises and complaints of students related to the quality of the teaching process. By considering students' comments, the QA Office proposes improvements to the teaching process and, if necessary, organises additional workshops for teachers to improve the quality of the teaching process and teaching skills.

Within the process of self-evaluation, teachers fill out a survey for teachers, which is created by the Quality assurance office. The survey aims to evaluate the methodical nature of teaching, usage of modern technical and technological achievements and tools in the teaching process, the use of modern teaching aids, and the updating of obligatory and optional readings. The results of the survey are taken as a good indicator of the current situation and are further considered in the definition of measures to improve the quality of teaching.

All teachers offer consultations to students at least once a week, during which they additionally explain to students the course contents, obligations and tasks that students need to complete during the semester within one course.

For part-time students, older students and students from underrepresented and vulnerable groups, the schedule and method of delivering lectures and consultations have been adapted through a personalised approach, based on data on students from underrepresented and vulnerable groups shared by the Office for students and study programmes. For example, classes and consultations for part-time and employed students are organised on Friday afternoons and Saturdays. The Student service also works on Saturdays from 8 a.m. to 1 p.m., but only on certain dates, about which part-time students are informed in advance. Contacts of all teachers are available on the Faculty website, and students can contact teachers via e-mail or in the Merlin system. Consultations and lectures can be arranged online through the Merlin system or platforms, such as Zoom, Microsoft Teams, Google Meet, all of which are used by the teachers. All courses of all study programmes and majors are available in the Merlin system, and certain activities are regularly carried out through this system. The e-learning was applied to full extent during the COVID-19 pandemic, and nowadays is also often used.

3.2. The assessment and evaluation are objective and consistent, and they ensure that all the intended learning outcomes are achieved.

As stated in the previous section, all courses within all study programmes and majors are described in detail in the predefined forms that contain information on the course objectives, content, learning outcomes, mandatory and optional literature, and teaching units, methods of teaching and evaluating students' performance, etc. Assessment of students' success at achieving of intended learning outcomes and other student achievements was regulated by the then valid Ordinance on study programmes and studying at Josip Juraj Strossmayer University of Osijek and the Ordinance on assessment of students' performance within the European Credit Transfer System (ECTS). Both regulations are still available to students on the Faculty's website. Also, the Faculty publishes all amended or supplemented ordinances or new regulations on its website immediately after they are adopted by the Faculty Council. All evaluation and assessment criteria and methods are clear and published before the start of teaching, so that students are familiarised with them.

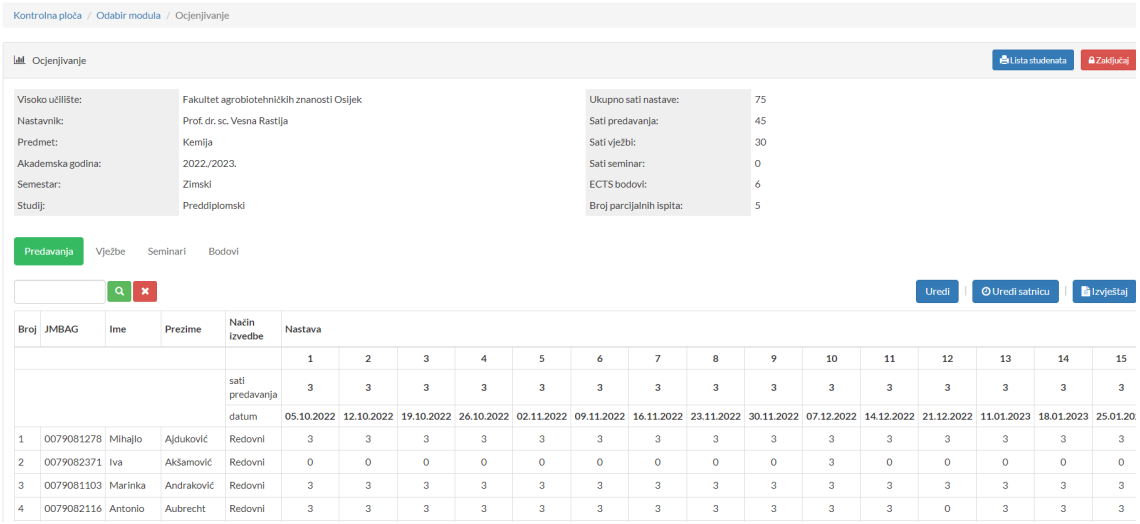
Furthermore, the Faculty determines the start of the academic year and of lectures, as well as schedules of regular and additional exam periods. The schedule of exams is published before the beginning of the academic year based on the decision of the University Senate and the Academic calendar for each academic year. All University constituents are obliged to adhere to the Academic calendar.

Based on the Academic calendar, the Faculty Council makes a decision on the schedule of exams for the next academic year. For each course, there are two regular exams in the winter, summer and autumn exam periods (six in total), and four additional exams (in November, January, April and May). All exam dates are entered in ISVU (Information System of Higher Education Institutions) and are visible to students in the Studomat application at the beginning of each academic year, as well as on the bulletin boards of each Department, or on the door of the teacher's offices. Students can access Studomat any time via internet browser on a computer or other mobile device or at an internet kiosk in the Faculty building placed next to the Office for students and study programmes. In addition to information on the exam schedules, in Studomat students register for exams or

withdraw registration, and request printouts of various certificates and documents related to their status and studying.

Performance of students in individual courses is monitored and assessed during lectures, at preliminary exams, as well as at final exams, in accordance with the study programme and course syllabi. The assessment procedure, as well as requirements that a student has to fulfil in order to receive positive assessment, are determined in the teaching delivery plan adopted by the Faculty Council, and published on the Faculty website. Students are evaluated on the basis of the European Credit Transfer System (ECTS), the national numerical grading system and percentage of success, which is regulated by the Ordinance on assessment of students' performance within the European Credit Transfer System (ECTS). Grading within the ECTS system is done by absolute or relative distribution according to the achieved final success. Assessment of performance of students with special needs and/or from underrepresented groups is adapted to individual special needs, as of provisions defined in the Ordinance on assessment of students' performance within the European Credit Transfer System (ECTS). Adjustments in lecture delivery, teaching materials and exams are processed separately, by using a personalised approach to each student and addressing their individual needs or challenges they are faced with during the studies. Based on student requests or by monitoring student achievements, the Faculty Committee for teaching makes decisions on studies, transfers, admission and, when necessary, prepares proposals for the Faculty Council in accordance with the legal statutory regulations. Furthermore, the course teacher holds an introductory lecture, during which students are given information on methods and procedures for assessment of acquired knowledge, skills and competencies. By monitoring student achievements and their success at fulfilling all obligations during studying, teachers are able to notice and recognise individual needs and specificities that students might have. It should be mentioned that the Faculty teachers were awarded high grades by the students within their evaluation in the Unified University Student Survey. Considering such good results, methods and models of student assessment at the Faculty of Agrobiotechnical Sciences are considered efficient. Impartiality, objectivity and reliability of assessment are achieved by making the results of written and oral exams public, in accordance with legal regulations. In the case of a student's dissatisfaction with the exam grade, he/she has a right to file a complaint within 48 hours after receiving the exam results, and he/she can request to take the exam in front of a teacher committee consisting of three members appointed by the Dean within 48 hours of receiving the appeal. The course teacher can attend the exam in front of the teacher's committee, but has no right to ask questions and evaluate the student, and no direct influence on questions asked or the outcome of the retaken exam.

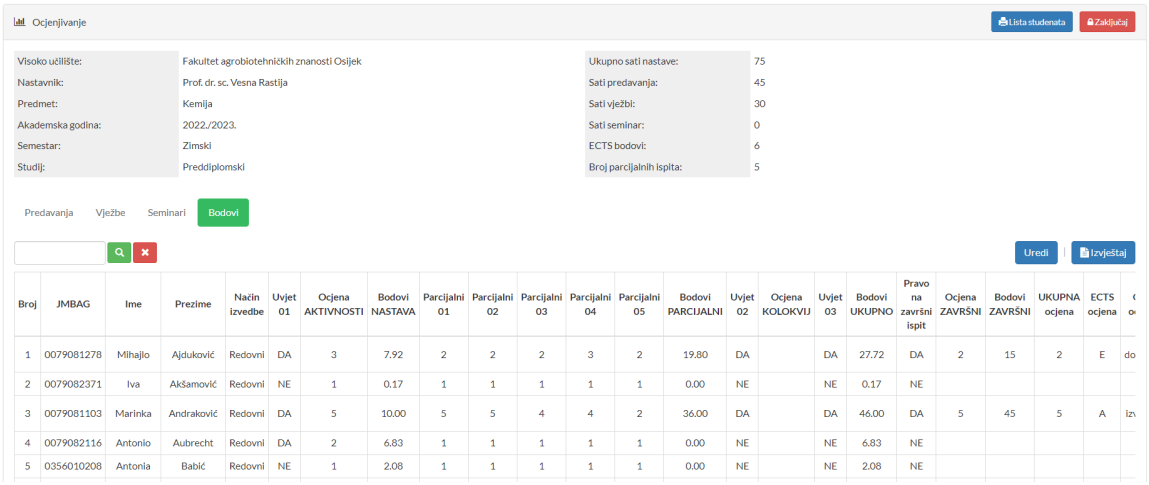
Alignment of evaluation and assessment criteria and methods with the learning outcomes is facilitated in the application for Student Assessment and Evaluation, in accordance with the mentioned Ordinance on assessment of students' performance. The application has been actively used since the academic year 2016/2017 (Figure 3.2.1.).



Broj	JMBAG	Ime	Prezime	Način izvedbe	Nastava														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
				sati predavanja	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
				datum	05.10.2022	12.10.2022	19.10.2022	26.10.2022	02.11.2022	09.11.2022	16.11.2022	23.11.2022	30.11.2022	07.12.2022	14.12.2022	21.12.2022	11.01.2023	18.01.2023	25.01.20
1	0079081278	Mihajlo	Ajduković	Redovni	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2	0079082371	Iva	Akšamović	Redovni	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
3	0079081103	Marinka	Andraković	Redovni	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	0079082116	Antonio	Aubrecht	Redovni	3	3	3	3	3	3	3	3	3	3	3	0	3	3	3

Figure 3.1. Interface of the application Student Assessment and Evaluation

At the beginning of the academic year, each course teacher enters the list of students attending the course from the Teachers' Portal to the Application, thus creating an accurate list of students attending each course. The application itself is used for electronic records of attendance at all forms of lectures, records of the passing of partial exams and seminars, that contribute to acquisition of learning outcomes, records on completion of study obligations, records of passing the final exam and final reports on class attendance at each course. The report on the course status can be generated and printed from that application, and the teacher is obliged to print out the final report on delivered lectures at the end each course or semester. Each student is finally graded based on activities and class attendance, partial exams, seminar papers and final exam grades. The final grade is generated by the application based on all parameters, in accordance with the Ordinance on assessment of students' performance. The grades of all activities are converted and summed up in the number of grade points. Each subject has a maximum of 100 grade points, of which 30 points are earned by class attendance and class activity, 40 points are earned by partial exams, and 30 points are earned by the final exam. A student must collect a minimum of 30 grade points in order to exercise the right to access the final exam (Figure 3.2.2.), which means that he must attend classes in the prescribed scope (minimum 70% of class hours) and collect the rest of the points by taking seminars and/or partial exams. In this way, students are strongly motivated to work and actively participate in the teaching process throughout the semester, and they are rewarded with grade points for their work and active participation.



Broj	JMBAG	Ime	Prezime	Način izvedbe	Uvjet 01	Ocjena AKTIVNOSTI	Bodovi NASTAVA	Parcijalni 01	Parcijalni 02	Parcijalni 03	Parcijalni 04	Parcijalni 05	Bodovi PARCIJALNI	Uvjet 02	Ocjena KOLOKVIJ	Uvjet 03	Bodovi UKUPNO	Pravo na završni ispit	Ocjena ZAVRŠNI	Bodovi ZAVRŠNI	UKUPNA ocjena	ECTS ocjena
1	0079081278	Mihajlo	Ajduković	Redovni	DA	3	7.92	2	2	2	3	2	19.80	DA		DA	27.72	DA	2	15	2	E
2	0079082371	Iva	Akšamović	Redovni	NE	1	0.17	1	1	1	1	1	0.00	NE		NE	0.17	NE				
3	0079081103	Marinka	Andraković	Redovni	DA	5	10.00	5	5	4	4	2	36.00	DA		DA	46.00	DA	5	45	5	A
4	0079082116	Antonio	Aubrecht	Redovni	DA	2	6.83	1	1	1	1	1	0.00	NE		NE	6.83	NE				
5	0356010208	Antonia	Babić	Redovni	NE	1	2.08	1	1	1	1	1	0.00	NE		NE	2.08	NE				

Figure 3.2. Interface of the system used for records of students' performance assessment and grading

Previous experience proved that a transparent assessment and evaluation system strongly motivates the best students to perform well, while it also supports less motivated students to put efforts into continuous studying. Teachers have access to the data related to courses, which they coordinate and teach and they are obliged to record all the data within the appropriate deadlines, usually no later than 7 days after a lecture or exam. In addition to course teachers, the coordinator for teaching appointed at the level of each Faculty Department has full insight into the records, for all courses delivered within all study programmes or majors that are assigned to that Department, while the vice-dean for education and quality management, the Dean and authorised staff of the Student service have access to all data. By granting such access rights, it is possible to control and verify the current state of implementation of each course, and status of realisation of seminars, preliminary and final exams, progress of studying and students' achievement of defined learning outcomes. Therefore, control of the teaching process and students' progress through studies and achievement of the intended learning outcomes is facilitated. Coordinator for teaching of the individual Department is in charge to control delivery of courses at first instance and, if significant deviations or irregularities in the teaching delivery and in assessments are noticed, the coordinator for teaching reports it to the vice-dean for education and quality management and to the Committee for teaching, which can propose to the Faculty Council the adoption of appropriate decisions aimed at more efficient achieving of the learning outcomes. Students are informed about the methods of assessment and evaluation of their performances at studies, and in case of any doubts, personal requests or any other problems, students can individually or in groups contact each course teacher. If the issue cannot be resolved with a course teacher, students have the right to use all other instruments to resolve their doubts and/or disputes by sending inquiries to the Student Union, to student representative in the Committee for teaching, to student representatives in the Faculty Council, to a study year coordinator, to the Committee for teaching or directly to the vice-dean for education and quality management. The Committee for teaching can adopt a proposal to be submitted to the Faculty Council, for example on extending the deadline for taking of partial exams (Faculty Council's Decision on taking of partial exams). Such a decision motivates students to pass exams and achieve learning outcomes that they failed to complete within regular exam periods in a current academic year. Therefore, partial achievement of the intended learning outcomes and thus the acquisition of an insufficient number of grade points cannot be transferred to the next academic year, as regulated by the above-mentioned ordinances.

As a part of the teaching delivery plan and a separate course, Professional practice is realised at the Faculty's Experiment stations, in companies, as agreed in agreements on professional practice delivery, as well as at family farms. Achievement of the learning outcomes and performance in professional practice are supervised by the Professional practice coordinator, who is obliged to inform students about the method and elements of monitoring and the evaluation of their performance. Students receive a referral for professional practice. Upon completion of the professional practice, students submit a written and certified report on the completed professional practice, on the basis of which the coordinator makes a decision on the successful achievement of the learning outcomes. Information on the realisation of professional practice is announced at the Faculty's website.

Students complete undergraduate and graduate studies by preparation and defence of bachelor and master theses. All procedures, rights and obligations of students, mentors, the scope of work of the Committee for assessment and defence of theses, and all other issues related to bachelor and master theses have been defined by regulations valid during the previous period, as well as by the new Ordinance on bachelor and master theses that entered into force in 2024.

According to all of the above stated, the Faculty applies a well-structured system of assessment and evaluation of student achievements, and records detailed information on the progress through the studies and the completion of studies at all study levels. The Committee for quality assurance additionally analyses and monitors all data and indicators, and submits regularly the reports to the Faculty Council. Those reports are a clear basis for making decisions about study programmes and about innovations to be introduced to the course content and teaching methods. Also, based on the Quality assurance manual, the Committee monitors all important student activities, it analyses them and decides on improvement measures. Since the system of students' evaluation and assessment and the quality assurance management system are considered successful, there were only a few complaints, and the Faculty did not undertake measures for system review.

The Faculty additionally motivates students to be successful during studies by rewarding them in different categories, as defined in the Ordinance on rewarding students' achievements. The Ordinance determines the criteria and method of rewarding students with the aim of encouraging them to achieve the best possible success in studies. The Faculty recognises students' success achieved during studies (Table 3.2.1.) by awarding two types of awards, i.e. the Award for the Best Student in a Generation and the Dean's Award, and three types of acknowledgements: Acknowledgement for successful studying, Acknowledgement for extracurricular activities, and Acknowledgement for excellent sports results.

Table 3.1. Awards and acknowledgements presented to students in the past five years

Ord. No.	Award / Acknowledgement	Academic year				
		2018/2019	2019/2020	2020/2021	2021/2022	2022/2023
1.	Dean's Award	4	4	2	1	2
2.	Award for the Best Student in a Generation	1	1	2	2	2
3.	Acknowledgement for successful studying	3	3	4	1	4
4.	Acknowledgement for extracurricular activities	3	3	3	1	1
5.	Acknowledgement for excellent sports results	2	2	2	2	2
	Total	**13**	**13**	**13**	**7**	**11**

The Quality assurance office and the Committee for quality assurance are dedicated to constant improvement of the teaching process and to strengthening of teachers' competencies by introducing new and changing existing teaching and assessment methods, as well as by optimising the system of students' performance assessment. Thus, there are workshops organised for all stakeholders involved in the teaching process. Details are described in chapter 1.3. In the period from April to June 2022, there were five methodological workshops organised for teachers about the application of pedagogical skills in the learning and teaching process and about creating new study programmes and defining learning outcomes. The workshops were delivered to 50 teachers by Kristina Škaler.

3.3. The requirements for student enrolment and progress, recognition and certification are clear, publicly available, and consistently applied.

Every year, the Faculty participates in the Fair of Josip Juraj Strossmayer University of Osijek, within which it presents its study programmes and promotes its teaching and scientific activities. The Fair is held every year in November or December, and its purpose is to inform prospective students about studies and admission procedure in the following academic year. Secondary school-leaving pupils, students and other interested individuals are also informed about achievements in science, research equipment, potential employment opportunities, accommodation conditions, student life and other aspects related to studying. Teachers and staff of the Office for students and study programmes, as well as students participate in the Fair.

It is previously stated that the Faculty informs its prospective students and first-year students about all phases of studying. The admission procedure and all phases of studying are determined by the University Ordinance on study programmes and studying. In short, the Faculty Council decides on the admission criteria for undergraduate and graduate studies for each academic year. The call for admission to studies is announced by Josip Juraj Strossmayer University of Osijek, as of the Act on Higher Education and Scientific Activity (OG 119/22). The call contains information on admission criteria and procedure, the admission quota, documents to be submitted for application and the deadlines for application to the call. The University constituents, including the Faculty of Agrobiotechnical Sciences Osijek, determine the selection procedure by obliging to respect the principles of inclusiveness and equality of all applicants regardless of race, skin colour, gender, language, religion, political or other belief, national or social origin, property, birth, social position, disability, sexual orientation and age. The University determines the admission criteria (success achieved at previous educational cycle, type of education completed, success at the classification or other exam, special knowledge, skills or abilities, etc.), based on which applicants are selected for admission. Foreign citizens are admitted to studies under the same conditions as Croatian citizens, but, in accordance with the decision of the state body or higher education institution, they may be required to pay partial or full tuition fee part or the full cost of the studies, while foreign citizens from outside the European Union pay up to three times higher tuition fee.

The application and admission process for undergraduate studies is carried out via the platform Postani student (Engl. Become a Student) of the National information system for applications to higher education institutions. In that database, the Faculty updates information on study programmes every year and specifies the level and subjects of the State Matura exams that are

required for admission to a specific study programme and major. Admission criteria are ensuring selection of candidates with appropriate prior knowledge, which is in line with requirements of the study programme.

Candidates who completed a four-year secondary school education before 2010, i.e. before the introduction of the State Matura exam, are not required to pass the State Matura exams for the purpose of becoming eligible to enrol in studies. They can enrol in the first year of undergraduate university studies as full-time students according to special conditions. Special conditions refer to grading procedure based on which a ranking list for enrolment is formed. The classification procedure consists of the evaluation of success achieved in secondary school and the evaluation of success achieved at the classification exam. All conditions for enrolment and the classification process, as well as all other information related to enrolment in undergraduate studies is published at the Faculty website.

Admission to graduate studies is determined within a call also published by the University. All criteria are published in a timely manner on the Faculty website. The call contains all information related to the admission process. Application for admission to graduate studies can be submitted by the candidates who have completed the following study programmes:

- appropriate undergraduate university study in the field of Biotechnical sciences with acquired 180 ECTS credits
- inappropriate undergraduate university study that is not in the field of Biotechnical sciences with acquired 180 ECTS credits, and with obligation to pass additional exams during studies,
- appropriate undergraduate professional study in the field of Biotechnical sciences with acquired 180 ECTS credits, in the field of Biotechnical sciences, and with obligation to pass additional exams during studies,
- appropriate specialist graduate professional study with acquired 120 ECTS credits in the field of Biotechnical sciences and with obligation to pass additional exams during studies.

Admission to university graduate study Digital Agriculture taught in English language can be requested by candidates who have completed:

- appropriate undergraduate university study (in the field of Biotechnical sciences) with acquired 180 ECTS credits,
- undergraduate university study in the field of Biotechnical sciences (area of Food technology, Forestry, Biotechnology and Nutrition),
- undergraduate university study with acquired 180 ECTS credits in the field of Natural sciences, area of Biology, in the field of Technical sciences, area of Computer science, and in the field of Social sciences, area of Economics, with obligation to pass additional exams during studies.

Before admitting students to graduate studies, a classification procedure is carried out, which consists of determining the ranking list of candidates based on the overall grade point average achieved at university/professional undergraduate studies. The classification procedure is based on:

1. evaluation of success at undergraduate university study, undergraduate professional study, i.e. at specialist graduate professional study (grade point average) and
2. complementarity with majors of the undergraduate university study in Agriculture of the Faculty of Agrobiotechnical Sciences Osijek.

The candidate receives points on the basis of complementarity with majors of the undergraduate university study in Agriculture, delivered by the Faculty of Agrobiotechnical Sciences Osijek and professional studies of the Faculty of Agrobiotechnical Sciences Osijek, as follows:

- a candidate who has completed undergraduate university study receives 50 points,
- a candidate who has completed professional study receives 35 points.

Total number of points awarded to a candidate represents the sum of points obtained for complementarity with majors of the undergraduate university study in Agriculture or professional studies of the Faculty of Agrobiotechnical Sciences Osijek and the grade point average achieved at the previous study level. Candidates are ranked based on the total number of points.

Classification procedure for admission to the university graduate study in Digital Agriculture is based on:

1. evaluation of success in undergraduate university studies (grade point average) and
2. field of completed undergraduate studies.

The total number of points awarded to a candidate refers to the product of the weighted average of all grades obtained during undergraduate studies and factors (depending on the field of study completed), as follows:

1. Biotechnical sciences: weighted average × 1
2. Natural sciences (biology): weighted average × 0.95
3. Technical sciences (computer science): weighted average × 0.95
4. Social sciences (economics): weighted average × 0.90.

Candidates are ranked based on the total number of points awarded.

For bachelors completed inappropriate undergraduate university studies not in the field Biotechnical sciences, the Committee for teaching reviews the application of the candidate and defines the possibility of enrolment with the obligation to pass additional exams. If a student is accepted to graduate studies, he/she is enrolled in the 1st year of graduate studies and the additional exams are determined. The obligation to take additional exams for candidates who have completed professional studies is determined for each major, and the list of additional courses is defined in advance.

Admission to university postgraduate studies is performed based on a public call in which the conditions and criteria that candidates should meet for doctoral study are specified and prescribed in Regulations on postgraduate university study programs. The Ordinance for postgraduate studies lists admission rules for university specialist studies.

In the academic year 2022/2023 there are a total of 1045 students enrolled at all study levels and the teacher/student ratio is 1:8, which is shown in the Analytical supplement; Table 1.a. and Table 3.1. The largest number of students are enrolled in university bachelor studies, followed by a university graduate study, and finally a doctoral study. The largest number of part-time students is enrolled in Faculty university graduate studies (Analytical supplement; Table 3.1.) which is probably due to the enrollment of employed and/or more elderly students compared to bachelor study.

Admission policy, procedure and classification exams are in line with the mission and Development strategy of the Faculty of Agrobiotechnical Sciences Osijek, and all capacities and the field of scientific and professional work of the Faculty are taken into account.

The faculty encourages mobility of students within well-developed cooperation framework with international partner universities. The established agreements on cooperation refer to the exchange of students, as well as staff. Students can participate in academic mobility through various mobility programmes that are coordinated by the Office for international cooperation and projects. All calls, regulations and application deadlines for student mobility are published on the University's website, and the Faculty shares the information via the Faculty website. Academic mobility is also realised within bilateral and multilateral agreements on cooperation of Josip Juraj Strossmayer University of Osijek, as well as within the Faculty-level agreements closed with foreign partner universities and through international projects. More about student mobility, offers for exchanges and support provided to students interested in international mobility is presented in Chapter 3.5.

For students participating in international mobility within which they acquire certain learning outcomes and/or complete sets of teaching content at foreign higher education institutions, the Faculty ensures all rights for continuing and completing the enrolled studies. All courses that students pass at foreign universities are recognised by the Faculty on the basis of certified transcripts of records and previously signed Learning Agreements between the Faculty and a foreign partner university. The Committee for recognition of student mobility programmes verifies the compatibility of the Faculty's courses with the courses selected at foreign universities and determines the number of ECTS credits and grades acquired during academic mobility abroad. The University carries out the academic recognition of diplomas based on the Act on the Recognition and Assessment of Foreign Educational Qualifications (OG 69/22), which refers to recognition of a foreign higher education qualification and the recognition of the previous periods of study completed at a foreign higher education institution for the purpose of continuing education in the Republic of Croatia. Such recognition is carried out by a higher education institution in the Republic of Croatia where a candidate wishes to continue higher education. The recognition procedure is aligned with the Lisbon Recognition Convention and all other regulations published by the University Centre for Advancement of Quality Assurance in Higher Education, which cooperates with the National ENIC/NARIC office.

After admitting students to the undergraduate and graduate studies, the Faculty monitors their progress during studies, by applying instruments as previously described, and the criteria for progress through the studies are clearly defined and announced in advance, as determined by the Ordinance. Enrolment in higher years of study is carried out via Studomat with the help provided by the Student service, and the conditions and instructions for enrolment in higher years of study are published in advance on bulletin boards and the website.

In cases of some justified reasons (health issues, employment, etc.), when students are experiencing difficulties with progressing through the studies, they have the option to request the activation of the dormant status. In the application, the student states the reasons for such a request and submits evidence on the reasons for difficulties in progressing through the study. The Student service receives such requests and forwards them to the Committee for teaching, which reviews them and informs students about the status of the requests. Students are informed about their rights and support provided by the Faculty in overcoming difficulties in studying. All information is available in the Student Service, as well as in the Student Union of the Faculty, which is a representative body of students for protection of the interests of students. The Student Union participates in decision-making in higher education institutions and represents students in the higher education system. The Faculty’s Student Union participates in the quality assurance process of study programmes, protects and promotes the interests of students, helps student associations and encourages cooperation with other organisations focused on student interests.

As already mentioned, the Quality Assurance Office established at the Faculty deals with all tasks related to the management and advancement of quality in higher education. In fulfilling of those tasks, the QA Office closely cooperates with the University Centre for Advancement of Quality Assurance in Higher Education. The Committee for quality assurance develops an action plan for each academic year, which is approved by the Faculty Council. Establishment and continuous development of the quality assurance system and its improvement resulted in publication of the Quality assurance manual, which defines activities and procedures for improvement and assurance of quality in higher education. Those activities refer to continuous monitoring of various quality indicators and the creation of mechanisms and procedures for their evaluation and improvement. The main goal is to familiarise teachers, students, members of the Board, employees and other stakeholders with the quality assurance system, and to encourage better understanding and involvement in the system. For the teaching process, the action plan envisages the collection and analysis of data about the attractiveness of study programmes, successful completion of studies, number of students enrolled in higher year of studies, and analysis of success at exams. The Student Service and the Quality Assurance Office are responsible for data collection, and the analysis of the collected data is performed by the Committee for quality assurance as well as by the vice-dean for education and quality management. The deadlines for data collection are also clearly defined. Based on the collected data, the Committee for quality assurance prepares a report, i.e. presentation on the results and presents it at the Faculty Council for adoption. Workshops and other activities are organised for teachers, within whose courses students achieve low exam pass rate. All rules and procedures are defined in the Ordinance on quality assurance system.

Referring to the last re-accreditation in 2019, the recommendation of the Expert Panel stated that student motivation should be assessed before and after enrolling in the first year of study due to the low motivation of students for studying, i.e. large drop-out rate. Unfortunately, during the previous period, a rather high percentage of drop-outs was recorded, which is indicated in Table 3.4. of the Analytic Supplement. As recommended, the Faculty carried out a *Survey on satisfaction with studying at the Faculty of Agrobiotechnical Sciences Osijek,* in which all students took part. There was also a survey carried out for *freshmen,* which surveyed only first-year undergraduate students. Prospective students, i.e. high-school-leaving pupils took part in the *Questionnaire on students' motivation to continue their education in the biotechnical sciences at the Faculty of Agrobiotechnical Sciences Osijek*. The first two surveys showed that drop-out was not caused by the poor quality or unattractiveness of the study programmes, but it was mainly caused by various personal reasons. Also, based on the recommendation of the Expert Panel, the Student tutor system is introduced, which provides better support to students and contributes to a higher rate of study completion, which is described in detail in Chapter 3.4.

The first Annual Report of the Faculty of Agriculture was published in 2022, and since then it has been published annually. The annual report contains all information about the work and achievements of the Faculty during the previous academic year. The Annual Report contains data on the success of studies, on awarded students, the number of graduates and other student activities. The data on study completion and the method of their analysis are presented in Chapter II of this Self-evaluation report. Furthermore, the vice-dean for education and quality management prepares a report for each academic year and all study programmes and majors on the number of students applying for admission in the first year of studies, the number of admitted students and the number of students who selected study programmes of the Faculty as their first choice, and submits such reports to the Faculty Council. The Committee for quality assurance analyses the structure of enrolled students according to gender, county they come from, previously completed

education (as of secondary schools) and their success. These data are also compared with previous academic years. Data on the total number of students enrolled in individual undergraduate and graduate studies are given, as well as data on the number of students by study year. Furthermore, the success that students achieve in studying at all courses, and the number of successfully defended bachelor and master theses are shown. Continuous monitoring and analysis of the data provides an insight into the interest of students into study at the Faculty's study programmes, which is the basis for deciding on all future measures to be undertaken in development of new study programmes or amendments to existing study programmes.

After completion of studies and successful defence of either bachelor, master, specialist and/or doctoral thesis students are awarded a diploma and diploma supplement to confirm their acquired qualification, achieved competencies and the level, content and status of the study programme they completed. The diploma confirms that the student has completed a specific study programme and obtained an academic title. The diploma contains information about the student, i.e. diploma holder (name and surname, date, place and country of birth), the name and major of the completed study programme, the number of ECTS credits, the professional or academic title or academic qualification obtained, the diploma number, place and date of issuance, and the Dean's signature and official seal.

The content of Diploma Supplement is defined by the Ordinance on the content of diplomas and diploma supplements (OG 77/2008 and OG 149/2011; 74/2023 – new Ordinance). The Diploma Supplement is a supplementary document to the diploma and it is issued in Croatian and English to all students free of charge, as defined in the Article 19 of the Ordinance on study programmes and studying at Josip Juraj Strossmayer University of Osijek. The Diploma Supplement contains information about the holder of the diploma, information about the obtained qualification, the level of qualification, content of the obtained qualification, success achieved, information about employment opportunities and further education, as well as additional information, and it is certified by the Dean's or Rector's signature and the seal of the Faculty or University.

3.4. The higher education institution provides sufficient and easily accessible resources to support students.

Support for students upon enrolment and during their studies is provided in several ways. Significant role in provision of support to students is assumed by the Office for students and study programmes, Office for student support and career development, Quality assurance office and Office for international cooperation and projects, which work together with the Committee for teaching, Committee for quality assurance, Committee for recognition of student mobility programmes and the Student Union. The stated committees and the Student Union propose and/or carry out certain activities aimed at improvement of quality of student support, thus making their progress through studies and completion of obligations easier. Furthermore, the University Centre for Advancement of Quality Assurance in Higher Education, established at the University level, also provides support to all students at the University and helps them to prepare for the labour market at the local and global level. The support provided by the stated offices and committees is explained to students at the introductory presentation, i.e. on the occasion of the welcome speech delivered to freshmen and first-year graduate students by the Dean, the vice-deans and

representatives of the mentioned offices and the Student Union. In the text below, the roles and forms of support provided to students are described in detail.

General information about the University of Osijek, the Faculty, studies and majors, forms of students support, the City of Osijek and other relevant information are shown in Information Package that are being regularly published on the Faculty website.

In order to gain a better insight into the possibilities of studying and career development, prospective students are presented with all information about the Faculty's study programmes within promotion events organised in secondary schools, at the Open Door Days, which are held every academic year within the Festival of Science. The Committee for teaching and the QA Office are responsible for promoting the Faculty among secondary school students. The Faculty also provides support and information to prospective students by sharing brochures and information leaflets that elaborate all study opportunities, extracurricular activities and employment opportunities upon successful completion of studies.

The Faculty is committed to providing the most favourable environment for students, and supports the active participation of students in scientific and research work, extracurricular activities, active participation in the community, volunteer work, as well as participation in professional, sports and cultural activities. The Office for student support and career development offers counselling on studying, career opportunities and other options. The Office also organises various forums and workshops with the aim of improving academic, business and social competencies of students. Within their courses, teachers promote opportunities for extracurricular activities that students can get involved in.

In order to ensure the quality of studies and the best possible support to students, the Committee for quality assurance proposes to the Faculty Council appointment of study year coordinators/mentors, who are in contact with students and who are the first instance to whom students refer to with their issues. If not able to resolve the student issues, the study year coordinators/mentors contact the Committee for teaching or Committee for quality assurance. Study year coordinators/mentors are appointed at the beginning of each academic year. In their capacity as teachers they regularly organise group or individual meetings with students. At those mentoring meetings, students are also informed about the possibilities of employment and options for continuing their studies. The mentoring meetings are structured in topics defined by the Committee for quality assurance, but those topics can be adjusted and supplemented according to students' needs. Within the mentoring system, mentors organise workshops and interactive discussions on topics of students' interests. Within the mentoring system, students are offered support both in achieving their academic goals and in developing their skills and competencies needed for their professional and personal growth. Until the end of each academic year (the deadline for submission is 30 September), mentors are obliged to submit reports on all their activities to the Committee for quality assurance, which then prepares an annual report on the mentoring system. The report comprises the analysis of the information obtained from the mentors' reports and the analysis of results obtained from the survey. The report of the Committee for quality assurance on the mentoring system contains recommendations for improvement of the mentoring system quality, and those recommendations are implemented by the Faculty management board, after being adopted by the Faculty Council. The Faculty also encourages students' participation in scientific research and publication of papers in co-authorship with teachers, and provides support to students by financing students' participation in scientific and professional conferences and similar events.

In addition to the mentoring system, during the previous period, the Faculty provided support to students through the Student tutor system. Tutors are volunteers, i.e. buddies at disposal to other students to help them adjust easier to the academic surroundings. At the beginning of each academic year, every freshman is assigned a tutor, whom he can contact to inquire about all information and advice about studying and student life (information about courses, the Bologna process, city transport and similar). Besides freshmen, student tutors are also available to students of the second and third year of undergraduate studies, as well as to first-year graduate students. Senior students support their new colleagues to adapt to studying and student way of life more easily. Student tutors communicate with their colleagues in a less official way that creates trust and positive atmosphere between students and Faculty employees, as well as among students themselves, all of which contributes to the quality of studying at the Faculty. The students who act as tutors develop their communication and organisational skills and meet new friends. For student tutors, their engagement in the student tutoring programme is entered as an extracurricular activity in the Diploma Supplement.

In order to support the development of organisational and communication skills, students actively participate in the University Fair. They design promotional material, set up the Faculty's exhibition area and promote study programmes and other Faculty activities to prospective students. Also, the Faculty supports publication of the student journal Feniks, which is edited by the Faculty's Student Union by engaging many students in preparation of a specific edition.

The Faculty provides support to students by investing in logistic resources to offer help with learning, which includes quality library services, printing services, adequate work space and modern computer equipment, as well as the support of the Office for students and study programmes. The lecture halls and other premises are equipped appropriately, creating an environment that motivates students for learning. Reading materials and literature that is required for preparation of exams, seminars, theses, etc. are available to students in the Faculty Library, which is open every working day from 8:00 am to 6:00 pm. During working hours, the Library is available to part-time students, who usually work and study. In addition to library materials, the Library offers to students a reading room and computers with open access to some databases. Library staff continuously improve their skills in searching databases and library materials in order to provide the best possible service to students and teachers in the provision of literature.

The Faculty also provides administrative support to students by disposing of digital systems, such as ISVU and Studomat, within which students receive administrative services, such as application for exams, cancellation of those applications, etc. Studomat is located next to the Office for students and study programmes and is active throughout the working day. The Student service is available to students for all issues that they cannot solve digitally (like submitting requests for various needs). Student service working hours are adjusted to full-time and part-time students. Students can influence the improvement of quality of education through making suggestions, remarks and comments anonymously, which they make in writing and put into the mailboxes placed in the corridors of the Faculty building (ground floor, 1st and 2nd floor).

Support for student mobility is described in detail in Chapter 3.5. In short, the Office for international cooperation and projects offers constant support to students by organising individual incoming and outgoing mobilities and by offering information about participation possibilities in mobility programmes in a transparent way, via Faculty website. The individual incoming and outgoing student mobility programme is regulated by the University Ordinance. Students participate in mobility programmes for the purpose of studying at a foreign university for one semester or one academic year, for the purpose of preparing a graduation thesis or for professional practice. Short term mobilities, such as Erasmus+ Blended intensive programmes (BIP), are also

offered to students. The Office for international cooperation and projects encourages students to apply for international mobility by organising various events at which students share their experiences on international exchanges. The Office for international cooperation and projects carries out surveys of incoming and outgoing students to assess their satisfaction with the support they receive from the Faculty. The results obtained by those surveys serve as a basis for decisions on the improvement measures.

For underrepresented and vulnerable groups of students, as well as for students of a lower socio-economic status, the Faculty provides financial support in form of a tuition waiver, as regulated by the Ordinance.

Furthermore, the Office for students and study programmes compiles a list of students with disabilities and submits it to the vice-dean for education and quality management. According to individual needs of students, the Faculty engages teachers to adapt teaching materials and to provide adapted tools for work (e.g. computers and software) as well as space for learning (e.g. a workplace in the reading room or in lecture halls) for students with disabilities and other difficulties.

At the beginning of each academic year, the Faculty organises the Dean's welcome reception for students of the first year of undergraduate studies. On this occasion, students are introduced also with the support provided by the Office for students with disabilities. This Office is established at the University level to provide information and support to students with disabilities. The Office staff tries to solve the individual needs of students with disabilities. The Office has been providing support since the academic year 2009/2010.

Candidates with a physical impairment of 60% or higher are granted admission to study programmes outside the regular quota, regardless of their position on the ranking list, if they reach the threshold, i.e. if they pass all mandatory State Matura exams and fulfil other requirements for admission to the Faculty's study programmes. As of the Ordinance on study programmes and studying at Josip Juraj Strossmayer University of Osijek, the Faculty approaches to solving the specific needs of students with disabilities in an individual manner, for which the Committee for teaching and the vice-dean for education and quality management are authorised. Full-time students with the 1st to the 5th category of disability have right to be accommodated in the Student Dormitory. Full-time students with a physical impairment of at least 60% have also right to compensation of a part of transport costs. Josip Juraj Strossmayer University of Osijek awards scholarships to students with disabilities, students of lower socio-economic status and students who belong to potentially vulnerable groups. In order to support students with disabilities, the Faculty can engage students as assistants and finance their work within the contract on student work. In addition, all students, especially students from vulnerable and underrepresented groups, are offered psychological counselling. Psychological counselling service is available to all students at the University. The Service organises various forums and lectures and provides individual counselling. Psychologists trained in counselling and psychotherapy base their services on strict professional ethical standards that ensure privacy and confidentiality of personal information. The goal of the Counselling Service is to provide support to students in overcoming the challenges of studying, to provide help in overcoming personal and professional problems, to teach students how to develop skills that will be useful in their studies and career. The Counselling Service work increases the quality of student standard and studying conditions, so that the studying experience is pleasant with a significant less stress caused to students.

The modern building of the Faculty is completely adapted to people with disabilities. It is spacious, seats in the atriums and corridors are available, which makes staying in the building comfortable and pleasant.

The Faculty has introduced various support measures for graduates in order to facilitate their easier employment and more successful entrance to the labour market. The Office for student support and career development prepares students for employment. This Office performs professional-administrative tasks related to career counselling and career development, plans and organises presentations, workshops and training courses for counselling and career planning for students, performs tasks related to analyses and reports on connecting of higher education and science with the labour market, participates in providing support to students in realising their career goals through cooperation with Faculty's Alumni Association, and provides help and support in professional guidance. The Office is cooperating with the University Centre for Advancement of Quality Assurance in Higher Education to provide all of the above stated services. The Service for professional counselling of students is also available in the University Centre for Advancement of Quality Assurance in Higher Education. Professional counselling of students is an additional service within which students can get support for strengthening their competitiveness in the Croatian and European higher education area and the labour market. The Service is oriented to students in the final years of undergraduate and graduate studies, but also to students of other study years who want to prepare well for a successful entrance to the labour market. The student professional counselling service prepares students for the labour market by organising group counselling sessions (workshops *Writing a CV and a motivational letter, Time management, Academic etiquette, Presentation skills, How to write a thesis, and Interview with an employer)* and by providing individual professional counselling to students. Within individual counselling, students discuss issues with the counsellor related to the development of their future careers and successful presentation on the labour market.

The Faculty organises the Career Day, on the occasion of which it facilitates direct contact between students and employers, enables presentation of companies, and prepares students for the labour market. During the Career Day, students participate in various workshops and forums, acquire new knowledge and skills in planning their future careers. They also get to know potential employers who present themselves at that event and have the opportunity to talk to employers and introduce themselves as future workers. In addition to the Career Day, the University of Osijek organises Career Week, at which all University components and potential employers participate with the purpose to facilitate student career development. The event includes activities, workshops, round tables, panels, lectures for students and speed dating with employers.

In addition to the described support, the Office for student support and career development, in cooperation with the Quality Assurance Office, analyse data obtained from the Croatian Employment Service on the number of employed graduates and compare the data with the number of students graduating from the Faculty. Generally, the number of unemployed graduate students is constantly decreasing due to higher demand in the labour market, and trends are visible in Analytical supplement; Table 3.6.

Following the results of analyses and data from the Croatian Employment Service, the Faculty proposes changes to admission quotas for its study programmes. Changes to admission quotas are also introduced based on the interest of candidates for a particular study, the needs of the labour market for specific competencies and skills, and the vertical mobility in studies, i.e. continuing with education at graduate level. The proposed admission quotas reflect a high quality of education delivered by the Faculty, and the Faculty's study programmes, facilities, equipment and teaching staff guarantee quality teaching in student groups, as determined by the regulations.

The Faculty also supports its former students. The Association of former students and friends of the Faculty is called Alumni. Some of the goals of this Association are to strengthen ties and cooperation among Faculty graduates, to develop cooperation between the Faculty and companies or organisations where Faculty graduates work, to promote studies among prospective students, and to support current students during their studies and later in finding jobs. The Association works intensively on the promotion of business activities of former students and on the activation of memberships, organisation of fairs, visits to fairs organised by other business entities, etc. In the coming period they will organise professional meetings and lectures. The plan is to increase the visibility of the Alumni Association, so that prospective and current students have first-hand information about the labour market trends, about career options, and opportunities offered by obtaining a well-valued Faculty's diploma.

It should be noted that students can apply for scholarships provided by the Ministry of Agriculture, Fisheries and Forestry in the framework of the project "Scholarships for students of agricultural studies at universities, polytechnics and colleges in the area of Slavonia, Baranja and Srijem", which is part of the National Development Plan for Slavonia, Baranja and Srijem, in the implementation of which the Faculty invested great efforts. Full-time and part-time students of the 2nd and 3rd undergraduate study years, and of the 1st and 2nd year of graduate studies in the field of biotechnical sciences (areas of agronomy, biotechnology, food technology and nutrition) are entitled to receive the scholarship, if not repeating the year of study. This scholarship is an exceptional support to the students and motivates them to complete their studies, because the right to receive this scholarship is granted to successful students who progress through studies without repetition of study years. No other conditions of excellence are required, as referring to the chapter 3.3., which describes the efforts and measures introduced to support students in achieving better success at studying and to complete studies. The scholarship per student is EUR 1,327.00 per year. Students can also apply for STEM scholarship, also provided by the Government for full-time students who are Croatian citizens, full-time students who are citizens of a member state of the European Union, the European Economic Area and the Swiss Confederation, and for full-time students who are under international and temporary protection in accordance with the Act on International and Temporary Protection, who are enrolled in university undergraduate studies, university graduate studies, university integrated undergraduate and graduate studies, professional short studies, professional undergraduate studies and professional graduate studies in STEM fields of science in higher education institutions in the Republic of Croatia, under the conditions determined by the Ordinance. The Office for students and study programmes and the Office for student support and career development are available to students to provide assistance in application for those scholarships.

All offices and services of the Faculty provide high-quality support to students. A total of six qualified staff are employed in the Office for students and study programmes and the Office for student support and career development, three staff are employed in the Faculty Library, and seven staff work in accounting. Students have at their disposal another 43 associates, laboratory assistants and technicians within CAAU and 7 associates and technicians in the Experiment station for innovation and technology, who directly and/or indirectly work with students in the realisation of professional practice, preparation of theses and research activities.

3.5. The higher education institution provides favourable conditions and support for students entering international outgoing and incoming mobility programmes.

The Faculty aligns its international activities with national and European strategic documents, such as the Strategy for Education, Science and Technology of the Republic of Croatia, European Strategic Framework and the European Innovation Agenda. The European Innovation Agenda emphasises the importance of strengthening innovation capacities through international cooperation, and the Faculty invests efforts into greater involvement of students and staff into mobility, into the increase of international project proposals and project cooperation, as well as into cooperation among teachers and scientists. International student and staff mobility is most often achieved through Erasmus+ and CEEPUS programmes.

The visibility of the Faculty in the European Research Area is manifested through international projects carried out within different international consortia. The activities of academic staff in international consortia confirm our efforts to achieve our goals of education and research.

We support our students to gain international experience, and we also offer to foreign students the possibility of getting education in a unique agricultural environment in Slavonia. By working with international universities, scientific institutes and companies in the higher education ecosystem, we prepare students for successful entry in the global labour market, empowering them with skills and knowledge that are competitive in the international context. Results achieved and progress made in international cooperation are reflected in the increase of cooperation agreements with foreign institutions, the increase of student and staff mobility, especially incoming mobility, in more international projects and cooperation, including cooperation with institutions outside Europe, as well as in the intensified international promotion of the Faculty.

International cooperation of the Faculty is managed by the vice-dean for international cooperation and Studies in the English language and Office for international cooperation and projects. The Vice-dean for international cooperation and Studies in the English language (Erasmus Academic Coordinator and LEAR) and the Office staff submit annual reports on their work to the Faculty Council.

International cooperation activities are mainly referring to student mobility and implementation of Erasmus+ and CEEPUS programmes. The Vice-dean for international cooperation and Studies in the English language and the staff of the Office for international cooperation and projects are in charge of communication with universities and institutions within and outside the EU, with state authorities, agencies and embassies, and they participate in international university festivals and fairs, organise conferences, workshops and meetings at international level, maintain the Faculty's website related to international cooperation and perform other international activities.

The University of Osijek is holding the Erasmus Charter for Higher Education 2021-2027. This Charter allows implementation of ERASMUS+ projects and academic mobility of individuals.

Academic mobility of students and staff is most often achieved through Erasmus+ projects funded within KA131, KA171 and KA2 scheme, CEEPUS, European University Alliance COLOURS, capacity building projects in higher education, Jean Monnet actions, bilateral agreements and individual cooperation between researchers and teachers, and total number of incoming and outgoing

student mobilities is shown in Analytical supplement; Table 3.5. Incoming and outgoing student mobility is regulated by the University Ordinance. This Ordinance defines conditions for exchange for the purpose of studying at a foreign university in one semester or academic year, for the purpose of thesis preparation, or realisation of professional practice. By expanding the number of contracts and connecting with partners within international networks, the Faculty provides a wider platform for students and staff to gain international experience. The Faculty is an active partner in eight CEEPUS networks (RO-1811-01-2324 - Deep Neural Networks (DNN), for Digital Climate Smart Agriculture (D-CSA); RS-1607-03-2324 - Resilient management of bioactive compounds from plants and organic wastes in Middle-Europe; SK-1018-09-2324 - Biology, Biotechnology and Food Sciences; SK-0405-15-2324 - Renewable energy sources; HU-0003-19-2324 - Agriculture and Environment in the 21st Century - @groen; RS-1706-02-2324 - Sustainable fishery and aquaculture in the 21st century – AQUA-21; HR-1302-06-2324 - Research and Education of Environmental Risks i SI-1817-01-2324 - Tourism and Agriculture Sustainable Alliances - #TASA network).

The Faculty has widened the cooperation network with foreign universities for exchange through Erasmus+ programme from 45 agreements to more than 100 over a period of five years. The main partners are from Europe, yet the cooperation expanded to Armenia, Jordan, Mauritius and Namibia.

In the observed period, the Fund for international cooperation was established with the purpose of promoting and encouraging international cooperation.

Bilateral cooperation agreements have been signed with several international institutions, such as the University of Perugia, Italy, where doctoral students attend studies or do research in Italy, and the University of Bydogoszcz, Poland, where staff and doctoral candidates participate in study exchanges.

Compared to the previous academic years and the academic year 2018/2019, there was an increase in the number of outgoing students of around 25% in the academic year 2022/2023 (Analytical Supplement, Table 3.5).

The COVID-19 pandemic has significantly slowed down academic mobility and other international activities, since travelling, cooperation and participation in international projects and traditional forms of exchange were limited. This situation forced academic institutions to adapt their activities in the form of virtual programmes delivered on digital platforms. Compared to the academic year 2022/2023, during the pandemic, outgoing student mobility was lowered for 70%.

The majority of outgoing student mobilities were shorter than three months, while around 24% of students realised academic mobility longer than three months. The introduction of Erasmus+ short-term blended intensive programmes (BIP) in the academic year 2020/2021 also increased students' interest in academic mobility. An increased number of exchanges is expected in the future, mostly due to short term mobility programmes in Europe, as well as an increased number of international project proposals and cooperation activities established among academic staff.

A total of 34 students stayed abroad for the purpose of studying, while 44 students performed professional practice in foreign institutions.

Geographically speaking, for the realisation of academic mobility, Faculty students most often choose Poland, while other mobility destinations are Portugal, the Netherlands, Austria, Germany, Czech Republic, Türkiye, Slovenia and Serbia.

The Faculty of Agrobiotechnical Sciences Osijek informs students about opportunities for studying abroad or for international internships through various platforms: Faculty website and University

website, social networks of the Faculty (Facebook, Instagram, X and LinkedIn) and of the University (Facebook, Instagram, X and LinkedIn), via Merlin (Moodle), by sending e-mails to students, via Student Union and by announcing information on bulletin boards of the Office. All relevant documents and information are published on the Faculty website and links are posted in social media posts. Teachers are also sharing information about open calls for student mobility programmes. They advise and support students in the process of applying for and realising student mobility.

At the Faculty website, posts are published about available international scholarships for studying abroad (e.g. scholarships in China, Slovakia, Poland, etc.).

For the purpose of promoting studying and traineeships abroad, short videos are made to present both home students' experiences with academic exchange programmes, as well as and foreign students impressions with studying or internship realised at the Faculty. In these short videos, students highlight interesting experiences, new insights and benefits of mobility, and invite their colleagues to explore the opportunities of studying abroad. Promotional material was created for the purpose of raising interest and informing students for exchange programmes.

The Faculty shares all information on its international activities, possibilities of studying abroad and acquiring international experience for students in national and local media (radio, TV, portals).

Intensified promotion of outgoing mobility for home students on social media takes place in February and March, September and October of each year, before the call of the Erasmus+ outgoing student mobility (example of promotion: Facebook).

Students' representatives were informed about the possibilities of taking part in exchange programmes at regular meetings of the Faculty Council, as well as at mentoring workshops. At the reception of the Dean for freshmen, Erasmus+ and CEEPUS mobility programmes and the COLOURS European University Alliance are presented.

The Erasmus+ Info Day is regularly organised to promote and present opportunities for studying abroad to as many students as possible, and to elaborate the benefits of mobility, such as acquiring international experience and new knowledge, raising self-awareness and confidence, and fostering European values and innovation. At the Info Day, students are informed about available mobility programmes, such as Erasmus+ and CEEPUS, but also about other cooperation that the Faculty develops, which provide opportunities for mobility.

The Faculty staff actively participated in the COLOURS project development for the European Universities Alliance funding, and after winning of funds they now participate in realisation of activities within the COLOURS European University Alliance. In cooperation with Castilla La Mancha University, Spain, which is a partner in the COLOURS Alliance, in the academic year 2022/2023, the Faculty co-organised the Erasmus+ Blended Intensive Programme *The Future of Agriculture in the Context of Global Change*. The programme has been approved for realisation. Although it is not considered within the evaluation period, it should be noted that the programme enabled mobility experience and the acquisition of new knowledge for more than 19 students, while three teachers delivered lectures. In cooperation with partners in the COLOURS Alliance, scientific cooperation has been intensified, resulting in an increased exchange of staff and students.

Referring to the academic mobility of students, a good practice can be given on the example of the Erasmus+ KA2 project *Harmonization and Innovation in PhD Study Programs for Plant Health in Sustainable Agriculture*. Within this project, the Faculty intensified the incoming and outgoing student and staff mobility. Students realised mobility in the scientific field related to plant protection, which enabled them to connect with international researchers and carry out some

research at a foreign institution. Over the past five years, academic staff have carried out activities in nine international projects that involved student mobility.

The Faculty is dedicated to promotion of European values, as well as global values, so it cooperates with companies from the higher education ecosystem, thus preparing students for the global labour market. Cooperation was achieved with Huawei, which supported students of the study programme in Digital Agriculture to visit smart farms in Linz, Austria. On that occasion, students were introduced to modern technology for protection of vineyards from pests and diseases, vegetation indices based on satellite imagery and real-time management with ICT devices in vineyards. Also, Huawei sponsored the two most successful students of Digital Agriculture as members of the delegation to visit China, the seat of Huawei, and its partners that produce solar panels for agriculture. Students had the opportunity to talk to Huawei CEOs, present their skills and knowledge and personally witness the development of smart devices for agricultural production and the usage of alternative energy sources in food production.

The Faculty supports students to prepare for the international labour market and enables them to pursue excellence through innovative work. Our students participate in the Academy of Regional Development and EU Funds. Academic staff provided mentoring and support in the development of project ideas, which resulted in winning first place among 70 groups and a study trip to Brussels, Belgium. Also, on 29 November 2021, students delivered the workshop "Open Days of EU Projects" at the Faculty, by hosting guest lecturers and students to present the possibilities supported by EU funds.

Being guided by the Office for international cooperation and projects, several students and assistants, initiated the establishment of a branch of the international student association *International Association of Students in Agricultural and Related Sciences* (IAAS), as a branch of IAAS Croatia. Members of the branch of IAAS Osijek proposed their first IAAS activity, i.e. a project called "Autumn in Baranja", which was approved for funding by the University of Osijek.

Recognition of academic mobility and recognition of ECTS credits for outgoing students participating in international mobility programmes is performed by the Committee for recognition of student mobility programmes, which was established on 8 March 2018. The Committee decides on recognition as following the provisions defined in the Ordinance, the recommendations given by the National Agency for Mobility and EU Programmes and by following the trends in higher education in Croatia. By establishing the Committee, the Faculty is assuring flexibility in the recognition of credits acquired abroad, thereby encouraging students to participate in international mobility.

There are two Erasmus+ coordinators at the Faculty, one is academic coordinator (vice-dean for international cooperation and Studies in the English language) and the other is administrative coordinator (head of the Office for international cooperation and projects). They provide support to outgoing and incoming students. Support provided to students interested in the exchange programmes includes counselling by the Erasmus academic coordinator and administrative support by the Office for international cooperation and projects in the application process. The Faculty also ensures the recognition of ECTS credits acquired at foreign institutions, by taking into account the compatibility of courses and learning outcomes.

Members of the Committee for recognition of student mobility programmes are from various scientific fields, so with their teaching experience they provide the best possible recognition outcome after the realisation of student mobility. The Committee also includes the vice-dean for international cooperation and Studies in the English language, who is the Erasmus coordinator, and the vice-dean for teaching and quality management. When comparing and evaluating the

compatibility of study programmes and individual courses, the Committee follows the principle of maximum flexibility (Article 7, item 2 of the Ordinance).

Members of the Committee also act as ECTS coordinators. Before the student mobility, they compare the compatibility study programmes and courses based on the learning outcomes and review the programme and duration of professional practice for outgoing students, so that after the realisation of the mobility, students are guaranteed positive recognition outcomes for the acquired ECTS credits and achieved grades.

The Committee reviews the requests of students by assessing the compatibility of study programmes or courses before the start of the mobility. If necessary, the members of the Committee advise students to select more compatible courses or study programmes for their international mobility.

After receiving requests from students for recognition of ECTS credits and achieved grades, which are sent to the Office for international cooperation and projects, the Committee meets in person or holds electronic sessions. The Committee usually approves recognition of the maximum number of ECTS credits acquired during the academic mobility. The decision on the recognition of ECTS credits and students' achievements during academic mobility is sent to the Office for students and study programmes, which are recording the decisions in the ISVU system or in the Diploma Supplement.

In the past five years, all students who passed courses during international academic mobility or spent at least 75 hours on professional practice abroad were granted recognition of ECTS credits and achievements, which significantly encourages students to participate in international mobility programmes.

Students have the opportunity to improve their English language knowledge during their studies. Since the academic year 2021/2022, the Faculty has been delivering the University graduate study programme in Digital Agriculture in English language. Within all study programmes, all students are required to enrol either English or German language courses.

Students are offered different international experiences during their studies. They are informed about international activities at the Faculty, such as workshops, seminars or lectures. Graduate students are informed about the possibilities of continuing education at doctoral level at foreign institutions. Invitations to various events are sent to students and staff by e-mail, and published on social networks and the official Faculty website. Posters are placed on bulletin boards and other spots with a high frequency of students. Teachers are allowed to dismiss their lectures to take students to participate in activities and events. The scientific forum brings foreign visiting professors and researchers (more details in chapter 5) to visit the Faculty, and to deliver lectures either as part of the regular teaching or as extracurricular activity.

Students participate in the Erasmus+ KA2 international projects, in the European University Alliance, by realising exchanges and contributing to fulfilment of project activities and objectives. Students also participate in other bilateral programmes organised between the Faculty and the partner institution.

Bilateral agreements encourage outgoing mobility and also provide a framework for acquisition of international experiences of students. A good example is the cooperation established within bilateral agreement with the Julius Kühn-Institute, the Federal Research Centre for Cultivated Plants in Germany. During 2019, five students performed professional practice at that Institute.

Information on study opportunities for foreign incoming students is available in English at the University website, and the course catalogue is published both at the Faculty website and the University website, which allows easy access and finding of information to potential international students interested in studying at the Faculty. This information refers to the application process, available study programmes and courses in English and other foreign languages, organisation of the academic teaching, student life, practicalities, and other useful links.

In the evaluated period, the Faculty hosted 136 incoming international students, of whom 58 students spent more than three months in the exchange programme. Of the total number of incoming students, about 74% of them studied at the Faculty, while 26% performed professional practice in the Faculty's laboratories. There is continuous growth of incoming student mobilities, and the largest positive increase in the number of incoming mobilities refers to long-term mobilities. By organising blended intensive programmes BIP within Erasmus+, the Faculty plans to increase the number of short-term incoming mobility of students and staff in the future. At the Faculty, there is one foreign student currently studying for a full-degree qualification.

An analysis of the courses offered to foreign students participating in exchange was carried out. It was observed that in certain scientific fields there was a small number of courses offered to foreign students. Upon receiving a notice on that issue, teachers included more courses in the offer for foreign incoming students. An updated course catalogue for incoming exchange students is available on the website of the Faculty and the University.

The Faculty conducts various international activities aimed at promotion of study programmes and raising the recognition and visibility of the Faculty in the European Research Area.

The Faculty promoted its study programmes at educational fairs in Ljubljana, Slovenia, and in Rotterdam, the Netherlands. The promotion was organised by the initiative Study in Croatia of the Ministry of Science, Education and Sports, in cooperation with the University of Osijek.

The Information package for incoming exchange students is prepared in English language to facilitate sharing of information about the Faculty, academic environment, study programmes and organisation of mobility. Promotional material in English language about the study programmes is published, the roll-up banner is placed at international gatherings organised or co-organized by the Faculty.

At the initiative of the Faculty, the University of Osijek concluded an agreement with the Keystone Agency for promotion of the Faculty's study programmes on their platforms. The graduate study programme in Digital Agriculture, which is carried out in English language, and the doctoral study programme in Agricultural Sciences are promoted by the Keystone. There were 617 foreign students expressing interest in enrolling in the Digital Agriculture study programme in the academic year 2022/2023. These were mostly students from the third countries (Nigeria, Ghana, India, Tanzania and Pakistan). The Faculty received 581 inquiries from foreign students about study opportunities, and a total of 32 complete applications for enrolment were received. Online registration is available for foreign students. There were four African students admitted to the Digital Agriculture study programme, yet they were not granted a visa to enter the Republic of Croatia. A total of 147 foreign students expressed interest in the postgraduate university doctoral study programme in Agricultural Sciences. Students interested in enrolment were presented at the Committee for doctoral studies of the Faculty. The most interested students were from the USA, France, Germany, India and Italy.

The Office for international cooperation and projects engaged in promotion of the Faculty and its study programmes through the Study in Croatia social media networks and website maintained by the Agency for Mobility and EU Programmes, as well as via Faculty website and social media

profiles. The embassies of the Republic of Croatia in foreign countries were also engaged in the promotion of the Faculty's study programmes.

The Faculty promotes its study programmes and research capacities within eight international CEEPUS networks, as well as within the Association for European Life Science Universities (ICA), the ICA Regional Network for Central and South Eastern Europe (CASEE), and the Balkan Environmental Association (B.EN.A). The Faculty is an active member in these associations. Staff and students actively participate in workshops, in competitions, as committee members, co-organizers of meetings, etc. Through the ICA CASEE network, the Faculty successfully implemented an international project.

The Faculty is a co-founder of a new international association, the Association of Agricultural Faculties of Southeast Europe, which will facilitate exchange of students and staff in the region.

Meetings were held with foreign ambassadors or representatives of foreign embassies in the Republic of Croatia (Israel, Slovakia, USA), at which the Faculty presented the study programmes and research capacities, and opportunities for exchange of students and professors.

Advisory board for international issues, consisting of prominent international researchers and university professors held several online meetings, at which they shared ideas for student exchange and promotion of the Faculty and its study programmes. Those suggestions given by the Advisory board for international issues were presented to the Faculty Council. Members of the Advisory board for international issues received promotional materials about the study programme in Digital Agriculture to distribute it at their home universities.

Within the Association of European Life Science Universities (ICA), the Faculty cooperated with Bio-based Industries Consortium (BIC) on organisation of the European Student Competition Bio-based Innovation Student Challenge 2023 (BISC-E23). The event offered to students opportunities to gain international experience and prepare for global markets.

During the academic year 2022/2023, the Digital Agriculture Study Abroad Programme was presented to students of the University of Tennessee, Knoxville, USA. The same university approved the programme for implementation.

There were four international summer schools organised within the CEEPUS programme, which were attended by foreign students and staff. International summer schools were promoted through social media networks, the official website of the Faculty and by e-mail correspondence within and outside of the CEEPUS networks. Teachers, researchers and students from Romania, Poland, Slovakia, Turkey, Austria, Czech Republic, Hungary, Montenegro, North Macedonia, Bosnia and Herzegovina and Serbia participated in the summer schools. Summer schools created opportunities for foreign staff and students to develop their professional competencies by studying at the Faculty.

Staff and students of the Faculty participated in four international summer schools in Rzeszow, Poland, and in the international summer school in Maribor, Slovenia.

Support for international students includes provision of help with preparation of application, with arrangements of accommodation, establishing of contacts with professors and students at the receiving institution, and integration into the academic community. The faculty organises orientation programmes for incoming students and offers courses in English to enable foreign students to realise their exchange studies successfully.

The system of *Student Buddy* was introduced and after the call, there were three home students selected as ambassadors for Faculty promotion. Student buddies help foreign exchange students

to accommodate and establish social contacts that will help them during their studying at the Faculty. The Student Buddy system is presented to foreign incoming students during the orientation meeting at the beginning of each semester of each academic year.

All incoming foreign students have the opportunity to attend a one-semester course in Croatian language and culture, organised by the Faculty of Humanities and Social Sciences Osijek. The course is targeting incoming foreign students realising mobility for studies at the University of Osijek. The course is organised every semester (twice a year) and lasts for 70 teaching hours. Upon successful completion of the course and passing of the exam, the student earns 6 ECTS credits. The course is for beginners, i.e. students without prior knowledge of the Croatian language (initial level A1). Lectures are held at the Rectorate or at the Faculty of Humanities and Social Sciences Osijek, depending on the available premises. Based on the report on the delivered lectures, the majority of incoming foreign students (about 50-60%) enrol in the course of Croatian language that is delivered in each semester.

The University collects feedback from students through the final reports of students who participated in mobility programmes. All incoming and outgoing students, as well as staff, are required to complete a survey after their mobility, both through the Erasmus+ and CEEPUS programmes. These surveys include questions about the quality of support during mobility, as well as the overall student experience. Based on the received feedback, the Faculty undertakes measures to improve the support.

Starting with this academic year, the Faculty will improve the surveying through the introduction of additional mechanisms for collecting feedback during the mobility and implementing an annual monitoring and reporting system on the improvements.

In the past five years, significant progress has been made in international cooperation. The number of international partners and agreements on cooperation has increased significantly, and participation in international projects has been strengthened. The mobility of students and staff is also constantly increasing, especially within the Erasmus+ programme. The geographical diversity of partners has increased, and cooperation has been widened to institutions outside Europe. So far, the Faculty has been the most successful constituent of the University of Osijek in realisation of mobility programmes, and it has been also one of the most successful faculties in Croatia in realisation of CEEPUS mobility.

The Faculty continuously strengthens international cooperation and supports for students and staff through various mobility programmes. By cooperating with international universities, scientific institutes and companies within the higher education ecosystem, we invest efforts to prepare students for the global labour market, and to empower them for competition in international context. This analysis points out previous success, and identifies areas for further improvement, by which the Faculty will be even more attractive to international students and partners.

IV. Teaching capacities and infrastructure of the higher education institution

4.1. The higher education institution ensures adequate teaching capacities.

The number and qualifications of the teachers employed by the Faculty of Agrobiotechnical Sciences Osijek are adequate for the implementation of study programmes, for achievement of intended learning outcomes and for performance of scientific activities. The Faculty employs enough of its own teaching staff, and only several external associates are engaged in teaching. The human resource policy of the Faculty ensures employment of enough teachers and associates. In the evaluated period, the number of teachers and associates was increased as the Faculty employed new assistants and junior researchers, and supported their successful career advancement. According to the structure of staff (Analytic Supplement, Table 4.1.a), the Faculty employs 115 full-time teachers, of whom 111 (96.52%) are appointed to scientific-teaching job positions and four are holding teaching titles, i.e. there are two senior lecturers and two lecturers. In the structure of the scientific-teaching staff, there are 41 full professors with tenure (36,9%), 23 full professors (20.72%), 25 associate professors (22.52%) and 22 assistant professors (19.81%). One full professor with tenure is employed in cumulation. In addition to employees in scientific-teaching and teaching job positions, various forms of teaching are delivered by 12 assistants and 7 senior assistants, as well as by 4 project associates. In the academic year of the self-evaluation (Analytic Supplement, Table 4.2. and Table 4.3.), there were 18 undergraduate university, graduate university, undergraduate professional, postgraduate university (doctoral) and postgraduate specialist study programmes delivered within 46 courses taught by 115 teachers, of which 111 teachers were appointed to scientific-teaching job positions and 4 were appointed to teaching positions of a lecturer and senior lecturer. Teaching was also delivered by 7 senior assistants and 12 assistants. Altogether, teaching was delivered by 134 Faculty staff. When necessary, at the beginning of each academic year, the Faculty plans engagement of external associates, and in the academic year of the self-evaluation, there were 12 external associates hired at scientific and teaching job positions. External associates appointed to scientific-teaching titles contribute to the quality of teaching with their specific expertise, primarily in doctoral studies and postgraduate specialist studies. Teaching at undergraduate university and graduate university studies is almost 100% delivered by the Faculty's own teaching staff. Only 35 contact hours are conducted by external associates. In the doctoral study and postgraduate specialist studies, 88% of all teaching hours is delivered by the Faculty's own teaching staff.

The dynamics of hiring of new staff is not evenly distributed by years, because it depends on the available salary coefficients at the University. Enough staff enabled reaching of the favourable teacher/student ratio and renewal of teaching and research staff with young experts. The ratio of full-time teachers to students is not higher than 1:30 and it is 1:8, which is considered appropriate for assuring high quality studying. The teaching load at higher education institutions is determined by legal regulations of the Republic of Croatia, and at the level of the Faculty it is also defined by

the Decision on standardisation of teaching and other work issues of teachers and associates. The full teaching load refers to the number of planned working hours in the total teaching activity entrusted to a teacher at the beginning of each academic year, including the amount of contact hours. If the teacher conducts only the same type of teaching (for example, lectures for scientific and teaching staff or only practices for assistants), it is considered that the number of contact hours required for a standard full teaching load is 150.

The total teaching load per one year (taking into account all university undergraduate majors and all graduate studies and majors) amounts to 25,485 contact hours. As already mentioned, there were 134 teachers who, in accordance with the teaching plan, delivered teaching in the academic year of 2022/2023. Therefore, the average annual workload per teacher is 190 contact hours. When knowing that most teachers were delivering different forms of teaching (they do not only deliver the same type of teaching), the number of contact hours exceeded by only 10% the defined norm. When considering individual workload of teachers, it was evident that there was a disproportion between some teachers, as some exceeded the norm, while others did not meet the full norm. Certain deviations occurred because of the assignments of teachers to some majors and study areas and because of the forms of teaching in individual courses. Some courses are attended by many undergraduate and graduate students, while some other graduate courses do not have enough students, so consultations are held in certain academic years. In the future, such disproportion will be resolved by advancement of our senior assistants and assistants into teaching titles, who will take over part of the teaching (primarily lectures) from teachers who currently deliver slightly more contact hours than the allowed norm.

The Faculty is currently in the process of devising new study programmes. In the process of devising new study programmes, special care is given to the quality, innovation and compatibility of study programmes with similar study programmes offered in Croatia and EU countries. Attention is also paid to balancing the teachers' workload. Teachers have to deliver a legally determined number of contact hours, and balancing of the workload among teachers will be a motivation for them to better prepare for teaching and to introduce active learning methods into lectures. New study programmes will be more attractive to students. In addition to the above, within the new study programmes, there will be less lectures held than now, so the annual teaching load will be reduced.

The scientific productivity of teachers is high (Analytic Supplement, Table 4.3), which is confirmed by publication of scientific and professional papers, the number of citations and the h-index in the Web of Science database, as well as by the number of scientific and professional projects and the number of published textbooks. Teachers hold scientific-teaching titles in seven scientific fields (biomedicine and healthcare, biotechnical sciences, social, natural, technical sciences, humanities, and interdisciplinary field of science). The largest share of teachers, 97.72% is affiliated to the biotechnical sciences, while 6.8% is in the field of social sciences. There are 6.00% of teachers in biomedicine, healthcare and natural sciences, while 3.00% are appointed into titles in technical sciences. There are 2.27% of teachers in the field of humanities and interdisciplinary sciences. This distribution of scientific and teaching staff confirms the Faculty's profiling in the field of biotechnical sciences. However, it also indicates that the Faculty staff ensure an interdisciplinary scientific and teaching approach to realisation of study programmes and the acquisition of the intended learning outcomes, as well as interdisciplinarity in scientific activities. The recruitment of teachers is carried out in accordance with strategic goals and requirements for teaching delivery, as indicated by the Departments and the Faculty Council, and in accordance with the prescribed procedure.

4.2. Teacher recruitment, advancement and re-appointment is based on objective and transparent procedures, which include the evaluation of excellence.

Josip Juraj Strossmayer University of Osijek functionally integrates its constituents, especially faculties, art academy and departments, and through its bodies ensures their coordinated action in accordance with strategic and development decisions on academic issues and on the profiling of scientific research. Functional integration is visible also in coordinated financial operations and legal transactions, investments, development plans and in dealing with external partners in scientific activities and higher education. Functional integration is based on unique university regulations adopted by the University Senate, which are complied with by all University constituents. In accordance with the above, the appointment and re-appointment of teachers and associates into scientific-teaching and professional titles is carried out on the basis of the University Ordinance on election and re-election into titles and corresponding job positions - refined text (2022) and the Ordinance on the announcement and implementation of public calls for employment at Josip Juraj Strossmayer University of Osijek.

Before adoption of the new Act on Higher Education and Scientific Activity (OG 119/22), for every appointment and re-appointment or new employment of teachers or associates, a public call needed to be announced upon approval of the University of Osijek, and based on the Decision of the Faculty Council. The public calls were published in Official Gazette, in the daily newspapers, on websites of the University of Osijek and of the Faculty of Agrobiotechnical Sciences Osijek, on the official portal for jobs of the European Research Area and on the website of the Croatian Employment Service - Regional Office Osijek. Candidates submit applications for the call along with the supporting documents within 30 days on the prescribed application form. After the call, the Committee for verification of fulfilment of conditions for elections to titles at the Faculty of Agrobiotechnical Sciences Osijek reviews the applications and proposes to the Faculty Council candidates to be appointed into the corresponding title. If the candidate in the selection process does not have the Decision of the national board on appointment into an appropriate title, which is a condition for selection into a scientific-teaching title, the Faculty Council appoints an expert panel, which elaborates an opinion and submits it to the authorised national board. On the basis of the Decision of the Faculty Council, i.e. the decision of the national board, the teacher signs an employment contract with the Faculty, in which the obligation of re-appointment or appointment into a higher scientific-teaching position is specified. All candidates applying to specific calls are informed about the results no later than 15 days from the day of the call completion.

After the new Act on Higher Education and Scientific Activity entered into force, the procedures for appointment into titles and new recruitment to vacant job positions are carried out in accordance with the provisions of that Act (OG 119/22) and by applying the existing general acts, except for those provisions that are in contradiction to the mentioned Act.

For each new recruitment of teachers or associates, a public call is announced. The call specifies fulfilment of the following conditions: the scientific-teaching and teaching position must be determined by the general act of the Faculty on which the Committee for Statutory and Legal Issues has previously issued a positive opinion, or the job position must be determined by the Human

Resources Management Plan of the University adopted by the Senate, for which the consent of the University and the prior consent of the Ministry have been issued.

On the basis of the Faculty Council decision, and before the employment of teachers, associates and employees in professional job positions, a public call is announced for the selection of candidates to corresponding scientific-teaching or teaching job positions and an expert panel is appointed. The expert panel consists of at least three members employed in a job position of the same or higher hierarchical level compared to the job position for which the call is announced, in the same area and field. At least one member of the panel has to be employed at a university different from the one at which the call is announced. The public call is published in the Official Gazette, at the website of the University of Osijek and at the Faculty website, at the official internet portal for jobs of the European Research Area and on the website of the Croatian Employment Service - Regional Office Osijek. The deadline for applying for a call cannot be shorter than thirty days from the date of publication of the call in the Official Gazette. Candidates submit applications and accompanying documents on the defined application form. The expert panel checks whether the candidates meet the criteria for selection to the appropriate scientific-teaching, teaching or associate job position. In accordance with Article 43, paragraph 5 of the Act on Higher Education and Scientific Activity (OG 119/22), the expert panel implements he unified procedure for determining the fulfilment of scientific conditions and other necessary conditions for verification of teaching and scientific-professional activity in compliance with valid regulations: Ordinance on the conditions for appointment into scientific titles (OG 28/17, 72/19, 21/21 and 111/22), Ordinance on the conditions for appointment into artistic-teaching titles (OG 86/10), Ordinance on the form and method of delivery of the inaugural lecture for appointment into teaching titles (OG 119/05), Decision on the form and method of delivery of the inaugural lecture for appointment into scientific-teaching titles, artistic-teaching and teaching titles (OG 129/05), Decision on the conditions for evaluation of teaching and professional activities in the appointment process into teaching titles (OG 13/12, 24/12 and 120/21), Decision on the conditions for evaluation of teaching and professional activities in the appointment process into artistic-teaching and teaching titles in the field of art (OG, 61/17), Decision on the conditions for evaluation of teaching and scientific-professional activities in the appointment process into scientific-teaching tiles (OG, 122/17 and 120/21), all in accordance with Article 119, paragraph 6 of the Act on Higher Education and Scientific Activity. By issuing an opinion in written form, the expert panel proposes the best candidate to the Faculty Council, and the Faculty Council makes a decision on adopting or rejecting the expert panel's opinion. The decision to reject the opinion of the expert panel has to be explained. Further on, the decision of the Faculty Council on the adoption of the expert panel opinion and the complete documentation with evidence of the fulfilment of the criteria of the best candidate is sent by the Faculty to the authorised national board, except in cases of recruitment to an associate or administrative job position. The authorised national board determines whether the proposed candidate meets the criteria for appointment into a scientific-teaching, i.e. teaching title and corresponding job position. After receiving the decision of the authorised national board, that is, if assuming that authorised national board has not made a decision on whether the proposed candidate meets the selection criteria, the Faculty concludes an employment contract with the selected candidate. In accordance with the Instruction issued by the Ministry of Science, Education and Youth on 16 December 2022, the Decision of the Faculty Council on the adoption of an opinion for a teacher who, in the process of appointment into a scientific-teaching job position already has a decision on appointment into a scientific title that is a condition for employment, does not have to be submitted to the authorised national board, so the Faculty is allowed to conclude an employment contract with the selected candidate on the basis of the Faculty Council decision.

A person who has completed university graduate study or university integrated undergraduate and graduate study in the scientific or artistic field and area with highest academic grades and who has achieved the best results in motivational test and other selection tests can be employed at the vacant job position of assistants at the university constituent.

A person who has obtained a doctoral degree may be recruited to the vacant job position of senior assistant at the university constituent. In addition to meeting the legal criteria, a candidate has to meet the following additional criteria: having had a teaching experience at a higher education institution in as an assistant or as a nominal assistant, having published at least one scientific paper in the field of doctoral research in an international or domestic scientific journal, and having participated in at least one scientific conference.

If the expert panel determines that the application to the call is received by the deadline and that is contains all proofs of the candidate's fulfilment of the criteria, the further procedure is carried out at two levels (a review of the submitted documents based on which candidates are selected for further knowledge and motivation test, and the test itself, carried out in front of the expert panel).

The expert panel evaluates whether the candidates meet the criteria for selection to the job position and issues an opinion in a written form that contains the evaluation of all the candidates, the results achieved at both levels of selection procedure and a total sum of points awarded at each level to each candidate in the selection process. The opinion and the proposal of the best candidate is sent to the Faculty Council.

If the Faculty Council adopts the opinion of the expert panel, it makes a decision on the appointment to an associate job position, i.e. the recruitment of an expert associate.

When associates, i.e. assistants, senior assistants or professional associates are recruited to a vacant job position, after making a decision on adopting the opinion of the expert panel, the Faculty concludes an employment contract with the selected candidate.

The procedure for the advancement of teachers and employees in professional positions is carried out according to the same procedure as described above, but in accordance with the legal provisions, there is no call announced.

The procedure for re-appointment of teachers and employees in professional job positions is initiated five years after the last appointment, if a teacher or an employee in the professional position to which he was appointed or re-appointed before the deadline submits a request for appointment to a higher position.

The procedure for the re-appointment of teachers and employees in professional positions is initiated by the Faculty Council by making a decision on the appointment of an expert panel for initiation of procedure for re-appointment of teachers and employees in professional positions. Within 30 days from the date of its appointment, the expert panel is obliged to submit to the Faculty Council a report on the performance of teachers or employees in a professional position with an opinion on the fulfilment or non-fulfilment of the minimum work obligations as stipulated by the Decision on the minimum conditions of work obligations for re-appointment into scientific, scientific-teaching, artistic-teaching, teaching and professional job positions, and on the form of the report of the expert panel on the work performance of employees in the re-appointment process (OG 24/21). The decision on acceptance or rejection of a report on the performance of a teacher or employee in a professional position in the re-appointment process is made by the Faculty Council. Re-appointment of teachers is carried out every five years.

In accordance with the Act on Higher Education and Scientific Activity (OG 119/22), the decision to accept the report on the performance of a teacher is submitted to the authorised national board.

The obligation to carry out the re-appointment of teachers ends after the teacher gets appointed into the scientific-teaching title of full professor with tenure.

With the entry into force of the new Act on Higher Education and Scientific Activity, the Faculty decided to postpone the adoption of the Decision on additional conditions for the promotion of teachers to higher positions until the new National criteria for promotion to higher positions are adopted. On four occasions, the Faculty's professional collegium discussed the need and processes for the adoption of additional conditions for promotion of teachers. There was a proposal of additional conditions for the appointment into scientific-teaching and associate job positions prepared, which was discussed by all employees. The Faculty's professional collegium concluded that the adoption of the Decision on additional conditions by the Faculty Council shall be put on hold until new conditions for advancement into titles are adopted at the national level. The details are stated in the Report on the realisation of the Faculty’s Action Plan.

4.3. The higher education institution ensures support to teachers in their professional development.

The Faculty continuously provides opportunities to its teachers to improve their skills within various training courses, workshops, round tables, participation in national and foreign professional and scientific conferences, study visits, etc., thus facilitating their professional development. All activities completed with the purpose of boosting professional skills of the Faculty staff are elaborated in the Faculty's Annual Reports for the academic years 2018/2019, 2019/2020, 2020/2021, 2021/2022 and 2022/2023. Support to professional development of staff has been defined in the Faculty’s Development Strategy, and realised in each year, as stated in the Action Plan 2019-2023. Also, the Faculty implements an annual professional development plan for its employees. Realisation of that plan is under authority of the Committee for quality assurance, Quality Assurance Office and the heads of the Departments. Furthermore, as there was a need expressed by the staff, in June 2023, a workshop on the use of Turnitin anti-plagiarism software was organised for scientific and teaching staff. The Faculty staff also participated in an interactive conference on the Quality Assurance in Education, organised in Zagreb, by the Institute for the Quality of Education – Algebra. The Conference presented quality standards for higher education in the new re-accreditation cycle. Discussions were also organised on initiatives of the European Commission in the field of higher education, such as the European and Croatian Qualification Framework, recognition of informal and non-formal learning at all levels of education, the Ordinance on external evaluation of adult education institutions and sets of learning outcomes, and the method of appointing committees to deal with objections to external evaluation reports. In the past five years (2019-2023), a total of 27 public presentations and workshops were organised by the Scientific Forum, at which domestic and foreign professors were hosted as guest lecturers. Emphasis should be put on the guest lecturers from the Cornell University, New York City, USA, that held presentations on the topics “Modern challenges in life sciences: CRISPR past, present, future“, “Cornell University and Plant Transformation Facility“, Faculty of Bioresources of the Mie University, “Japan Mechanisms for caste-fate determination in temperate paper wasps: workers do not necessarily emerge as workers, and the same is true for queens“. All lectures and workshops are presented in detail in Chapter V. Scientific / artistic activity. Within the event the

Open Door Day of the Faculty of Agrobiotechnical Sciences Osijek, in the evaluated period the Faculty organised 25 lectures, 46 workshops, 105 poster presentations, 11 exhibitions and 10 installations, all of which engaged teachers, and can be considered a part of their professional development and transfer of knowledge.

In order to facilitate appointment into the scientific-teaching position of an assistant professor, the Faculty supports employees to attend general pedagogical-psychological and didactic-methodology training course, which is offered at the Faculty of Education in Osijek. Within that course, teachers improve their teaching skills. Teachers' competencies are also advanced through working with students and engaging in scientific research and professional work. Achievements can be assessed through the publication of university textbooks, books, scripts and teaching manuals in printed and/or digital editions. Teachers increase their competencies through participation in various scientific and professional (both international and domestic) projects and by publishing papers in recognised scientific and professional journals and at international and domestic conferences, all of which is described in detail in chapter V. Scientific / artistic activity. The advancement of teachers and external associates is continuously monitored within the procedure related to appointment into scientific and teaching titles and job positions in accordance with the University Ordinance on election and re-election into titles and corresponding job positions, and the University Ordinance on the assessment of assistants, postdoctoral fellows and mentors. Moreover, the Faculty organises regular workshops for mentors at the Doctoral study programme with the aim of improving doctoral education and raising awareness of the importance of mentoring of doctoral students. The workshop is organised by the Committee for the doctoral degree award in cooperation with the Office for science and the Office for international cooperation and projects, as well as with the Quality assurance office. The workshop is an excellent opportunity for mentors to improve their competencies in guidance and supervision of students. All interested teachers can also participate, but the workshop is mandatory for those teachers who assume the role of mentors for the first time. The workshop is led by Prof. Dr. Tonči Rezić, accredited educator and mentor from the Faculty of Food Technology and Biotechnology of the University of Zagreb.

The Faculty values the improvement of teachers' competencies by awarding the best teachers and associates every year on the occasion of the Faculty Day (18 October). Awards are granted in accordance with the Ordinance on rewarding the excellence of teachers and associates, which defines three categories of excellence: in teaching and working with students; in research work; and in projects, cooperation and provision of services to legal and natural persons (businessmen).

Evaluation of performance and competencies of teachers is also carried out by students in a student survey, and since 2006 the University of Osijek has been conducting a unique university student survey. The Faculty participates in that university survey, but it also conducts its own survey. All teachers have the right to get insight into the results of the survey. The results of a unique university student survey related to evaluation of teachers' performance in the last five years are presented below:

- academic year 2019./2020. – 155 completed surveys, the average grade given by students for evaluation of Faculty teachers' performance was 4.75 of 5.00
- academic year 2020./2021. – 151 completed surveys, the average grade given by students for evaluation of Faculty teachers' performance was 4.76 of 5.00
- academic year 2021./2022 – 158 completed surveys, the average grade given by students for evaluation of Faculty teachers' performance was 4.81 of 5.00
- academic year 2022/2023 – 156 completed surveys, the average grade given by students for evaluation of Faculty teachers' performance was 4.84 of 5.00.

It is visible that the students are satisfied with the teaching process and the competencies of the teachers, which the Faculty takes as a praise and an obligation for future work. In addition to the quantitative evaluations in the survey, students have the opportunity to give their comments, opinions and praise. After processing the surveys and obtaining grades and relevant student opinions, teachers are provided with the results or are given access to the results by logging in the system with their electronic identity (AAI-EduHr). Individual meetings with the Dean and the President of the Committee for quality assurance were organised for teachers, whose courses have been determined to have low exam pass rate, less than 30%. Such meetings addressed the issue of possible omissions in course delivery and aimed at raising the level of quality of the teaching process and relations with students. In order to improve the quality of studying at the Faculty, a workshop entitled Improving the quality of university teaching was delivered by Prof. Dr. Vesnica Mlinarević. The aim of this workshop was to raise awareness of the competencies in higher education and application of existing and new teaching methods in university teaching. The emphasis was put on the collaborative active learning and the positive impact of active teaching. The workshop was offered to all teachers, especially to those, who had an exam pass rate below 30%.

Each teacher has the opportunity to analyse their own survey evaluations, and to undertake corrective actions. Since the academic year 2021/2022, the Faculty has conducted a teacher self-evaluation survey to assess the following areas: teacher competencies, literature and information, quality of teaching and exams, student participation in course activities, workplace conditions, and overall quality of teaching.

During the academic year 2022/2023, a teacher self-evaluation survey on teachers' competencies showed that 71 teachers (75.5%) answered that they were most comfortable with their presentation skills; in the literature and information section, 97.5% of teachers answered that they give students instructions and evaluation criteria orally. In the part of the quality of teaching, the teachers gave an average rating of very good (4) to the statements related to students, in the following way:

- Clearly defined course objectives - 60 teachers
- I inform the students about the procedure of taking exams/preliminary exams - 81 teachers
- I clearly define the criteria for assessing students' knowledge and performance – 68 teachers
- I present the teaching content clearly – 58 teachers
- I try to motivate and encourage students to be active in classes – 65 teachers
- I am available for consultations – 75 teachers
- I inform students about postponed lectures in a timely manner, postponed lectures are delivered later on – 73 teachers.

The part related to the participation of students in teaching and their performance was rated by the teachers as very good (4), as follows:

- During lectures, students ask questions and discuss the topic – 57 (60.6%)
- Students hold oral presentations in classes – 55 (58.5%)

In the academic year 2022/2023, 51 teachers evaluated their teaching with a grade very good (4).

In the structure of the scientific-teaching staff, 94 of them participated in the mentioned survey, of whom 26.6% were full professors with tenure, 17% full professors, 25.5% associate professors, 19.1% doctoral students, 3.2% postdoctoral students, 5.3% assistants, 2.1% senior lecturers and 11% lecturers.

During 2022, there were 5 workshops on methodological skills organised with the aim of improving teachers' skills in application of theoretical and practical knowledge in the learning and teaching process and in creating new study programmes with defined learning outcomes. The workshops for 50 teachers were led by Kristina Škaler.

Surveys related to professional practice were filled out by businessmen. They assessed the satisfaction of students during the practice, and students also filled out student surveys about the completed professional practice. In addition to the self-evaluation of teachers, a survey of non-teaching staff was conducted, within which they expressed their degree of satisfaction with different aspects of daily work and proposed improvements.

International mobilities of teaching and professional staff realised in the last five years is counted in several hundreds, the data of which can be checked in the Faculty's Annual Reports published during the evaluated period. Most of the mobilities were realised through the ERASMUS+ and CEEPUS individual mobility programmes, as well as within international projects (Interreg, Horizon Prima, Erasmus+ KA2, Jean Monnet) and bilateral projects. The number of international mobilities is constantly increasing. There were 118 outgoing mobilities of teaching staff realised in duration of up to 3 months, and 21 scientific mobilities of up to 3-month duration. Compared to the previous five-year period, incoming mobility has increased significantly, so in the past five years, the Faculty was hosting 70 incoming mobilities for professional training and 117 incoming mobilities for teaching lasting up to 3 months. Significant progress was also recorded in the outgoing mobility of professional staff, who realised 378 mobilities, while the Faculty hosted 189 incoming mobilities. These data show that the development of the Faculty is based not only on education of staff in external institutions, but also on the introduction of new analytical methods in the daily work of laboratories. Likewise, visiting professors and scientists contribute to the development of teaching competencies and to intensification of international cooperation. Referring to the duration of outgoing staff mobility, the majority of mobility lasted up to 3 months (91% scientific mobility, 100% teaching and professional mobility), while 8.7% of scientific mobility lasted longer than 3 months. All of the incoming staff mobilities (100%) lasted up to 3 months. This situation is a consequence of regular activities related to the implementation of teaching, scientific and professional activities at the Faculty, and it is very difficult to find a substitute teacher for courses and scientific and professional activities in cases of teachers' absence longer than 3 months. However, in the past period, two mobilities were realised within the Fulbright programme, Prof. Dr. Edita Štefanić and Assoc. Prof. Dr. Vladimir Ivezić stayed in the USA for the purpose of training that lasted 5-7 months.

During the past five-year period, the Faculty has been a member of four international societies: Association of European Life Science Universities (ICA), European Hygienic Engineering & Design Group (EHEDG), Balkan Environmental Association (B.EN.A.), The ICA Regional Network for Central and South Eastern Europe (CASEE) and the International Association for Biological and Integrated Control (IOBC). It has been also participating in the eight CEEPUS networks:

- RO-1811-01-2324 - Deep Neural Networks (DNN), for Digital Climate Smart Agriculture (D-CSA)
- RS-1607-03-2324 - Resilient management of bioactive compounds from plants and organic wastes in Middle-Europe
- SK-1018-09-2324 - Biology, Biotechnology and Food Sciences
- SK-0405-15-2324 - Renewable energy sources
- HU-0003-19-2324 - Agriculture and Environment in the 21st Century - @groen
- RS-1706-02-2324 - Sustainable fishery and aquaculture in the 21st century – AQUA-21
- HR-1302-06-2324 - Research and Education of Environmental Risks
- SI-1817-01-2324 - Tourism and Agriculture Sustainable Alliances - #TASA network.

The Faculty organises international summer school. In the past five-year period, four international CEEPUS summer schools were organised. By participating in the summer schools, the teachers gained important experience in teaching in English language, which also contributed to internationalisation of the Faculty. Summer schools contributed to the raising of Faculty's international profiling and opened opportunities for advancement of international cooperation and project activities.

Furthermore, the Faculty maintained the trend of realising Erasmus+ mobility by a minimum of 5% of its staff per one academic year, as recommended by the Agency for Mobility and EU Programmes. During the academic year 2021/2022, the Faculty staff started participating in the new programme of Erasmus+, for which all previously established interinstitutional agreements on cooperation were renewed. With more than 100 interinstitutional agreements on cooperation with foreign universities, the Faculty is the most successful constituent of the University. The Republic of Croatia officially joined the European Research Area (ERA) on 1 July 2013, when it joined the European Union. Since then, the Faculty has participated in all key international initiatives and programmes of ERA, aiming to improve its cooperation in the research sector and to promote excellence in scientific research at the European level. The Faculty staff actively participate in international organisations, they regularly apply to public calls from the Ministry of Science and Education to obtain financing for international membership fees in scientific and professional bodies, and international databases. Every year, the applications are fully approved for funding by the Ministry or co-financed by the Faculty. The Faculty provides support to its teaching and scientific staff in their professional development and in engagement in foreign scientific-research and professional associations, such as the Association for European Life Science Universities (ICA), European Hygienic Engineering & Design Group (EHEDG), Balkan Environmental Association (B.EN.A.), the ICA Regional Network for Central and South Eastern Europe (CASEE), and the International Organisation for Biological and Integrated Control (IOBC). Teachers appointed into scientific-teaching titles used available mobility programmes (Analytic Supplement – Table 4.4.) for boosting their scientific and teaching competitiveness and for increasing the international cooperation of the Faculty.

Special attention is given to international and national competitive projects. In the academic year of the evaluation, scientific and research activities were carried out within four projects funded by the Croatian Science Foundation, of which 2 were research projects and 2 establishment projects. There were 7 projects funded by the European Regional Development Fund, 3 projects were implemented through the European Cooperation in Science and Technology, 1 project was supported by the European Space Agency, 3 Horizon Europe projects were won, 4 Erasmus+ projects, of which 2 were for Curriculum Development and 2 were scientific projects. One CASEE project and two bilateral projects were also implemented. The results of these projects are visible primarily in publication of papers. The number of papers in the WoS database increased from 278 to 505 in the last five years. In order to develop and protect patents that should arise from the results of the implemented projects, the workshop on the topic of Intellectual Property was held on 13 December 2023. The workshop provided an overview of basic information on intellectual property, as well as an overview of the steps to be undertaken in submitting an application for intellectual property protection. This workshop facilitated sharing of experiences among participants and future cooperation ideas, all with the aim of intensifying patent activity in the field of biotechnical sciences.

It should be emphasised that the Faculty approves the free study year (sabbatical) to its teachers appointed into scientific-teaching titles. In the past five-year period, three teachers (Prof. Dr. Marcela Šperanda, Prof. Dr. Jasna Šoštarić and Prof. Dr. Boris Antunović) took a sabbatical (decisions attached).

Through supporting the Alumni Club, the Faculty continuously maintains contact with its graduates. Every year, the celebration of the Faculty Day in October is seen as an occasion of setting up a Family Farm Fair and Wine Fest. Alumni of the Faculty present their agricultural products at these fairs. Lectures and round tables are organised for students. In 2023, at a round table the topic Agribusiness and innovations - challenges in food production and agronomist education was discussed.

4.4. The premises, equipment and the complete infrastructure is suitable for teaching, scientific/artistic and professional activities.

The strategic objectives related to planning and investing into infrastructure, equipment and spatial capacities of the Faculty and its Experiment stations necessary for conducting field research and practical teaching are defined in the Development Strategy of the Faculty of Agrobiotechnical Sciences Osijek 2018/2019 - 2022/2023 and in the new Strategy 2023/2024-2027/2028. The Faculty is seated in Osijek, at the address Ulica Vladimira Preloga 1 in the University Campus, in a building built in 2011, with a total area 18.600 m^2.

The Faculty constantly plans the development of its infrastructure and improves it in accordance with the defined strategic goals.

Spatial capacities of the Faculty are shown in the Analytic Supplement, Table 4.5. For teaching the Faculty disposes of 19 lecture halls with a total area of 1,778 m^2, of which there are 8 lecture rooms with 45 - 48 seats each, and 3 grand halls – amphitheatres (Aula Magna – congress hall with 350 seats, Aula Media and Aula Alta, each with 143 seats). The lecture halls are equipped with computers and the necessary technical support (overhead projectors, 2 smart boards in the halls), and access to the Internet is provided. Teaching at the Faculty is also carried out in 36 laboratory halls, with a total area of 2,088 m^2. The Faculty also disposes of 46 workplaces with a total area of 1,615 m^2 intended for scientific laboratory work and for carrying out scientific and professional activities.

As elaborated in the Chapter I, in order to assure better and more efficient management of infrastructure and investments, in 2021, the Faculty appointed a vice-dean for business and investment management, who is also responsible for the Central Agrobiotechnical Analytical Unit (CAAU). Being founded on 21 December 2021, CAAU is a newly established, independent organisational unit of the Faculty. It is managed by Prof. Dr. Karolina Vrandečić. CAAU consists of three sub-units: Sub-unit for determination of phenotypic and production characteristics, coordinated by Prof. Dr. Boris Đurđević; Sub-unit for quantitative analysis, coordinated by Prof. Dr. Prof. Dr. Marcela Šperanda; and Sub-unit for precise instrumental analysis, coordinated by Assist. Prof. Dr. Đurđica Kovačić. As of present, there are 26 staff working in the Sub-unit for determination of phenotypic and production characteristics, 3 staff are affiliated with the Sub-unit for quantitative analysis, and at the Sub-unit for precise instrumental analysis, there are 11 staff. Within CAAU, there is an analytical laboratory authorised for soil analyses and monitoring of conditions of agricultural land owned by the state in accordance with the Law on Agricultural Land (OG 20/18, 115/18 and 98/19), and the Ordinance on the Methodology for Monitoring the Condition of Agricultural Land (OG 47/ 19). Business processes at CAAU, such as receiving, proper preparation, records and storage of all samples required for teaching, scientific and professional activities of

the Faculty are carried out in the Sample standardisation centre, an independent organisational unit. The Sample standardisation centre receives, prepares, keeps a record of samples, and preserves and stores samples. Within CAAU, there are two test stations 001 and 004 for technical inspection of machines and devices used in the protection of plants. Technical inspection is performed according to the norm HRN EN ISO 16122, which is mandatory in accordance with the Act on Sustainable Use of Pesticides (OG 46/22). The laboratories also conduct research requested by law, and the procedure of giving authorisations/accreditations is carried out in accordance with valid law and by-laws. CAAU operates in accordance with the norm HRN EN ISO 9001. All analyses of soil and plant material performed by CAAU are recorded in a database called FAZOS LabOS. All activities carried out in laboratories are recorded in that database on a daily basis, e.g. records of the sample intake, analysis results and analytical reports. All external users of the services provided by the Faculty (natural and legal persons) are also recorded in the database.

Referring to the new organisational structure that was defined in 2021 by the Ordinance on internal organisation of the Faculty of Agrobiotechnical Sciences Osijek and the Ordinance on work regulations of the Central Agrobiotechnical Analytical Unit, joint areas for reception, preparation and storage of samples and a storage area of 133 m^2 are recorded as the areas necessary for CAAU operations together with other workplaces (46 laboratories).

At the Faculty, there are at students' disposal 4 areas spreading on 1,268 m^2, equipped with 30 computers. Also, the Faculty provides space for the Student Union, a space for socialising and studying in the Educational and Promotional Atrium located on the ground floor of the building on an area of 840 m^2, and a library space with a reading room. Spatial capacity for students amounts to 5,293 m^2. Also, on the ground floor of the building, there is a 60 m^2 of the printing room that offers services to students and teachers, such as the sale of Faculty textbooks and books, printing and photocopying services, and procurement of office consumables. The Faculty disposed of 121 teacher offices on a total area of 2,026 m^2. Teacher offices are equipped with 132 computers and new and modern office furniture. The average area of an office is 15.83 m^2, and all teacher offices are functional and suitable for teaching and scientific activities. There are 17 offices used by professional services and the Dean's office, spreading on 535 m^2, which accommodate 49 employees.

The IT equipment and the work of the Faculty's IT service is complying with high standards. Most computers (laptops and desktop PCs) are equipped with the latest operating systems. The IT equipment is on average between 1 and 4 years old. The majority of employees have a personal computer and most of teachers also have a laptop, purchased with the funds of various projects or cooperation initiatives. Laptops are also actively used in the teaching process. The equipment in the server room includes the most modern HP servers of the Proliant series, with Intel Xeon processors, which perform batch processing of the users' requests (students, guests and employees). The CARNET node and equipment is on average up to three years old and it is in excellent condition. The web server www.Fakultet.hr works 24/7 throughout the year, facilitating services for around 1,000 users. The local network is of the latest generation, the speed is 1 Gbit/s. The network from the server room to the offices/rooms on all floors is connected by optical cables, where they are split into HP 1Gb/s switch devices and further transmitted via Optical/Digital converters to the user's sockets. The wireless network is segmented into separate LAN sections with a local set of IP addresses, in order to protect the network from outside access. The entire Faculty building is segmented with a wireless signal from Ubiquiti and offers a password connection to guests, students and employees from any location within the building.

As stated in the Analytic Supplement, Table 4.6., there were 4 pieces of capital equipment procured by the Faculty in the past five years, the value of each piece value exceeds 200,000 HRK: FitoClima 12.000 PLH configuration 1 (LED):4x30W, FitoClima 12.000 PLH configuration 2 (LED): 8x30W, Fermentor Jupiter 10.0, PrimacsSNC-100; Total Carbon & Total Nitrogen. The mentioned capital equipment is used in the analysis of soil, plant and animal material, in physiology and feeding of domestic animals, plant protection, microbiology and application of pesticides, and in Experiment stations. The mentioned capital equipment and its specifications are published in the second edition of the Faculty's Catalogue of equipment. Scientific equipment is also entered in the database Šestar (CroRis).

By its strategic objectives, the Faculty puts special emphasis on the development of its Experiment stations as separate organisational units for carrying out one part of the teaching process (exercises and professional practice), scientific research and professional work as well as international cooperation. The Faculty disposes of four Experiment stations located in Tenja, Antunovac, Mandićevac and Bilje, on a total area of 96.75 ha. The Faculty is owner of 3.67 ha of land in Mandićevac, where it grows a vineyard with several grape varieties. The Bilje Research Centre was founded in 2022 with the purpose of setting up an apiary and conducting scientific research in the field of beekeeping and biopollination. Experiment stations are focused on research into plant production by combining it with practical education of students. Therefore, practical education of students is carried out as part of scientific research and commercial production of agricultural plants at all Experiment stations. In addition to the implementation of research projects, the Faculty's Experiment stations conduct the National Programme for the conservation and sustainable use of plant genetic resources for food and agriculture in the Republic of Croatia (BGI). The Programme is carried out by several working groups. Modern greenhouse is available for research and teaching about various plant regeneration and multiplication, and there is also a well for irrigation. It should be emphasised that on 20 September 2023, the Ambassador of the State of Israel, His Excellency Gary Koren visited the Faculty and the Experiment station in Tenja. On the occasion of the visit, it was agreed to continue the project of smart irrigation at the Experiment station for innovation and technology transfer in Tenja. Topics for bilateral meetings of researchers and professors were determined. At the Experiment station in Tenja, there is a National Security Collection of ten traditional continental fruit species with about 200 varieties.

By the end of 2022, there were additional investments made in the Faculty's Experiment station on the cadastre plot 1312/1. Within the BGI Programme, the Tenja Experiment station was additionally equipped with various attaching devices for machines for soil processing. In 2021, the Faculty started with preparations of the project documentation for construction of a smart multifunctional farm and fish pond (aquaponics technology) within the project "Developmental Research BioPark for Hunting, Fishing and Beekeeping", within which the modernisation of the scientific infrastructure will be completed. However, during 2022, the project was renamed into the Biopark for Animal Production and Biotechnology, and a conceptual project was created for the purpose of obtaining a building permit. Another project on the development of the Scientific-research Centre for vines and wine in Mandićevac has been continued. Within the Interreg call VI-A IPA Programme Croatia-Serbia 2021- 2027, the Experiment station in Mandićevac won the project "Adaptation of viticulture to climate change through the valorisation and implementation of adaptable genotypes of grapevines - (ADAPTVitis), in the value of 2,553,457.17 EUR. Project partner is the Faculty of Agriculture in Novi Sad, Serbia.

The Experiment stations are serving as a training site for practical training of students, as well as for scientific research and professional work. In order to connect science and practice and implement modern techniques and technologies in production, each year Experiment stations organise Field Days for students and all interested producers. Also, for the purpose of carrying out

the professional practice of students and sharing of information with the public and farmers, numerous demonstration experiments are set up, some of which are:

1. Seed production of barley and soybeans – Agricultural Institute Osijek
2. Experiments on several sorts of agricultural plants – KWS Sjeme Ltd.
3. Experiments on several sorts of agricultural plants – Cerera agro Ltd.
4. Experiments on several hybrids of corn and rapeseed – Bc Institute
5. Experiments with biostimulators – Timac Agro
6. Experiments on sunflower – KWS Hungary

Furthermore, during the academic year 2022/2023, the Experiment stations performed 10 scientific experiments (Table 4.1.).

Table 4.1. Scientific research projects conducted at the Faculty's Experiment stations in the academic year 2022/2023

Name of the project/research	Project/Research coordinator
Optimisation of soil management - adaptation of agroecosystems and agrotechnical measures to climate change - AGROEKOTEH	Prof. Dr. Zdenko Lončarić
Application of nanobiotechnology in food supplementation with selenium - NutriNTENSe	Assoc. Prof. Dr. Tomislav Vinković
Twin-row experiments	Prof. Dr. Đuro Banaj, Prof. Dr. Bojan Stipešević
Innovative production of organic fertilisers and substrates for growing of seedlings	Prof. Dr. Zdenko Lončarić
APPLERESIST - Genetic resistance of apples to heat and drought stress and determination of assortment for the production in continental Croatia	Assoc. Prof. Dr. Tomislav Vinković
National programme for the protection of plant genetic resources	**Leaders of working groups**
The influence of the consociation of short rotation crops and field crops on soil fertility	Assist. Prof. Dr. Vladimir Zebec
Rammed earth for modelling and standardisation in seismically active areas RE-forMS	Assist. Prof. Dr. Ivana Varga Assist. Prof. Dr. Dario Iljkić
Projects in realisation	
Establishment of experimental fields for irrigation of agricultural crops - Smart irrigation system	Prof. Dr. Tomislav Vinković Prof. Dr. Krunoslav Zmaić

In 2023, the Faculty established the Biotechnical Scientific Research Centre (BSRC), that disposes of an area of 1,500 m^2. BSRC shall deal with the transfer of scientific research project results into commercial projects. The Centre strengthens the scientific and research potential through an organised system of management of human resources and laboratory equipment. At BSRC, students are introduced with the latest technologies applied in science and practice.

To sum up, we believe that the space, equipment and entire infrastructure (laboratories, IT service, experiment stations, etc.) are suitable for the realisation of teaching within study programmes and that the spatial capacities and equipment ensure the achievement of the intended learning outcomes as well as the realisation of scientific and professional activities. Spatial capacities of the Faculty are sufficient to accommodate all students admitted to study programmes according to determined quota, i.e. the Faculty can provide enough space for interactive work with each student.

4.5. The library and library equipment, including access to additional resources, ensure the availability of literature and other resources necessary for a high-quality of study and scientific-teaching/artistic-teaching activities.

The Faculty Library is an organisational unit of the Faculty that belongs to the Department of Science and IT Systems. The library provides quality support for implementation of teaching, scientific research and professional activities. On the area of 364.42 m^2, there is a lending service of the Library, a reading room, 2 offices and a closed storage room. The library is equipped with 3 computers for employees, 24 computers for students, a printer, a digital photocopier and a paper binding device. The reading room disposes of 62 seats, and the total area for users is 204.42 m^2. Places for quiet work are available in the premises of the University Library and the Faculty reading room. The Faculty Library provides professional literature for students and teachers.

The Library fund collects 13,248 books. There are 3,437 books for obligatory reading (Analytic Supplement, Table 4.7). The total number of copies of obligatory literature textbooks is 12,188. In addition to books, the Library fund includes: 2,135 graduation theses, 3,700 diploma papers (defended by the old study system) and 1,727 master theses defended by the Bologna process rules, 185 master of science papers, 17 specialist papers and 219 doctoral dissertation defended at the Faculty. All theses and papers are stored in digital form in the open access Repository of the Faculty of Agrobiotechnical Sciences Osijek called “DABAR“.

The total number of printed journals is 108, in addition to the Faculty’s journal Poljoprivreda / Agriculture. Digital journals with complete texts are available through the Portal of electronic sources for academic and scientific community (http://baze.nsk.hr/). The Library provides services to 1,151 students (all majors, full-time and part-time students), and all of them use electronic book lending service via CROLIST. Library services are used by all Faculty teachers, employees and external users. The Library cooperates with other libraries in the country and abroad, primarily for interlibrary loan of books and acquisition of preprints of scientific papers from journals that the Library does not have in its collection. The Library cooperates with the City and University Library of Osijek, and with libraries included in the system of the former SZI Prirodoslovlje. Furthermore, the Library has access to other libraries' catalogues, databases and electronic journals, which can be accessed from the Library's website. The library participates in the publication of textbooks and the journal Poljoprivreda / Agriculture through the allocation of a catalogue number. Library employees participate in seminars organised for librarians working in the system of science and higher education. As part of their continuing professional education, they also participate in seminars organised by the National and University Library Zagreb, the Faculty of Philosophy and the City and University Library of Osijek.

The library collections consist of monographs and serial publications in Croatian and foreign languages, covering the fields of chemistry, mathematics, biology, climatology, genetics, general and special farming, general and special animal husbandry, agricultural mechanisation, environmental protection, veterinary medicine, agroeconomics and sociology, and the reference collection includes encyclopaedia, dictionaries, lexicons, atlases, address books and bibliographies. Library materials are purchased by the Faculty or acquired by exchange and donations. Students and employees can search online databases. Employees and students of the

Faculty have permanent access to the digital Book Catalogue and domestic and foreign periodicals, dissertations, specialist theses, as well as bachelor and master theses. Since 2010, all theses and dissertations as well as papers in journals are stored in the Faculty Library.

The Library and its reading room are open for students, teaching and non-teaching staff, as well as for external users from other University of Osijek constituents every working day from 8 am to 6 pm, as defined in the Ordinance on work regulations of the Library. There are 3 librarians employed, and they are available to users 50 hours a week. Students can loan 3 books for a period of 15 days and the loan period can be extended for additional 15 days. Faculty teachers can loan books permanently, yet they have to return them before retirement. Employees of other faculties and scientific institutions and external users loan books for a period of 15 days. Library materials from the reference collection, dissertations, master's theses, graduation theses, and books from the collection of old books are available only inside the Library. Such materials are loaned exclusively in the reading room. The reading room can be used by all users for individual or group work. It is equipped with 27 computers with Internet access, and citation databases and full-text databases can be accessed through the National and University Library (NSK) portal, as well as through the HRČAK portal - the portal of scientific journals in Croatia and other publicly available sources (CROSBI database, FAO, Google Scholar, etc.). In the reading room, users can use the entire library collection and their own literature, as well as personal laptops. The library acquires library materials from other libraries in the country and abroad in accordance with national and foreign regulations. Books and other materials are acquired through interlibrary loan service. Costs of such services are covered by users or the Faculty. External users cover such costs for themselves. Materials are ordered in writing via the website. For preparation of seminars and theses, the library provides a literature preparation service. Service of searching the citation databases Web of Science, Scopus, CAB Abstracts, Journal Citation Reports (JCR) and Scimago Journal & Country Rank is offered to Faculty staff. The Library also issues certificates of mentoring and co-mentoring and certificates of indexation and citation of papers for the purposes of appointment and re-appointment into titles and career advancement.

Publication of scientific and professional papers significantly contributes to the overall publishing activity of the Faculty, which is defined by the Ordinance on the publishing activity of the Faculty of Agrobiotechnical Sciences Osijek. The publishing activity of the Faculty is a result of the scientific and professional engagement of its employees, and as such, it contributes to the affirmation and development of the Faculty. Together with the library fund, published papers represent the main part of the teaching infrastructure. The publishing activity of the Faculty includes the publication of textbooks, books, proceedings of scientific and professional conferences, periodicals and other official publications. In cooperation with the Agricultural Institute Osijek, the Faculty co-publishes the scientific and professional journal Poljoprivreda / Agriculture. The journal collects papers from all areas of agronomy science and profession. Papers published in the journal Poljoprivreda / Agriculture are cited in the databases Web of Science, CAB International (CAB Abstract), SCOPUS, DOAJ, HRČAK and in the National and University Library. The journal is published twice a year and is financially supported by the Ministry of Science and Education. Students evaluate the quality of library services through a student survey implemented by the Quality assurance office. The results of the survey are used in definition of measures for improvement of services and for elimination of identified weaknesses.

4.6. The higher education institution provides the necessary financial resources to conduct teaching, scientific and professional activities.

The Faculty generates income according to the funding sources determined by Article 107 of the Act on Scientific Activity and Higher Education. The Faculty generates its own income and other income outside of state budget funding by performing teaching, scientific research, professional and other activities that are not financed from the state budget. Income from subsidies for participation in the study costs of full-time students at undergraduate university studies and graduate university studies realised on the basis of a special contract concluded between the Ministry of Science and Education and the Faculty refer to the earmarked fund of the Faculty. The largest percentage of funds comes from the budget for salaries and other employee benefits (Analytic Supplement, Table 4.8). There is a financial plan of the Faculty adopted for each year, and the execution of the financial plan is monitored regularly on annual and bi-annual basis. The Dean presents realisation of financial plan every six months at the Faculty Council session. The availability of funds for conducting studies is secured in the programme contracts and from tuition fees. The Dean consults with the vice-dean for business and investment management about all issues related to the financial plan and the disposal of funds, which guarantees transparency and efficiency in management of financial resources.

Spending of finances generated according to special regulations (tuition fees) and Faculty's own income (generated from domestic and international scientific projects and scientific-research activities, cooperation with the economy and professional activities, preparation of expert studies and opinions, professional and scientific meetings, lifelong learning programmes and training courses, certification of machines and devices, renting of spaces and equipment, publishing, etc.) is regulated in the Ordinance on the criteria and method of spending income generated on the market by performance of Faculty's activities dated 03 June 2014, and in the Decision on amendments to the Ordinance on the criteria and method of spending income generated on the market by performance of Faculty's activities dated 28 November 2014. The Faculty complies with the Ordinance on financial management of Josip Juraj Strossmayer University of Osijek adopted on 08 March 2010. On 26 October 2018, the Faculty Council adopted the new Ordinance on earning of funds and the rights of spending own, earmarked and other funds of the Faculty of Agrobiotechnical Sciences Osijek. In addition to financing of costs of carrying out the activity from which the Faculty generates own income, those funds from own income are also used to cover the material costs of the Faculty, to improve the Faculty's activities (investment in and maintenance of the Faculty, material costs of the Faculty, procurement of equipment, literature, procurement of non-financial assets, etc.), to increase employees' salaries and to provide funds for the University Development Fund. In accordance with the strategic objectives of the Faculty's scientific development, the establishment of CAAU as an independent organisational unit, requires investments into the purchase of new scientific equipment, which is determined in the Decision on strategic equipment to be acquired in the period 2022-2026.

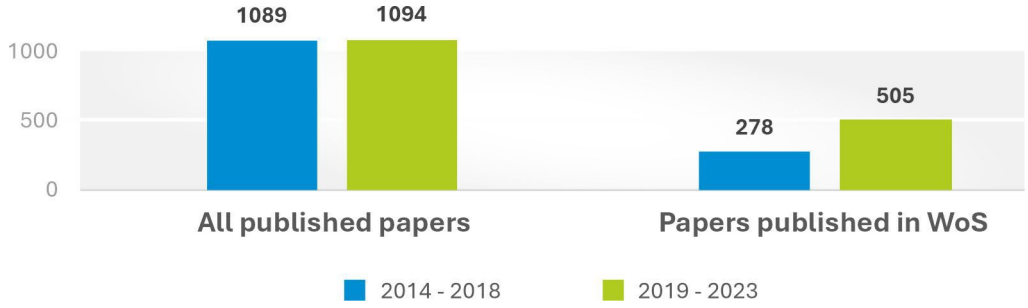
In order to assure transparent and rational spending of income, maintenance and improvement of regular activities and realisation of the procurement plan, the Faculty is obliged to comply with the Act on Public Procurement, the internal Ordinance on the implementation of procedures for simple procurement of goods and services and the procedure for receiving and controlling of invoices and paying of invoices. Pursuant to the Act on Public Procurement, the Faculty publishes the procurement plan and the register of public procurement contracts on the Faculty's website. Calls for collection of tenders in simple procurement are carried out in accordance with the Ordinance on the implementation of procedures for simple procurement of goods and services and the procedure for receiving and controlling the invoices and paying of invoices. Financial reports for the years 2019, 2020, 2021, 2022 and 2023 are published on the Faculty website. By analysing those reports (Analytic Supplement, Table 4.8.), it is evident that the Faculty continuously earns more income than it spends on business expenses. The Faculty uses its financial resources transparently, efficiently and expediently, and the generated surplus of income confirms the Faculty's financial sustainability.

V. Research/artistic and professional activity

5.1. The higher education institution is recognisable by scientific research and/or artistic achievements in all the scientific fields in which it conducts studies.

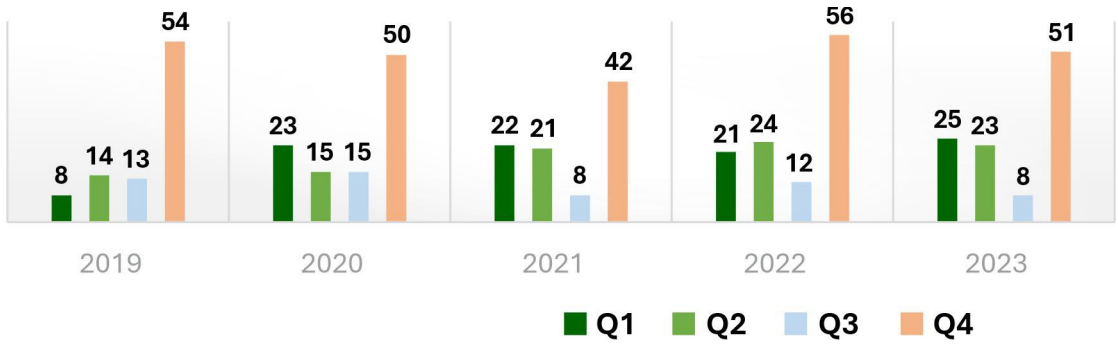
The Faculty of Agrobiotechnical Sciences Osijek is a modern higher education and scientific institution focused on the development and application of new knowledge and technologies. By following its main strategic objectives of development, it applies high standards in scientific research, higher education and in professional activities. The Faculty successfully implements research projects, not only in the field of biotechnical sciences, but also in the interdisciplinary field of science. Significant publishing activity refers to publishing of papers that present results of realised projects, outcomes of cooperation with other national and foreign institutions as well as cooperation with the economy. In the evaluated period, the Faculty employees were engaged in the scientific centres of excellence, they organised many domestic and international scientific conferences, consultations, symposia and similar events. As stated in the Faculty Development Strategy 2018/2019-2022/2023 and in the Strategic programme for scientific research 2019-2023, the main strategic objectives of the Faculty's development refer to continuous improvement of the quality of scientific research activities, effective use of research capacities and raising of Faculty's visibility and recognition in a multidisciplinary research environment. The specified objectives have been achieved to a significant extent, which is described in the reports on the implementation of the strategic documents of the Faculty (Report on the realisation of the Strategy and Strategic programme for scientific research). There are also new strategic documents adopted (Faculty Development Strategy 2023/2024-2027/2028 and Strategic programme for scientific research 2024-2028) and put into implementation. In the new Faculty Development Strategy, five objectives with stated strategic aims, measures and performance indicators are highlighted: Encouraging development and improvement of human and material resources through digital transformation; Teaching activity and students; Scientific research activity; International relations; and Cooperation with economy sector and transfer of knowledge and technology. In the new Strategic programme of scientific research, there are priority areas and topics of research determined, along with measures and indicators of success for 6 strategic aims (Continuous improvement of scientific excellence through increased implementation of competitive projects and increased scientific production; More efficient use and modernisation of the existing research infrastructure; Increase in the number of excellent graduate students and young scientists employed at the Faculty through projects and cooperation with the economy sector; Raising the quality of the Doctoral study programme and teaching performance on doctoral studies; Fully adopt the open science concept and increase awareness of intellectual property rights; and Increase in the number of activities for popularisation and promotion of science).

In the period from 2019 to 2023, the Faculty employees published 1,094 papers, of which 505 were published in journals indexed in the WoS reference database.



Graph 5.1. Comparison of published papers with the previous five-year period

As presented in Graph 5.1, there was a slight increase in the total number of published papers (1,094 papers) in the evaluated period if compared with the period from 2014-2018, when the Faculty published 1,089 papers. Out of the total number of published and indexed papers in the period from 2019-2023, there were 505 papers published in journals indexed in WoS, while that number was significantly lower (278 papers) in the period 2014-2018. Referring to papers published in conference proceedings, the Faculty employees published less papers (360) in the evaluated period in comparison to the previous 5-year period, when that number reached 472 papers. Such occurrence can be connected with the absence of some traditional symposia in the observed period because of the COVID-19 pandemic. The analysis of indexed publications in the WoS database showed that in the observed period, the Faculty employees published 98 papers in journals of the Q1 quartile and also 98 papers in Q2, while 56 papers were published in Q3, and 253 papers were published in Q4. These data represent a significant increase when compared to the period 2014-2018, during which 26 papers were published in journals of the Q1 quartile, and 30 papers in Q2 quartile, according to data of JCR for 2018. Referring to citations in the period 2019-2023, the number of citations in the WoS database was 3,829 with an h-index of 27, while in the period 2014-2018, the number of citations was significantly lower and amounted to 689, with the h-index of the Faculty being 13. After differentiating the papers from the WoS database, in the observed period the Scopus database lists another 28 papers and the total number of citations was 123, while the Faculty's h-index was 5. In addition to the mentioned papers, in the observed period the CAB Abstract database indexed another 92 papers published in journals and 136 papers published in conference proceedings. In addition to the databases of indexed papers, CROSBI lists additional 56 scientific and professional papers published in journals that were not indexed in the databases, and 223 papers in conference proceedings that are also not indexed in the databases. Altogether, the number of published papers in the period 2019-2023 amounted to a total of 1,094 papers (681 scientific, 53 professional and 360 in proceedings).



Graph 5.2. Distribution of papers published in WoS per quartiles from 2019-2023

In recent years, the Faculty employees publish their scientific papers in journals with a higher impact factor. It contributes to better profiling of employees when they publish papers in journals indexed in the WoS database with a higher impact factor and in a higher quartile. The scientific-teaching staff of the Faculty has to meet a new criterion for the appointment into higher scientific-teaching titles, as defined in the new Ordinance on conditions for appointment into scientific titles (OG 28/17), so they need to publish papers as first authors in the category a1 to meet the criterion. The Faculty also encourages its staff to publish papers in the highly-ranked journals. The Faculty staff choose journals that are indexed in renowned citation databases (WoS), as it brings them greater visibility and better citations, which also confirms the quality of published papers. Most of the published papers refer to the scientific field of Biotechnical sciences, the area of agriculture and related areas. The Faculty's scientific and research activities are carried out also in the fields of Natural sciences (chemistry and biology), Biomedicine and health (veterinary medicine, food safety), Technical sciences (mechanical engineering), Social sciences (economics) and Humanities (philology). This corresponds to the structure of Faculty employees, as presented in Table 5.1.

Table 5.1. Structure of Faculty employees involved in the teaching process

Scientific field	FPT	FP	AP	DOC	SL	L	SA	AS	TOTAL
Biotechnical sciences	36	20	22	22	0	0	6	6	*112*
Natural sciences	0	1	2	0	0	1	0	3	*7*
Social sciences	2	1	0	0	2	0	0	1	*6*
Technical sciences	1	0	0	0	0	0	1	1	*3*
Humanities	0	0	1	0	0	1	0	0	*2*
Biomedicine and health	2	0	0	0	0	0	0	0	*2*
Interdisciplinary field	0	1	0	0	0	0	0	1	*2*
TOTAL	*41*	*23*	*25*	*22*	*2*	*2*	*7*	*12*	*134*

FPT – full professors with tenure; FP - full professors; AP- associate professors; DOC – assistant professors (docent); SL-senior lecturers; L – lecturers; SA – senior assistants; AS - assistants

The Table 5.1 shows that the Faculty employed 134 teachers at job positions in all fields of science. The most teachers, 112 of them (83.58 %), were appointed to job positions in the field of Biotechnical sciences, followed by 7 teachers in Natural sciences (5.22%), 6 teachers in Social sciences (4.48%), 3 in Technical sciences (2.24%), and 2 teachers per each field of Humanities, Biomedicine and health and Interdisciplinary sciences (1.49% each). Such a profile of staff shows that the Faculty is a scientific institution in the field of Biotechnical sciences, but it also pursues interdisciplinary nature of scientific research and teaching work.

The Faculty has made significant efforts to encourage development for competitive scientific research project proposals to be funded within national and international frameworks and in accordance with the European framework programme for research and innovation. At the same time, Faculty's scientists contribute to increased international visibility of the Faculty, which is manifested through publication of papers in highly-ranked scientific journals indexed in databases (WoS, Scopus) with significant citations.

In the evaluated period, the Faculty employees published 681 scientific papers, of which 332 (48.75%) papers resulted from cooperation with other institutions in the Republic of Croatia, and 180 (26.43%) papers resulted from international cooperation. Out of the total number, 418 papers (61.38%) are in the open access. According to their distribution in the citation databases, the most papers, 360 or 52.86%, are in the WoSCC citation database, followed by the ESCI database with 140 papers (20.70%) and the Scopus database with 28 papers (4,11%; when excluding papers

indexed in the previous two citation databases), and the number of scientific papers published in other journals reached 150 (22.03%).

In the evaluated period, the Faculty employees published 53 professional papers in journals, which speaks in favour of the significant professional activity realised at the Faculty. Professional papers are prepared within professional cooperation with the agricultural sector. Such cooperation is well developed. It is based on 224 agreements on professional cooperation with economic entities from five Slavonian counties.

In Table 5.2., there is an overview of 25 most important papers published by the Faculty's scientists in the evaluated period. The papers are listed according to the journal's impact factor, quartile, the number of citations, and open access.

Table 5.2. The most important papers published by the Faculty's scientists in 2019-2023 ranked by the impact factor

Ord. No.	Paper	Impact factor (2023)	Quartile	Category and rank	Open access	No. of citation	
						WoS	Scopus
1.	Bušić, V., Roca, S., Vikić-Topić, D., **Vrandečić, K., Ćosić, J.,** Molnar, M., Gašo-Sokač, D. (2020): Eco-friendly quaternization of nicotinamide and 2-bromoacetophenones in deep eutectic solvents. Antifungal activity of the products. Environmental Chemistry Letters, 18 (3), pp. 889-894.	15.7	Q1	Chemistry, multidisciplinary	YES (ProQuest)	8	8
2.	**Antunović, B.,** Blagojević, B., Johler, S., Guldimann, C., Vieira-Pinto, M., Vagsholm, I., Meemken, D., Alvseike, O., Georgiev, M., Alban, L. (2021): Challenges and opportunities in the implementation of new meat inspection systems in Europe. Trends in Food Science & Technology, 116, pp. 460-467.	15.3	Q1	Food science & technology 2/142	YES (All Open Access, Gold-Hybrid; Green Published)	17	19
3.	Kirana Rizky P., Gaurav, K., Arora, S., Wiesenberger, G., Doppler, M., Michel, S., Zimmerl, S., **Matić, M.,** Eze, C., Kumar, M., Topuz, A., Lemmens, M., Schuhmacher, R., Adam, G., Wulff, B., Buerstmayr, H., Steiner, B. (2023): Identification of a UDP-glucosyltransferase conferring deoxynivalenol resistance in Aegilops tauschii and wheat. Plant Biotechnology Journal, 21 (1), pp. 109-121.	13.8	Q1	Biotechnology & applied microbiology 6/158	YES (All Open Access, Gold, Green Published)	4	4

4.	Tišma, M., Žnidaršic-Plazl, P., Selo, G., Tolj, I., **Šperanda, M.,** Bucić-Kojić, A., Planinić, M. (2021): Trametes versicolor in lignocellulose-based bioeconomy: State of the art, challenges and opportunities. Bioresource Technology 330, 124997.	11.4	Q1	Agricultural engineering 1/14	NO	38	47
5.	**Kovačić, Đ., Kralik, D.,** Rupčić, S., **Jovičić, D., Spajić, R.**, Tišma, M. (2019): Electroporation of harvest residues for enhanced biogas production in anaerobic co-digestion with dairy cow manure. Bioresource Technology 274, pp. 215-224.	11.4	Q1	Agricultural engineering 1/14	NO	10	10
6.	**Radočaj**, **D.,** Gašparović, M., Radočaj, P., **Jurišić**, **M.** (2023): Geospatial prediction of total soil carbon in European agricultural land based on deep learning. Science of the Total Environment 912, 169647.	9.8	Q1	Environmental sciences 26/275	NO	0	0
7.	Bjedov, D., Velki, M., Toth, Marijić, L., Filipović, V., Mikuška, T., Jurinović, L., Ečimović, S., **Lončarić**, **Z.,** Sariri, S., Al Marsoomi, Y., Mikuška, A. (2023): Heavy metal(loid) effect on multi-biomarker responses in apex predator: Novel assays in the monitoring of white stork nestlings. Environmental Pollution 324, 121398.	8.9	Q1	Environmental sciences 28/275	NO	2	3
8.	**Antunović**, **Z., Mioč**, **B., Klir**, **Ž.,** Širić, I., Držaić, V., **Lončarić**, **Z., Bukvić**, **G., Novoselec**, **J.** (2020): Concentrations of mercury and other elements in ewes' milk: Effect of lactation stage. Chemosphere 261, 128128.	8.8	Q1	Environmental sciences 30/275	YES (All Open Access, Gold-Hybrid)	8	8
9.	Selmani, A., Ulm, L., Kasemets, K., Kurvet, I., Erceg, I., Barbir, R., Santini, P.B., Santini, Marion, P., Delač, I., **Vinković**, **T.**; Krivohlavek, A., Sikirić Dutour, M., Kahru, A., Vrcek Vinković, I. (2020): Stability and toxicity of differently coated selenium nanoparticles under model environmental exposure settings. Chemosphere 250, 126265.	8.8	Q1	Environmental sciences 30/275	NO	24	26

10.	Lončarić, Z., Hackenberger, D.K., **Jug**, **I.,** Hackenberger, B.K. (2020): Is nano ZnO/chlorpyrifos mixture more harmful to earthworms than bulk ZnO? A multigeneration approach. Chemosphere 247, 125885.	8.8	Q1	Environmental sciences 30/275	NO	8	12
11.	Zurak, D., Gunjević, V., Grbeša, D., Svećnjak, Z., **Kralik**, **Z.,** Košević, M., Džidic, A., Pirgozliev, V., Kljak, K. (2023): Kernel properties related to carotenoid release during in vitro gastrointestinal digestion in commercial dent maize hybrids. Food Chemistry 435, 137535.	8.8	Q1	Food science & technology 9/142	NO	2	2
12.	Popović, B.M., Blagojević, B., Kucharska, A.Z., **Agić**, **D.,** Magazin, N., Milović, M., Serra, A.T. (2021): Exploring fruits from genus Prunus as a source of potential pharmaceutical agents - In vitro and in silico study. Food Chemistry 358, 129812.	8.8	Q1	Food science & technology 9/142	NO	18	19
13.	Blagojević, B., **Agić**, **D.,** Serra, A.T., Matić, S., Matovina, M., Bijelić, S., Popović, B.M. (2021): An in vitro and in silico evaluation of bioactive potential of cornelian cherry (Cornus mas L.) extracts rich in polyphenols and iridoids. Food Chemistry 335, 127619.	8.8	Q1	Food science & technology 9/142	NO	32	33
14.	**Radočaj**, **D., Jurišić**, **M.,** Gašparović, M. (2022): A wildfire growth prediction and evaluation approach using Landsat and MODIS dana. Journal of Environmental Management 304, br. članka: 114351.	8.7	Q1	Environmental sciences 31/275	NO	14	16
15.	**Varga**, **I., Radočaj**, **D., Jurišić**, **M.,** Kulundžic Markulj, A., **Antunović**, **M.** (2023): Prediction of sugar beet yield and quality parameters with varying nitrogen fertilization using ensemble decision trees and artificial neural networks. Computers and Electronics in Agriculture 212, 108076.	8.3	Q1	Agriculture, multidisciplinary 1/58	NO	3	4

16.	Gasparović, M., Zrinjski, M., Barković, Đ., **Radočaj**, **D.** (2020): An automatic method for weed mapping in oat fields based on UAV imagery. Computers and Electronics in Agriculture 173, 105385.	8.3	Q1	Agriculture, multidisciplinary 1/58	NO	68	80
17.	Glavaš, H., **Bobić**, **T.,** Dorić, D., Lenard Božić D. (2019): Infrared thermography camera protection in dairy farming management. Computers and Electronics in Agriculture 157, pp. 604-615.	8.3	Q1	Agriculture, multidisciplinary 1/58	NO	4	3
18.	**Kovačić**, **Đ.,** Rupčić, S., **Kralik**, **D., Jovičić**, **D., Spajić, R.,** Tišma, M. (2021): Pulsed electric field: An emerging pretreatment technology in a biogas production. Waste Management 120, pp. 467-483.	8.1	Q1	Environmental sciences 35/275	NO	20	31
19.	Tomašević, I., Bahelka, I., Čandek-Potokar, M., Citek, J., Djekic, I., **Djurkin Kušec, I.,** Getya, A., Guerrero, L., Iordachescu, G., Ivanova, S., Nakov, D., Solowiej, B., Szabo, Cs., Tudoreanu, L., Weiler U., Font-i-Furnols, M. (2020): Attitudes and beliefs of Eastern European consumers towards piglet castration and meat from castrated pigs 160, 107965.	7.1	Q1	Food science & technology 12/142	YES (All Open Access, Gold-Hybrid, Green Published, Green Accepted)	22	31
20.	**Bešlo**, **D.,** Golubić, N., **Rastija**, **V., Agić**, **D., Karnaš**, **M., Šubarić**, **D.,** Lučić, B. (2023): Antioxidant Activity, Metabolism, and Bioavailability of Polyphenols in the Diet of Animals. Antioxidants 12 (6), 1141.	7	Q1	Food science & technology 13/142	YES (All Open Access, Gold, Green Published)	21	26
21.	**Novoselec**, **J., Klir Šalavardić**, **Ž., Đidara**, **M., Novoselec**, **M.,** Vuković, R., Čavar, S., **Antunović**, **Z.** (2022): The Effect of Maternal Dietary Selenium Supplementation on Blood Antioxidant and Metabolic Status of Ewes and Their Lambs. Antioxidants 11(9), 1664.	7	Q1	Food science & technology 13/142	YES (All Open Access, Gold, Green Published)	6	7
22.	**Bešlo**, **D.,** Došlić, G., **Agić**, **D., Rastija**, **V., Šperanda**, **M., Gantner**, **V.,** Lučić, B. (2022): Polyphenols in Ruminant Nutrition and Their Effects on Reproduction. Antioxidants 11(5), 970.	7	Q1	Food science & technology 13/142	YES (All Open Access, Gold, Green Published)	22	26

23.	Mihaljević, Z., **Kujundžić**, **T.,** Jukić, V., Stupin, A., **Drenjančević**, **M.,** Drenjančević, I. (2022): White Wine-Induced Endothelium-Dependent Vasorelaxation in Sprague-Dawley Rats. Antioxidants 11(5), 944	7	Q1	Food science & technology 13/142	YES (All Open Access, Gold, Green Published)	1	1
24.	Roskarić, P., **Šperanda, M.,** Masek, T., Verbanac, D., Starčević, K., (2021): Low Dietary n6/n3 Ratio Attenuates Changes in the NRF 2 Gene Expression, Lipid Peroxidation, and Inflammatory Markers Induced by Fructose Overconsumption in the Rat Abdominal Adipose Tissue. Antioxidants 10(12), 2005.	7	Q1	Food science & technology 13/142	YES (All Open Access, Gold, Green Published)	4	4
25.	Jukić, I., Kolobarić, N., Stupin, A., Matić, A., Kozina, N., Mihaljević, Z., Mihalj, M., Šušnjara, P., Stupin, M., Curić, Ž., Breskić, Selthofer-Relatić, K., Kibel, A., Lukinac, A., Kolar, L., **Kralik**, **G., Kralik**, **Z.,** Szechenyi, A., Jozanović, M., Galović, O., Medvidović-Kosanović, M., Drenjančević, I. (2021): Carnosine, Small but Mighty-Prospect of Use as Functional Ingredient for Functional Food Formulation. Antioxidants 10(7), 1037.	7	Q1	Food science & technology 13/142	YES (All Open Access, Gold, Green Published)	38	39
Total/Average		229.9/ 9.196	25 Q1		11 Open access /14 NO	394	458

The average impact factor of the journals in which the above-mentioned scientific papers were published was 9.196 (ranging from 15.7 to 7.0). In addition to the impact factor, which is relevant when comparing journals within the same scientific field (WoS category), all 25 listed papers are in the first quartile (Q1) of journals of specific WoS categories. Papers published by the Faculty's scientists are usually covering interdisciplinary areas, biotechnical sciences and related fields. The narrow area of agriculture, according to WoS, covers several different categories (JCR® Category), within which there are different ranges of impact factors. It can be stated that the impact factors of journals related to the narrow area of agriculture are relatively lower, usually ranging from 0.5 to 5.0.

According to data in the database Journal Citation Reports, *Median Impact Factor* for 2023 for the category *Agriculture, multidisciplinary* was 1.2, then 1.6 for the category *Agriculture*, *Dairy & Animal Science*, and for the category *Agronomy* the median impact factor was 1.5. Categories *Plant Sciences, Food science & technology, Environmental sciences, Biotechnology & applied microbiology* and *Agricultural engineering,* which partially cover the area of agriculture, reached significantly higher values (1.7, 2.6, 3.0, 2.8 and 1.8, respectively). All published excellent papers in the Q1 and Q2 quartiles are listed at the Faculty website referring to Scientific excellence.

The analysis of 15 most important scientific papers in the field of Biotechnical sciences, the area of agriculture, proves that the Faculty employees are very successful, considering the fact that their papers reach an average impact factor of 6.66 (Table 5.3).

Table 5.3. The most important scientific papers published by the Faculty employees in the period 2019-2023, according to the journal impact factor in the field of Biotechnical sciences, in the area of agriculture, quartile, category and rank and open access

Ord. No.	Paper	Impact factor	Quartile	Category and rank	Open access
1.	**Antunović, B.**; Blagojević, B.; Johler, S.; Guldimann, C.; Vieira-Pinto, M.; Vågsholm, I.; Meemken, D.; Alvseike, O.; Georgiev, M.; Alban, L. (2021): Challenges and opportunities in the implementation of new meat inspection systems in Europe. Trends in Food Science & Technology 116, pp. 460-467	15.1	Q1	Food science & technology 2/173	YES
2.	Tišma, M.; Žnidaršič-Plazl, P.; Selo, G.; Tolj, I.; **Šperanda, M.**; Bučić-Kojić, A.; Planinić, M. (2021): Trametes versicolor in lignocellulose-based bioeconomy: State of the art, challenges and opportunities. Bioresource Technology 330, 124997.	9.7	Q1	Agricultural engineering 1/20	YES
3.	**Kovačić, Đ.; Kralik, D.;** Rupčić, S.; **Jovičić, D.; Spajić, R.**; Tišma, M. (2019): Electroporation of harvest residues for enhanced biogas production in anaerobic co-digestion with dairy cow manure. Bioresource Technology 274, pp. 215-224.	9.7	Q1	Agricultural engineering 1/20	YES
4.	**Varga**, **I.**; **Radočaj**, **D.; Jurišić**, **M.;** Kulundžic Markulj, A.; **Antunović**, **M.** (2023): Prediction of sugar beet yield and quality parameters with varying nitrogen fertilization using ensemble decision trees and artificial neural networks. Computers and Electronics in Agriculture 212, 108076.	7.7	Q1	Agriculture, multidisciplinary 2/89	NO

5.	Gasparović, M.; Zrinjski, M.; Barković, Đ.; **Radočaj**, **D.** (2020): An automatic method for weed mapping in oat fields based on UAV imagery. Computers and Electronics in Agriculture 173, 105385.	7.7	Q1	Agriculture, multidisciplinary 2/89	NO
6.	Glavaš, H.; **Bobić**, **T.**; Dorić, D.; Lenard Božić, D. (2019): Infrared thermography camera protection in dairy farming management. Computers and Electronics in Agriculture 157, pp. 604-615.	7.7	Q1	Agriculture, multidisciplinary 2/89	NO
7.	**Lukić**, **B.;** Curik, I.; Držaić, I.; Galić, V.; Shihabi, M.; Vostry, L.; Čubrić-Curik, V. (2023): Genomic signatures of selection, local adaptation and production type characterisation of East Adriatic sheep breeds. Journal of Animal Science and Biotechnology 14 (1), 142.	6.3	Q1	Agriculture, dairy & animal science 2/80	YES
8.	**Jug**, **D.; Đurđevic, B**.; Birkás, M.; **Brozović, B**.; Lipiec, J.; **Vukadinović**, **V.; Jug**, **I.** (2019): Effect of conservation tillage on crop productivity and nitrogen use efficiency. Soil & Tillage Research 194, 104327.	6.1	Q1	Soil science 4/49	NO
9.	Markulj Kulundžić, A.; Josipović, A.; Matoša Kočar, M.; Viljevac Vuletić, M.; Antunović Dunić, J.; **Varga**, **I.;** Cesar, V.; Sudarić, A.; Lepeduš, H. (2022): Physiological insights on soybean response to drought. Agricultural Water Management 268, 107620.	5.9	Q1	Agronomy 6/125	NO
10.	Duvnjak, T.; **Vrandečić**, **K.; Ćosić**, **J.; Siber**, **T.;** Matoša Kočar, M. (2023): First Report of Hemp Fusarium Wilt Caused by Fusarium oxysporum in Croatia. Plants-Basel 12 (18), 3305.	4	Q1	Plant sciences 46/265	YES

11.	Petrovic, E.; **Vrandečić, K.; Ćosić, J.; Kanižai Šarić, G.;** Godena, S. (2022): First Report of Phaeoacremonium iranianum Causing Olive Twig and Branch Dieback. Plants-Basel 11 (24), 3578.	4	Q1	Plant sciences 46/265	YES
12.	Horvat, D.; Viljevac Vuletić, M.; Andrić, L.; **Baličević, R.;** Kovačević Babić, M.; Tucak, M. (2022): Characterization of Forage Quality, Phenolic Profiles, and Antioxidant Activity in Alfalfa (Medicago sativa L.). Plants-Basel 11 (20), 2735.	4	Q1	Plant sciences 46/265	YES
13.	Čamagajevac Štolfa, I.; Vuković, R.; Vuković, K.; Vuković, A.; **Ivezić, V.;** Pfeiffer Žuna, T.; Krstin, Lj.; **Lončarić, Z.** (2021): Wheat Leaf Antioxidative Status-Variety-Specific Mechanisms of Zinc Tolerance during Biofortification. Plants-Basel 10 (10), 2223.	4	Q1	Plant sciences 46/265	YES
14.	**Galić, L.; Spoljarević, M.;** Jakovac, E.; **Ravnjak, B.; Teklić, T.; Lisjak, M.;** Perić, K.; Nemet, F.; **Lončarić, Z.** (2021): Selenium Biofortification of Soybean Seeds Influences Physiological Responses of Seedlings to Osmotic Stress. Plants-Basel 10 (8), 1498.	4	Q1	Plant sciences 46/265	YES
15.	**Lončarić, Z.; Ivezić, V.; Kerovec, D.; Rebekić, A.** (2021): Foliar Zinc-Selenium and Nitrogen Fertilization Affects Content of Zn, Fe, Se, P, and Cd in Wheat Grain. Plants-Basel 10 (8), 1549.	4	Q1	Plant sciences 46/265	YES
	Total/average	**6.66**	**15 Q1**	**10 open access / 5 no**	

At the end of 2023, Stanford University in California (USA) published new results of a study into scientific citations in 2022 based on the Scopus database, which gathers over 210,000 scientists. Among the most cited Croatian scientists (108 in total), our retired professor Dragan Amić is ranked at 94th place.

Faculty employees cooperate with international scientific institutions on realisation of scientific research projects, they present their papers at international scientific conferences, they are members in editorial boards of scientific journals, and winners of awards and recognitions, which

emphasises their significant contribution to science. They also contribute to realisation of specific strategic aims of the Faculty directed towards smart, inclusive and sustainable growth, which is also stipulated in the Smart Specialisation Strategy of the Republic of Croatia and in the European framework programme for research and innovation.

The Faculty systematically supports research within scientific projects realised in cooperation with national and international institutions. A good example is the Horizon Europe project „Otporno pčelarstvo i uzgoj radi zaštite prirodnih genetskih resursa i usluga oprašivanja / Resilient beekeeping and breeding to safeguard natural genetic resources and pollination services“ (principal lead for Croatian team is Assist. Prof. Dr. Marin Kovačić, and two other associates from the Faculty are involved as researchers). The BeeGuards project team is coordinated by the CREA Research Centre for Agriculture and the Environment (Italy). The team consists of 27 partners from 16 countries. The goal of the project is to provide sustainable bee colony management practices, new breeding strategies and digital tools that will enable the beekeepers to adapt to the changing environment. Another Horizon Europe project where the Faculty participates as a partner is “Stvaranje vrijednosti i usluge ekosustava europske industrije morskih algi smanjenjem i rukovanjem potencijalno toksičnim elementima od uzgoja do tla / Value creation and ecosystem services of European Seaweed industry by reducing and handling potentially toxic elements from breeding to soil“ (principal lead is the Faculty employee Assoc. Prof. Dr. Vladimir Ivezić). This project is still ongoing (realisation period is 2022-2025). The project consortium is coordinated by Norway and it consists of 12 partners from 5 countries. The overall objective of the project is to promote creation of ecosystem services, and further expansion of the seaweed industry in Europe. The project funded by Horizon 2020 in which the Faculty acts as a partner is "Preserving the resilience of agro-ecosystems to climate change through effective pollination and sustainable beekeeping / Safeguarding agroecosystem resilience under climate change through efficient pollination and sustainable beekeeping“ (principal lead is the Faculty employee Prof. Dr. Bojan Stipešević, and another four Faculty staff in involved in the realisation). The project lasted from 2021 to 2024, and the project consortium, coordinated by Greece, consisted of 13 partners from 8 countries. The overall objective of the SafeAgroBee project is to contribute to the adaptation and mitigation of the effects of climate change and other influences that negatively affect the sustainability and resilience of agro-ecosystems in the Mediterranean basin, thus ensuring farmers' incomes and food security. The project funded by Horizon 2020 TREASURE „Raznolikost lokalnih pasmina svinja i proizvodnih sustava za visoko kvalitetne tradicionalne proizvode i održive lance svinjogojstva / Diversity of local pig breeds and production systems for high quality traditional products and sustainable pork chains“ was coordinated by a Faculty employee, Prof. Dr. Goran Kušec, together with 5 associates from the Faculty. The project lasted from 2015 to 2019, and the project consortium, coordinated by Dr. Marjeta Čandek Potokar from the Agricultural Institute of Slovenia, consisted of 25 partners from 9 countries. The aim of the project was to improve existing and create new networks between academic and non-academic partners, within and between regions and to create a chain for regional high-quality pork products, focusing on different and previously unexploited pig breeds, their production systems and pork products. Furthermore, from 2020-2021, the Faculty, as a partner institution participated in the project Train-CE-Food/Train-CE-Food, funded by the European Commission. The lead of the research team was Prof. Dr. Davor Kralik. The project involved eight partners from six EU countries (three with higher youth unemployment rates), and many professionals (e.g. entrepreneurship, cooperatives, circular economy, new business models, start-ups, food supply chains, teaching/learning, curriculum, e-learning, etc.). The aim of the project was to facilitate acquisition of innovative specialised skills by young people, empowering them to use entrepreneurial and cooperative skills

in creation of more effective cooperative solutions and business models for circular economy and food supply chains.

In the evaluated period, the employees of the Faculty carried out 9 research projects supported by the Ministry of Agriculture of the Republic of Croatia, which main goal was the transfer of new knowledge and technologies to the economy and solving numerous problems in the agricultural sector. In addition, the employees of the Faculty realised a significant number of county projects and collaborations (21), most of which were located in the five Slavonic counties.

Josip Juraj Strossmayer University of Osijek adopted the principles of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers, and it applies standards prescribed by the European Union for the working conditions and employment of researchers. Analysis of the scientific productivity of the Faculty employees showed that some scientists achieve scientific productivity greater than the average for the Faculty (Table 5.4).

Table 5.4. Teachers with the most published papers indexed in WoS, their citations and h-index

Name and Surname	Number of papers indexed in WoS		Number of citations		*h*-index	
	Total	2019-2023	WoS	Scopus	Total	2019-2023
Lončarić Zdenko	90	41	782	909	15	11
Šperanda Marcela	90	28	646	721	14	7
Antunović Zvonko	83	28	645	796	14	6
Jurišić Mladen	69	41	388	406	10	10
Rastija Vesna	63	31	1363	1525	19	11
Ćosić Jasenka	55	27	486	611	9	8
Gantner Vesna	54	23	413	609	9	3
Novoselec Josip	51	29	366	458	11	6
Vrandečić Karolina	50	28	410	562	8	7
Kralik Zlata	43	23	413	428	14	7

The Faculty employees published 24 authored books, of which 7 books were prepared in cooperation with national scientists, and 4 of them are in open access. The number of editorial books is also significant. Ten editorial books were published in the Republic of Croatia, two books in cooperation with other institutions, of which six are in open access. One translation of the book was prepared in cooperation with national and international co-authors, and published also in open access. The number of chapters in scientific books in the evaluated period is 17, of which 6 were prepared in co-authorship at the national level, one in international cooperation, and 6 of them are in open access.

The Faculty encourages active participation in scientific projects and production of high-quality scientific papers, which is one of the conditions for advancement of employees into higher scientific and teaching titles. The evaluation of the scientific and research activities of scientists is carried out every year in the process of allocating funds provided by the Ministry of Science, Education and Youth of the Republic of Croatia for the material costs of scientific activities. Those funds are distributed among established research teams. The distribution of funds is carried out according to the Ordinance on the Faculty research teams' activities. The research team is a fundamental scientific research unit at the Faculty, which brings together scientific research ideas

and interests and other resources and develops joint research topics and proposals of projects and/or programmes, works on doctoral theses and technology transfer. The mentioned activities of the research teams have to follow relevant strategic objectives and should contribute to the realisation of the strategic aims of the Faculty.

The Faculty also awards additional support to scientists who, in one academic year, published scientific papers in journals indexed in WoS in the Q1 and Q2 quartiles.

The Office for science and the Office for international cooperation and projects inform academic and professional staff about calls open for submission of project proposals. Both offices also share invitations with employees to participate in various events organised at external institutions of higher education and science or to attend online presentations, such as invitation of the Agency for Mobility and EU Programmes to apply for a webinar on project proposals for the Marie Sklodowska – Curie (MSCA) Action.

Ceremony of the awards granted to employees is carried out during the celebration of the Faculty Day. Various awards and recognitions are awarded to employees for their achievements in scientific work. According to the Ordinance on awarding excellence of the Faculty's teachers and associates, award categories are: annual award for excellence in scientific and research work, annual award for a successful young scientist under 35 years of age, annual award for first authorship of a published scientific paper in WoS database with the highest impact factor in categories related to the Faculty's activities, award for excellence in realisation of international, European projects and national projects financed by the Croatian Science Foundation (CSF) and the Ministry of Science, Education and Youth of the Republic of Croatia, and annual award for successful cooperation with the economy. The Faculty also awards certificates of appreciation to employees that have been appointed to the scientific-teaching title of full professor with tenure and for their first appointment into a title of full professor. The number and type of awards granted to employees of the Faculty in the evaluated period is presented in Table 5.5.

Table 5.5. Awards, certificates and recognitions granted to employees in the past five years

Ord. No.	Type of awards/recognitions	Academic year				
		'18/'19	'19/'20	'20/'21	'21/'22	'22/'23
1.	State Prize for Science	-	1	-	2	-
2.	Award for excellence in teaching and working with students	-	-	1	1	1
3.	Award for excellence in scientific and research work	1	-	1	1	1
4.	Award for successful cooperation with the economy	1	1	1	-	1
5.	Award for a successful young scientist	1	1	1	1	-
6.	Award for the first authorship of a published scientific paper in a journal with the highest impact factor	1	2 (2)	1	1	1
7.	Award for excellence in realisation of international, European and national projects funded by the Croatian Science Foundation and the Ministry of Science and Education of the Republic of Croatia	2				1
8.	Recognition for scientific paper published in the first group (a1) in scientific journals of the Q1 and Q2 quartiles	2	2	2	2	2
9.	Recognition for mentoring a seminar paper awarded with the Rector's Award	-	-	1	-	2
10.	Recognition for improving the work of the Faculty					4
11.	Recognition for dedicated and long-term work at the Faculty	-	1	5	5	1
	Total	**8**	**10**	**13**	**13**	**14**

As shown in the Table, the number of awards presented to Faculty employees has been increasing in recent years, which also indicates the increased engagement of employees in all areas of the Faculty's activities. In the past five years, the scientific and research activity of the Faculty employees has been appreciated through numerous awards, recognitions and certificates (72 in total). Worth mentioning are the Faculty employees who won the State Prize for Science awarded by the Ministry of Science, Education and Youth of the Republic of Croatia in various fields and categories. The State Prize for Science for 2021 in the category Lifetime Achievement in the field of Biotechnical sciences was awarded to Prof. Dr. Đuro Senčić. The State Prize for Science for 2021 in the category Annual Award for Achievements in the Biotechnical Sciences was awarded to Prof. Dr. Zdenko Lončarić, and in the same category for 2019, the prize was awarded to Prof. Dr. Darko Kiš. Among all awards won in the evaluated period, four of them are international.

In 2022, our professors, Prof. Dr. Dr. h. c. Gordana Kralik, emerita, and Prof. Dr. Zlata Kralik won the prize “Budi uzor - znanstvena inovacija” (Engl. Be a role model - scientific innovation).

Quality of the institution and its scientific recognition are also visible in participation in domestic and international competitive projects and scientific programmes. In the observed period, Faculty employees participated or are still participating in many international projects and programs. The Faculty is a lead or partner in five scientific research projects funded by the Croatian Science Foundation, and participates as a partner in 12 projects. It also acts as a leader of 6 scientific research projects funded by various Croatian ministries, and it is a partner in additional 4 of such projects. The Faculty is a partner in 6 COST actions. The Faculty participates in 24 projects financed by the European Commission, out of which it coordinates 4. Furthermore, the Faculty implements two scientific and one professional project funded by Horizon 2020, and two scientific projects funded by Horizon Europe. There are 7 bilateral projects (with Serbia, Norway, Hungary and Slovenia), within which the Faculty acts as a lead of four projects. There are three INTERREG projects (the Faculty is the leader of one, and in the other two it participates as a partner). The Faculty acts as a partner in two LIFE projects and in one project of the European Space Agency. The Faculty is a main lead of the CASEE project. It should be mentioned that the Faculty won the award for the best EU LIFE project in the field of environmental protection in 2023 (Biostimulator Application Efficiency in Apple, Strawberry, Pear, Wine grape, Sugar beet production - Trial Study for PUE and WUE), which was led by Prof. Dr. Brigita Popović. That project resulted in biostimulators of the new generation (Plants 4, Plants 4-Vita, 4-Terra, 4-good), which are used all over the world.

In order to provide quality administrative support to scientists in preparation of project proposals, the Faculty cooperates with companies which have extensive experience in application of projects for funding (Centre for Entrepreneurship Osijek and Krutak d.d., Zagreb). Employees of the Office for international cooperation and projects also provide support in the application and realisation of competitive projects and various mobility programmes.

The Office for international cooperation and projects provides support to staff and students in the application and implementation of international projects in all of their phases:

- Sharing of information on open calls for application of international projects

The Office staff and LEAR collect information on open calls for applications of international project proposals, they create an annual calendar of open calls, analyse the activities of Faculty employees with respect to objectives of each call, and identify appropriate sources of funding for project ideas.

- Before applying for an international project funding

In this phase, the Office provides advice on open calls, experiences from previous applications, funding opportunities, checks the acceptability of applicants and project ideas, and offers support in communication with foreign partners. The Office staff and LEAR inform employees about participation in consortia.

- Application phase

The Office staff participates in the development of a project proposal, assists in filling out forms, checks administration rules and documents, and provides assistance in communication with competent institutions and interpretation of the rules on the acceptability of costs. They provide support in working in relevant portals, such as EU *Funding & Tender* portal for application of projects.

- Realisation of an international project

During project realisation, the Office offers administrative assistance with evaluation, support during project agreement signing, work in official portals, organisation of project activities, such as workshops, and all forms of project dissemination. Also, the Office provides advisory services on project budget, actively cooperates with partners and competent authorities, and helps in the promotion of the project.

Upon completion of the project, the Office deals with dissemination of results, archiving of documentation and provides the necessary support for the final project report.

For support to scientific and research work, there is the Ethics committee for research on animals, which consists of five members educated within the training course for persons working with experimental animals. The Ethics committee for research on animals reviews experiments that involve animals, and checks the compliance of these experiments with the laws of the Republic of Croatia that regulate the welfare of animals and the use of animals in experiments. The Committee advises scientists working with animals on the procurement, use, housing, care and welfare of animals and the treatment of animals in experiments, and establishes and revises internal procedures for supervision of and reporting on research on animals.

The Faculty follows trends and faces challenges of internationalisation in science and higher education through the implementation of international activities within the IPA programme (three projects), international scientific research programmes and various mobility programmes (Erasmus+ and CEEPUS). Among the mobilities of the Faculty employees realised in the evaluated period, two long-term mobilities are to be mentioned. Prof. Dr. Edita Štefanić and Assoc. Prof. Dr. Vladimir Ivezić won a Fulbright scholarship and stayed in the USA for training for 5 - 7 months. Assoc. In the period from December 2019 to May 2020, Prof. Dr. Jelena Ilić realised a professional assistance programme as a Seconded National Expert, EFSA, at the Ecotoxicology Department, Parma, Italy. Faculty employees are members of international associations (48), they participated in organising committees of scientific and professional conferences (168), as well as in conferences in the country and abroad (101).

Faculty employees also carried out 6 university research projects, of which they coordinated 4 projects. Such projects were aligned with the University Strategy. The implementation of university projects encourages better cooperation between University constituents and contributes to establishment of interdisciplinary research groups, they facilitate stronger involvement of doctoral students in research, encourage young researchers to develop scientific careers, and strengthen cooperation with the economy. In cooperation with other constituents of Josip Juraj Strossmayer University of Osijek, Faculty employees participated in 6 projects, and acted as co-authors of 261 papers.

Young researchers and teachers appointed into the title of senior assistant and assistant professor are very active in carrying out scientific research activities and in publishing scientific papers. In Table 5.6, there is a list of 10 best young scientists with the most published scientific papers in the WoS database, as well as their citations and h-index. Dorijan Radočaj, PhD achieved the greatest scientific production in Biotechnical sciences. He is followed by two young scientists, Maja Karnaš, PhD, and Domagoj Šubarić, assistant, who are appointed into titles in the field of Natural sciences.

Table 5.6. Young scientists of the Faculty (up to 35 years old) with the most published scientific works indexed in WoS, their citations and h-index

Name and Surname	Number of papers indexed in WoS		Number of citations		*h*-index	
	Total	2019-2023	WoS	Scopus	Total	2019-2023
Radočaj Dorijan	42	42	392	437	11	11
Karnaš Maja	20	15	163	171	8	7
Šubarić Domagoj	13	13	108	88	5	5
Kujundžić Sunčica	12	6	99	119	5	4
Kujundžić Toni	12	8	40	50	3	2
Banaj Anamarija	8	8	12	12	2	2
Ravnjak Boris	7	7	64	76	4	4
Siber Tamara	6	5	24	25	4	2
Kristić Marija	5	5	24	27	3	3
Grubišić Šestanj Sanja	5	5	12	13	2	2

In the Table 5.7 below, there is a list of five of the most important papers of young scientists of the Faculty published in the evaluated period.

Table 5.7. The top five most significant papers written by the Faculty's young scientists (up to 35 years old), with journal impact factor, journal quartile, category and rank, open access, number of citations in WoS, published in the evaluated period

Ord. No.	Paper	Impact factor	Quartile	Category and rank	open access	Number of citations
1.	**Radočaj**, **D.,** Gašparović, M., Radočaj, P., **Jurišić**, **M.** (2023): Geospatial prediction of total soil carbon in European agricultural land based on deep learning. Science of the Total Environment 912, 169647.	9.8	Q1	Environ-mental sciences 26/275	NO	0
2.	**Radočaj**, **D., Jurišić**, **M.,** Gašparović, M. (2022): A wildfire growth prediction and evaluation approach using Landsat and MODIS dana. Journal of Environmental Management 304, 114351.	8.7	Q1	Environ-mental sciences 31/275	NO	14
3.	Bešlo, D., Golubić, N., Rastija, V., Agić, D., **Karnaš, M., Šubarić, D.,** Lučić, B. (2023): Antioxidant Activity, Metabolism, and Bioavailability of Polyphenols in the Diet of Animals. Antioxidants 12 (6), 1141	7	Q1	Food science & technology 13/142	YES (All Open Access, Gold, Green Published)	24

4.	Rastija, V., Vrandečić, K., Ćosić, J., Šarić Kanižai, G., Majić, I., Agić, D., **Šubarić, D., Karnaš, M.,** Bešlo, D., Brahmbhatt, H., Komar, M. (2023): Antifungal Activities of Fluorinated Pyrazole Aldehydes on Phytopathogenic Fungi, and Their Effect on Entomopathogenic Nematodes, and Soil-Beneficial Bacteria. International Journal of Molecular Sciences 24 (11), 9335	5.6	Q1	Biochemistry & molecular biology 66/285	YES (All Open Access, Gold, Green Published)	2
5.	Jozinović, A., Šubarić, D., Ačkar, Đ., Babić, J., Orkić, V., **Guberac, S.,** Miličević, B. (2021): Food Industry By-Products as Raw Materials in the Production of Value-Added Corn Snack Products. Foods 10 (5), 946	5.2	Q1	Food science & technology 34/142	YES (All Open Access, Gold, Green Published)	14

In the evaluated period, many Faculty employees participated in international and national scientific and professional conferences, at which they presented 360 papers. This indicates their increased commitment to presenting their scientific and research results. Out of the mentioned number, 77 papers were prepared in cooperation at national level, and 65 papers resulted from international cooperation, and 89 papers are in open access. The above also contributes to fulfilment of the strategic aims of the Faculty referring to enhanced interdisciplinary cooperation and increased scientific productivity per scientist. Participation in conferences contributes to the dissemination of the latest knowledge, enables interaction with colleagues with similar research interests, and creates stronger links for future scientific and research work.

Wither as researchers or as leaders of research groups, Faculty employees are involved in the Scientific centre of excellence for personalised healthcare and the Scientific centre of excellence for biodiversity and molecular plant breeding.

Scientific centres of excellence aim to improve the international networking and reputation of scientific research and higher education through more intensive scientific research of internationally recognised research groups, by which they contribute to efficient transfer of knowledge and technology to the economy at the national level. Scientific centres of excellence, which engage Faculty staff as well, produce highly valuable interdisciplinary scientific and review papers published in prestigious journals indexed in the WoSCC.

The Faculty's scientists prove their competitiveness and recognition by delivering numerous invited lectures, 185 in the last five years, at the national and international level. This confirms the quality and scientific excellence of the Faculty's teachers and associates and their national and international recognition.

Several teachers of the Faculty were engaged as evaluators of projects and programmes (68) and reviewers of papers (1,664) published in various publications, as well as papers published in numerous proceedings of national and international conferences. The above activities contribute to the improvement of skills and the generation of ideas for future research to be applied in competitive projects.

The Faculty organised many scientific and professional conferences both at national and international level. Every two years, the Faculty organises the international and national Symposium of Agronomists, for the 20th and 60th time, respectively. At that symposium, there are more than 300 papers usually presented in ten sections, and about five plenary presentations are usually held. A significant number of international institutions and scientists participate in the

Symposium of Agronomists. Foreign scientists are also involved in its organisation through its organising and scientific committees. The importance of international conferences is also reflected in the involvement of international associations in their organisation (ICA - Association for European Life Science Universities; CASEE - The ICA Regional Network for Central and South Eastern-Europe, EHEDG - European Hygienic Engineering & Design Group, and B.EN.A - Balkan Environmental Association, ISTRO – International Soil Tillage Research Organisation), as well as in the auspices of Ministries. In the evaluated period, 360 scientific and professional papers of Faculty employees were published in the proceedings of various domestic and international conferences.

Along with the traditional conferences, in the evaluated period, the Faculty also organised two new symposia/conferences in its premises. The 1st Symposium on Digital Technologies in Agriculture was held from 06-08 December 2022, and it delivered the workshops "Digital agriculture in rural areas" (DIGITAGRA). This symposium should encourage the networking of scientists and experts from the country and abroad for the purpose of sharing knowledge, experiences, ideas and results related to digital technologies in agriculture. The symposium was attended by 50 participants from the country and abroad, and 33 papers were presented in six sections. The second newly organised conference in the past period was the 1st International Scientific Conference "Challenges in agriculture caused by climate change", held from 19-23 September 2023. Over three days, participants from 15 countries discussed the future of agricultural production, deeply affected by unstoppable climate change. Over a hundred domestic and foreign authors, ten invited lecturers, and around 40 papers were presented at the Conference. The main discussion was about the future adaptation of livestock, agricultural and fruit production to climate change, and production that shall be resistant to soil and air pollution. These two newly organised conferences will be held alternately every other year.

The Faculty also co-organises other international scientific and professional conferences, most often in the countries of Southeast Europe. Such conferences present latest research through papers and abstracts, mostly in the Biotechnical sciences, and other related scientific areas. Such conferences are a floor for brief presentation of the research results, while original scientific papers of the Faculty employees are published in high-ranking scientific journals. The Young Researchers Day in the STEM area was organised for the sixth year in a row at the University, while the Faculty acted as one of the initiators of this event, and hosted 4th gathering.

In addition to professional trainings, during the period under evaluation, the employees of the Faculty published and presented a significant number of professional papers at professional conferences.

In the evaluated period, the Faculty employees published 53 professional papers in journals, of which 13 papers (32.08%) were prepared in national cooperation, and 4 papers resulted from cooperation with international institutions, while 26 papers (49.06 %) are in open access. Out of the total number of published professional papers, two of them were published in journals that are indexed in WoS, one of which resulted from national cooperation, and one from international cooperation. In the Scopus database (excluding papers from WoS), two professional papers were indexed, one of which resulted from international cooperation, and both papers are in open access. There were 49 professional papers published in other journals, of which 12 papers resulted from national cooperation, 3 from international cooperation, and 24 of them are open access.

The Faculty involves students in conducting of research and preparing of papers for publication. Students also participate in presentation of papers in various symposia. The above contributes to the improved professional development of students, considering the experience gained not only

during the research, statistical processing and writing of papers, but also during the dissemination and presentation of papers at conferences. Papers published by students are usually resulting from their research for theses or from defended specialist theses and doctoral dissertations, which are usually original scientific papers.

The Faculty's external associates, who participate in the teaching delivery plan of the doctoral study in Agricultural Sciences (13), and postgraduate specialist studies (6), are renowned scientists and teachers with extensive experience in areas that are not represented at the Faculty, and well-known experts from scientific institutes (5) who have practical experience in biotechnical and related scientific fields. An analysis of their bibliography in the evaluated period shows their significant scientific activity, which is reflected in published scientific papers and citations in the WoS database (159 papers and 1,147 citations) and in implemented projects (58).

The engagement of the Faculty employees in research in the observed period is also proven by the data on leadership and partnership in scientific and professional projects and professional collaborations (342; Analytical supplement; Table 5.6.), of which 289 are domestic and 53 international. Out of the mentioned projects and collaborations, the Faculty employees are the leaders of 242 projects, and partners in 100 of them. Emphasis is put on participation in five Horizon Europe projects, and on coordination of five scientific projects funded by the Croatian Science Foundation, eight projects of the Ministry of Science, Education and Youth (of which 5 were coordinated by the Faculty), two projects of the Ministry of Agriculture and Forestry (one was coordinated) and one project of the Ministry of Environmental Protection of the Republic of Croatia, which was coordinated by the Faculty.

One of the main activities of the Faculty is to systematically implement a development strategy based on excellence in scientific, teaching and professional activity, and to develop its own services and products to be offered to all interested users. We particularly highlight the product NITROBAKTERIN - an inoculant for pre-sowing bacterization of soybean, the name of which is protected by the State Institute for Intellectual Property. Furthermore, the Ministry of Agriculture approved the improver designation for 8 different products that were developed at the Faculty: Mycor – FAZOS, Protect – FAZOS, Vitality – FAZOS, Seed Protect – FAZOS, Super Green – FAZOS, Fotos – FAZOS, Vitality – A – FAZOS, Protect – A – FAZOS. These are microbiological preparations used to improve various soil properties.

In the period from 2019 to 2023, the employees of the Faculty participated in editorial boards of 41 journals, of which three employees are the chief editors of the journals. Prof. Dr. Manda Antunović is the editor-in-chief of the journal Poljoprivreda / Agriculture published by the Faculty, which publishes papers indexed in the WoS database. Our employees are also editors-in-chief of journals of other publishers. Prof. Dr. Ružica Lončarić is the editor-in-chief of the journal Agroeconomia Croatica published by the Croatian Agricultural Society. Prof. Dr. Zvonko Antunović is the editor-in-chief of the journal Krmiva published by the Croatian Agricultural Society. Referring to the journals in which our employees are engaged in the editorial boards, it is evident that 14 of such journals are indexed in the WoS (4 in Q1, 4 in Q2, 3 in Q3 and 3 in Q4 quartiles), and 17 are indexed in the CAB Abstract database. There are 14 national journals in which employees are represented in the editorial boards as members and editors, and in 27 international journals they are members of the editorial board or guest editors. In the evaluated period, 8 Faculty employees participated as guest editors in journals indexed in the WoSCC database in high quartiles (Q1 and Q2: Agronomy, Agriculture, AgriEngineering and Processes).

Scientific journals are the platform for communication within the scientific community. They are also serving as a platform for creating, sharing, reviewing and disseminating the latest scientific

knowledge. They contribute to the academic and professional value of scientists, of the institution that publishes the journal and generates knowledge, and also facilitate the achievement of established strategic goals in science of the institution. Since 1995, the Faculty, together with the Agricultural Institute Osijek, has been a co-publisher of the scientific and professional journal Poljoprivreda / Agriculture. Scientific works from all fields of agronomic science and profession are published in that journal. Papers in Poljoprivreda / Agriculture are cited in the following databases: WoS, CAB International (CAB Abstract), SCOPUS, DOAJ, HRČAK and in the National and University Library in Zagreb. The journal is one of the few in the Republic of Croatia in the field of agronomy that is indexed in the WoS database. Papers published in Poljoprivreda / Agriculture are accepted by Thomson Reuters and indexed in the database WoS ESCI (*Emerging Sources Citation Index*) in the Q4 quartile with the impact factor 0.5. Prof. Dr. Manda Antunović, an employee of the Faculty, is the editor-in-chief of the journal. Editorial board includes well-known scientists from the country and abroad (Germany, Hungary, Turkey, Bulgaria, Australia). The journal is published twice a year, and it is financially supported by the Ministry of Science, Education and Youth of the Republic of Croatia. In the total funding of material costs by the Ministry of Science, Education and Youth of the Republic of Croatia allocated to the Faculty for scientific activity, 3.0% is allocated for co-financing the publication of the journal Agriculture. In the period from 2019 to 2023, there were 106 papers published in the journal Agriculture, of which 86 papers were original scientific papers, 15 review papers and 5 preliminary announcements. In the period from 2019 to 2023, papers published in the journal Agriculture were cited 153 times in the WoS database, and 192 times in the SCOPUS database.

Every year the Faculty publishes Annual report on its website, and every five years there is a Monograph of the Faculty published. Proceedings/books of abstracts of conferences organised by the Faculty and book of abstracts of the Doctorates Day are also published.

5.2. The higher education institution is distinguished by its professional achievements in all fields in which the professional study programme is delivered.

The Faculty monitors the employability of graduates and accepts recommendations of the Croatian Employment Service regarding the admission quotas, a decision was made to no longer enrol students in the Faculty's professional studies. By decision of the Faculty Council, the professional studies in Agrarian Entrepreneurship and Mechanisation have been put in dormant status, so from the academic year 2018/2019, students were not enrolled in those studies. The professional studies of Plant Production, major in Agriculture, and the study of Zootechniques have been also deactivated, by stopping with enrolment of students from the academic year 2021/2022 onwards (Decision).

5.3. The higher education institution influences the economy and society in general through the scientific and/or artistic work of its teachers.

Since its foundation, the Faculty has been continuously cooperating with the companies from the economy sector, with the local and regional community, thus meeting the needs of society in general through different ways of cooperation and service delivery. Long-term successful cooperation with the economy at the regional and national level has resulted in numerous professional projects, expert studies, reports, and expertise. The employees of the Faculty are engaged in the transfer of knowledge and technologies to the economy through their professional activities, which makes the Faculty recognisable in its community. Collaborations of the Faculty employees with the economy in the observed period is significant (224), and most of the collaborations were realised with companies Agro-Čepin Ltd., Fermopromet grupa, P.P. Orahovica Ltd., etc.

The Faculty offers 5 postgraduate specialist study programmes (Quality and Safety of Animal Products, Production Systems in Animal Husbandry, Pig Breeding, Management of Agricultural Farms, and Plant Protection). Those postgraduate specialist studies provide the opportunity for agricultural engineers, i.e. holders of master's degrees, to acquire additional professional knowledge in the field of agriculture and, with the newly acquired scientific knowledge and skills in technology application, personally contribute to the development of their own production systems. In addition, postgraduate specialist studies enable participants to expand their knowledge and expertise, as well as acquire completely new knowledge, thereby achieving a highly specialised level of knowledge and skills and improved competencies relevant to the labour market. Postgraduate specialist studies educate students to assume responsibility in the development of the economy and society as a whole. In the specialist studies, there are six external associates engaged in the teaching delivery plan. In the evaluated period, within the postgraduate specialist studies there were five specialist thesis defended, and there were seven students enrolled.

Employees of the Faculty participated in the implementation of the Programme for monitoring the resistance of harmful organisms to plant protection agents (2018-2020), which was financed by the Ministry of Agriculture, Forestry and Fisheries of the Republic of Croatia. The Programme implemented long-term projects of monitoring the resistance of harmful organisms to plant protection products and provided a platform for further research with a clearer understanding of resistance of harmful organisms, which will help the development of regional strategies for the suppression of certain harmful organisms, and also contribute to the achievement of rational, effective and sustainable use of plant protection substances.

There are numerous events organised by the Faculty by which the Faculty reaches out to society. In the evaluated period, the Faculty organised 61 workshops/forums, and participated in 129 workshops/forums organised by other institutions. Employees of the Faculty actively participated in the implementation of the Rural Development Programme (2014-2020) and conducted professional workshops and seminars in cooperation with the Directorate for Professional Support to Agricultural Development, engaged in the transfer of knowledge and technology and in training of employees of the Advisory service for improvement agricultural production and sustainable economic development of the Republic of Croatia.

In the evaluated period, Faculty employees held invited lectures at professional events, especially in professional events of breeders of domestic animals organised by the Croatian Agency for Agriculture and Food. Some of the events were: Advisory meeting of cattle breeders, Advisory

meeting of pig breeders, Advisory meeting of sheep and goat breeders, Advisory meeting of horse breeders, Poultry Days, and events for evaluation of food quality, such as indigenous products (kulen, ham, sausage, cheese and other dairy products, wines, alcoholic beverages, etc.). In 2023, the 1st Croatian livestock breeding days were organised to join all advisory meetings of livestock breeders into one umbrella conference organised by the Croatian Agency for Agriculture and Food. In the evaluated period, at meetings organised by the Croatian Agency for Agriculture and Food in the area of livestock production Faculty employees held 35 invited lectures and participated in 5 panel discussions on the prospective and development of livestock production in the Republic of Croatia.

The results achieved in professional projects have positively influenced the development of agricultural production in general. The fertility of the soil improved, which consequently resulted in better conditions for its exploitation in production of arable crops, fruit, vines and vegetables. Professional projects related to the increase of the yield of certain agricultural crops enabled producers to achieve better production results and more efficient use of mineral fertilisers and agricultural machinery. Professional projects related to the application of new digital technologies in agriculture were also raising the productivity of the sector and improved skills on the application of such technology in practice. Projects related to the animal production sector also achieved good results in raising of animal productivity and obtaining better quality of animal products and functional products. The expert studies into hunting and fishing potentials enabled our hunting grounds and fish farms to improve their business and competitiveness on the EU market. The application of new, more environmentally friendly production systems and technologies in breeding of domestic animals, which respect the well-being of animals, enabled easier adaptation of farmers to new production and market conditions of the EU. Results of professional and development projects are applied in the training of farmers and business entities engaged in agricultural production and food production, so they got better prepared for the global market, primarily from the marketing aspect, and became more aware of ecological aspects and sustainable agricultural production for the benefits of environmental protection.

Faculty employees are members of the panels for evaluation of the quality of animal products. Such events are organised by the Croatian Chamber of Commerce, and for the second year in a row the Faculty also organises the competition for the best kulen, within which the quality of that traditional and widely appreciated Slavonian cured meat product is evaluated.

Faculty scientists also conduct research in cooperation with agricultural companies and family farms in the region.

The transfer of knowledge and technology to the economy is facilitated by various competence centres and clusters. The Faculty is a co-founder of the competence centre Centar primijenjenih bioznanosti Lanac zdrave hrane d.o.o. (Engl. Centre of Applied Biosciences Healthy Food Chain Ltd.). Aiming to assure more effective implementation of development projects in agriculture and to boost rural development, the Faculty has co-founded the Agro-cluster and the Agrotechnological Centre in the Vukovar–Srijem County. The Faculty also act as a partner in the Regional Center of Competence in Agriculture in Vinkovci, which is coordinated by Vinkovci Agricultural and Forestry School in the Centre for Modern Technologies and Education in Agriculture, which delivers educational programmes and adult education programmes and transfers knowledge and skills to agricultural sector.

The role of employees of the Faculty in the promotion of agricultural production is also significant. In addition to scientific research projects, the Experiment station for innovation and technology in Tenja takes part in the National Programme for the conservation and sustainable use of plant genetic resources for food and agriculture in the Republic of Croatia (BGI) by engaging several

working groups as determined by the Programme (Working groups: Industrial plants, Cereals and maize, Fruit — subgroup Continental fruit, Medicinal and herbs; Vines, and Vegetables). At the experiment station, the national safety collection of traditional varieties of continental fruit species is also grown, and within the Experiment station in Mandićevac, there is the national safety collection of indigenous continental varieties of vine and newly created varieties of vine tolerant to some of the most significant diseases of the vine. Either independently or in cooperation with the Ministry of Agriculture, the Experiment station carries out demonstration and scientific experiments (various comparative experiments with hybrids and plant varieties and research into their resistance to different agroecological influences and consociations of different species). Such activities have contributed to the significant dissemination of recent scientific knowledge in the agricultural sector, by exercising positive influence on the community progress.

In addition to their main duties referring to teaching, research and professional activities, the Faculty employees are engaged in national and international professional associations. A significant number of Faculty employees are members of many national and international professional associations (187). The most Faculty employees are members of the Croatian Agricultural Society, Croatian Soil Science Society, Academy of Agricultural Sciences, International Organisation for Biological and Integrated Control - IOBC, and Croatian Plant Protection Society. Membership in other international professional associations should be noted (European Hygienic Engineering and Design Group - EHEDG, The European Society of Agricultural Engineers (EurAgEng) - ESAE, Balkan Environmental Association – B.EN.A, Association for European Life Science Universities ICA, The European Association of Agricultural Economists-EAAE, International Society for Horticultural Science - ISHS, European Weed Research Society - EWRS, European Association for Research on Plant Breeding - EUCARPIA, European Agroforestry Federation – EURAF, European Federation of Animal Sciences – EAAP, etc.).

The undeniable quality of scientific and professional work of the Faculty employees is reflected in their involvement in the organisational committees of scientific and professional national and international conferences (168). Faculty employees are members (187) of national and international professional associations and academies. They are engaged in preparation of expert reports and studies (19), and in numerous activities related to the popularisation of agricultural profession. Employees of the Faculty are members of numerous professional local and civic associations (50 memberships), of which 33 memberships refer to professional associations and 23 are civic association memberships. Such data confirm significant activity of employees outside the Faculty, i.e. in the community.

Faculty employees also participate in working groups for the definition of legal regulations (acts, ordinances, regulations, etc.). In the observed period, there were 56 of such engagements, of which 54 were national and 2 were international working groups. The majority of working groups was appointed by the Ministry of Agriculture and Fisheries of the Republic of Croatia (45), then by the Osijek-Baranja County (4) and by other Croatian ministries. Faculty employees worked on preparation of 6 acts and 30 ordinances, as well as 20 strategies/action plans, regulations and directives.

In order to promote the agricultural sector at national and international level, the employees of the Faculty were very active in organisation/co-organisation of numerous professional events. An example is the conference Slavonika and AGRO Startup, organised by the agency Apriori World. The main objectives of these conferences were to bring together all participants in the agricultural sector, to present successful agricultural companies and institutions involved in the agricultural sector, and to promote innovative ideas that could be inspiring for future entrepreneurs.

Employees and students of the Faculty carry out numerous activities related to the popularisation of the profession, which aims to promote the Faculty in community. The Faculty Open Door Day, University Fair, Career Day, Doctorates Day are just some of such events. The Dean of the Faculty also participated as an expert board member in the selection of the best young farmer within the Competition for the best young farmer in Croatia launched by the European Parliament. In the evaluated period 2019-2023, employees of the Faculty published a significant number of popularisation articles (117), of which emphasis is put on three professional and popular journals in which employees published the most of their popularisation articles; Agroglas 48, Gospodarski list 18, and Hrvatska pčela 17 articles. Faculty employees also participated in the editorial boards of four professional and popular journals in the observed period.

News related to teaching, scientific and research activities of employees and students of the Faculty are regularly published every month in the "University News", a section of the Glas Slavonije Daily Newspaper.

The Table 5.8 overviews the realised activities of the Scientific Forum in the period 2019-2023. There were 27 activities completed, involving a significant number of foreign participants who delivered presentations and workshops.

Table 5.8. List of public presentations and workshops organised by the Scientific Forum in the past five years

Ord. No.	Presentation/workshop topic	Date	Institution/company	Name and surname
1.	The influence of oxidation processes on food quality particularly in meat and fish	13 March 2019	Wroclaw University of Economics and Business, Poland	Ewa Biazik
2.	Irrigation infrastructures in Turkey	26 April 2019	Isparta University of Applied Sciences University, Türkiye	Atilgan Atilgan
3.	Agricultural water usage and management in Turkey	15 May 2019	Bilecik Şeyh Edebali University, Türkiye	Huseyin T. Gultas
4.	Assessing the threat of Bioterrorism: Capabilities and intentions of non-state actors	24 May 2019	Ernst & Young	Lana Djurkin-König
5.	Modern challenges in life sciences: CRISPR past, present, future	27 September 2019	Cornell University, New York City, USA	Matthew Willman
6.	Cornell University and Plant Transformation Facility	27 September 2019	Cornell University, New York City, USA	Matthew Willman
7.	Laboratorijska/terenska analitička djelatnost	15 October 2019	Faculty of Agrobiotechnical Sciences Osijek, Croatia	Jelena Jelenić
8.	Postavljanje i provedba istraživanja u svrhu izrade doktorske disertacije	28 October 2019	Faculty of Agrobiotechnical Sciences Osijek, Croatia	Magdalena Matić
9.	Agricultural water usage and management in Turkey	15 May 2019	Bilecik Şeyh Edebali University, Türkiye	Huseyin T. Gultas
10.	Mechanisms for caste-fate determination in temperate paper wasps: workers do not necessarily emerge as workers, and the same is true for queens	6 November 2019	Faculty of Bioresources of the Mie University, Japan	Yoshihiro Yamade
11.	Rezistentnost gljiva na fungicide kao prepreka u kontroli biljnih patogena	9 December 2019	University of Belgrade, Faculty of Agriculture, Serbia	Milan Stević

12.	Osobna iskustva – početak poslovanja male tvrtke, koja je prerasla u jednu od vodećih tvrtki u Hrvatskoj	29 January 2020	Žito Ltd., Osijek, Croatia	Marko Pipunić
13.	Legal problems of economic exploatation of land within the Natura 2000 network	8 June 2021	University of Veliko Tarnovo St Cyril and St. Methodius, Bulgaria	Nina Delimarinova
14.	Antifugalni i alelopatski utjecaj eteričnih ulja i biljnih ekstrakata na rast fitopatogenih gljiva	22 October 2021	Faculty of Agrobiotechnical Sciences Osijek, Croatia	Slavko Grgić
15.	Laboratory of Animal Nutrition and their research	9 November 2021	University of Szeged, Faculty of Agriculture, Hungary	Ágnes Süli
16.	Bird conservation research	9 November 2021	University of Szeged, Faculty of Agriculture, Hungary	Orsolya Kiss
17.	Sugar beet production in Konya (Turkey)	29 November 2021	Konya Food and Agricultural University, Agriculture and Nature Sciences, Türkiye	Furkan Işık
18.	Wheat production in Niğde	29 November 2021	Niğde Ömer Halisdemir University, Niğde, Türkiye	Furkan Özkan
19.	Industrial Crops That are Grown in Niğde	29 November 2021	Niğde Ömer Halisdemir University, Niğde, Türkiye	İbrahim Nuri
20.	The usage of microalgae as a renewable energy and pretreatments methods	7 June 2022	Artvin Coruh University, Faculty of Engineering Artvina, Türkiye	Vedat Yilmaz
21.	Economics of Rural and Agritourism	2 December 2022	University of Szeged, Faculty of Agriculture, Hungary	Jozsef Horvath
22.	Analiza genske ekspresije za intramuskularnu mast u svinja	21 December 2022	Faculty of Agrobiotechnical Sciences Osijek, Croatia	Goran Lipavić
23.	Antioxidant contents in some Roasceae fruits and tea sortiments	29 March 2023	Ovidius University, Constanca, Romania	Dan Razvan Popoviciu
24.	Nature protection in Poland	16 May 2023	Bydgoszcz University of Science and Technology, Faculty of Agriculture and Biotechnology, Poljska	Tomasz Stosik
25.	Mogućnosti rane dijagnostike i prevencije mastitisa u mliječnih krava	7 June 2023	Ministarstvo poljoprivrede RH, Croatia	Dalibor Đud
26.	Non-traditional fruit – medicine plants	14 September 2023	Research Institute of Mountain Stockbreeding & Agriculture in Troyan, Romania	Teodora Mihova-Chavdarova
27.	Determination of the barley diseases in Bingöl province of Turkey	19 September 2023	Bingöl University, Bingöl, Türkiye	Işil Saraç Sivrikaya

Faculty employees are very active in the Festival of Science, which is traditionally organised as a part of the Faculty's Open Door Day (Table 5.9). For already 11 years, the Faculty's Open Door Day has been organised with the aim of presenting the educational, scientific-research and professional activities performed by the Faculty employees. The mentioned event is always well attended, by gathering over 700 participants, from preschool children to school pupils and school graduates, as well as students. The goal is to present to visitors opportunities for studying and further education to acquire new knowledge and skills, and to present scientific research and professional work to the community in general. The engagement of the employees and students of the Faculty is reflected in the number of organised activities, 197 of them in the evaluated period, which is seen as a great promotion of the Faculty.

Table 5.9. The total number of activities carried out within the Open Door Day of the Faculty of Agrobiotechnical Sciences Osijek in the evaluated period

Year	Number and type of activity					Total
	Lectures	Workshops	Posters	Exhibitions	Installations	
2019	10	13	51	6	6	86
2020*	-	-	-	-	-	-
2021	6	14	14	3	4	41
2022	3	10	20	2	-	35
2023	6	9	20	-	-	35
Total (2019-2023)	***25***	***46***	***105***	***11***	***10***	***197***

*not organised because of the COVID-19 pandemic

The employees of the Faculty maintain successful cooperation with external stakeholders, which is emphasised by significant professional cooperation with, and inclusion of external stakeholders in decision-making processes at the Faculty. External stakeholders are included in committees at the Faculty, which have the task of developing study programmes tailored to the needs of the labour market and the economy and drafting numerous strategic documents of the Faculty. We particularly emphasise the involvement of businessmen in the Committee for cooperation with the economy sector and innovations and in the work of the Committee for quality assurance. Furthermore, the employees of the Faculty take part in creation of public policies and strategies in the field of biotechnical sciences and agriculture, at local, city, county, regional, national to international levels.

The Faculty maintains high-quality cooperation with secondary schools to attract prospective students. Most often, these are secondary schools from the five Slavonian counties, but there is also interest from other Croatian counties in organising visits to the Faculty to present to the pupils the Faculty activities. Such cooperation is also included in the Faculty's strategic documents and is gaining on its importance. As one of the examples, a cooperation agreement was signed with the Agricultural and Veterinary School in Osijek on 27 April 2023. The Faculty established the Committee for promotion that organises visits to secondary schools, and brings secondary school pupils to the Faculty for the purpose of introducing them with the activities carried out by the Faculty employees. Special workshops, exhibitions and educational activities and visits to our experiment stations are also offered to pupils. For many years now, the Faculty students have been publishing their newsletter Feniks, in which they present current events in the agricultural sector in an interesting and inspiring way. The Faculty invests significant efforts in promotion of Feniks through various social media networks (Facebook, Instagram and other profiles), at which it informs the public about delivered and upcoming activities and events at the Faculty.

Faculty employees are involved in various management bodies (professional/scientific) at the regional, national and international level. In the evaluated period, our employees performed the functions of rector and vice-rector of Josip Juraj Strossmayer University of Osijek and the head of the University Centre for Advancement of Quality Assurance in Higher Education. Many of them are prominent individuals in the social and political life of the local community, being engaged in the city, county and state government. For example, in the evaluated period, our teachers were members of the county and city assemblies, presidency of the Osijek City Council, they received numerous awards and recognitions from the city and county for their professional and scientific work, and performed other functions in the city and county. The above points to the fact that the Faculty develops and strengthens awareness and responsibilities among its employees for public engagement in various areas of scientific research, management and broader social and political

life. The significant activity of the Faculty employees (88) in the observed period was focused on the work of professional, public and advisory bodies and committees in the private and public sector at the national and international level. At the national level, this was expressed through 81 activities, and 7 activities at the international level. A further specification of involvement shows activity in 13 professional bodies, 6 advisory bodies, 1 public body and 51 boards and 7 commissions in the public sector and 2 in the private sector, while the remaining involvement refers to 8 various bodies. Membership in bodies is also distinguished by the type of involvement, so our 6 employees acted as heads/presidents of bodies, and they were also vice-presidents, consultants and experts.

Faculty employees are active in professional and civic associations (50) in creating various activities and implementing them at the local, regional, and national level.

The Faculty develops very successful cooperation with companies, especially in the agricultural sector and related areas, which employ Faculty graduates. They are also partners in various scientific and professional activities. Career Days are traditionally organised by the Office for student support and career development. At such events, students meet employers and can present themselves as potential workforce. At such events, a database of employers is also created and expanded. In the last two years, the Faculty has been organising the event University Advent for students to promote activities not only of the Faculty, but also of all University of Osijek constituents, employers in the local and regional surroundings. At such events, ALUMNI association and Association of postgraduate students of the Faculty.

It is especially worth noting that our teacher, Prof. Dr. Bojan Stipešević, won the award of the Society of Agricultural Journalists of Croatia (DANH) for the Communicator of the year. The award was presented due to his exceptional involvement in the promotion of agricultural profession, and his performances were noticed by the agrarian public with regard to his openness and communicativeness, as well as his accessibility and understanding of agricultural producers.

The Faculty traditionally organises the Family Farms Fair, usually during the week of the Faculty Day, i.e. in the third week of October. Business entities from the agricultural sector and current and former students of the Faculty participate in that event, which has achieved notable success and attracted consumer interest in this kind of event.

The Faculty offers 7 lifelong learning courses to interested participants from the economy and the public sector in order to ensure the active and continuous training of experts in the field of agronomy. Through lifelong learning courses, the Faculty contributes to the continuous development of knowledge and skills, and serves the local community and society as a whole.

In the evaluated period from 2019 to 2023, Faculty employees performed 1,664 reviews of papers, 48 reviews of projects and 20 reviews of programmes.

Faculty employees were also present in the media, with as many as 209 appearances. This significant presence in the media confirms their active engagement and presentation of scientific, educational and professional topics, which further increases the visibility and reputation of the Faculty in the community. In the evaluated period, there were 100 television appearances (100 or 47.8%) in various shows, 18 radio appearances (8.6%), 34 announcements on websites, social media and portals (17.7%), and 57 printed articles (27.3%) for the purpose of disseminating their activities in society. Most of the mentioned activities were realised in 2023.

5.4. Doctoral studies of the higher education institutions are aligned with the higher education institution's strategic programme, state-of-the-art scientific/artistic achievements, or professional standards and internationally accepted standards of high-quality doctoral education, where applicable.

The tradition of conducting postgraduate studies began in 1972, when the Faculty initiated the first postgraduate scientific study of Protection of plants and agricultural products. For many years now, the Faculty has been implementing the Doctoral study in Agricultural Sciences. The Departments of the Faculty have developed activities within the framework of general and narrow areas of agricultural sciences, and gathered the initiatives, achievements and particularities in the activities of their departments in the doctoral study. The doctoral study is aligned with the principles of the European higher education area and with the national strategic priorities based on knowledge in agriculture. The Doctoral study programme consists of 8 majors (Agroeconomics, Agrochemistry, Animal Nutrition and Forage Technology, Hunting and Cynology, Plant Breeding and Seed Production, Animal Husbandry, Technical Systems in Agriculture, Plant Protection), all of which represent the highest level of integration of science and the most significant contribution in the research-based teaching. The Doctoral study programme in Agricultural Sciences is based on the latest scientific findings and as such, it creates a stimulating environment for the development of new knowledge, skills and technologies necessary for the development of a knowledge-based society, both in national and international frameworks. The study is based on scientific activities carried out within scientific projects, and the continuity and development of research activity is reflected in the increased scientific activity of the Faculty, which developed new project applications. Competitive scientific projects are a basis for cooperation among Faculty departments, and with other faculties and scientific institutes.

The doctoral study in Agricultural Sciences is taken as a guideline in the various strategic documents of the Faculty, as well as in the newly created strategic documents on the basis of which activities have been started with realisation. Strategic aims of the Faculty are stated in the Faculty Development Strategy 2018/2019-2022/2023 and in the Strategic programme for scientific research 2019-2023. One of the strategic aims is to raise the quality level of postgraduate university (doctoral) study and the quality of young researchers, which has been largely realised (Realisation of Strategy and Strategic programme for scientific research). The newly adopted strategic documents of the Faculty provide significant support for development of the doctoral study (Faculty Development Strategy 2023/2024 - 2027/2028 and Strategic programme for scientific research 2024-2028), and set ambitious strategic aims related to raising of the quality level of the doctoral study and of students' performance. Defined measures are: promotion of doctoral theses defence according to the Scandinavian model, improving the assessment of doctoral students' performance on an annual level, improving mentoring skills at doctoral study for the application of modern teaching methods, encouraging the excellence of doctoral students, and promoting the doctoral study at the national and international level.

In the same way, the doctoral study is aligned with numerous national strategies that include postgraduate education, as well as with the Strategy of Josip Juraj Strossmayer University of Osijek 2021-2030 and other national and European strategic documents (Croatian National Development Strategy, Smart Specialization Strategy until 2029, European strategy for smart, sustainable and inclusive growth EUROPA 2020, etc.

In its first goal in the higher education segment, the Strategy for education, science and technology emphasises the development of research activity and its inclusion into the educational process, and the second goal is to raise the quality of the teaching staff, which is particularly pronounced in the doctoral study. The combination of teaching and scientific work is a necessary prerequisite for the quality functioning of the Faculty and Doctoral study. Thus, the results of scientific research form an integral part of knowledge that is passed on to generations of future doctoral students, scientists and experts. The results of numerous competitive scientific and professional projects are continuously implemented in the teaching process at the postgraduate level (doctoral and university specialist studies). The Faculty continuously raises the level of the teaching process quality and of teachers involved in teaching at the doctoral study. Since 2018, Mentoring workshops at the doctoral study have been introduced, and numerous other activities related to improving the competences of the teachers have been organised (workshops, forums, etc.), which additionally encourages the development of the teachers' creativity. Mentoring workshops are conducted by an accredited mentor in the biotechnical scientific field, and teachers involved in doctoral studies, especially those teachers taking over the first mentoring of a doctoral student are obliged to attend. The faculty improves scientific activity by financing the costs of the Doctoral study programme for all employed assistants.

Long tradition of scientific and research work means a great scientific potential of the Faculty, which is reflected in human resources and in well-organised scientific structure with high-quality research equipment, a well-organised experimental site for plant production and animal production.

According to the Re-accreditation plan of postgraduate university study programmes (decision issued on 22 March 2016), in the academic year 2016/2017, the Agency for Science and Higher Education carried out the re-accreditation of the Faculty's Doctoral study programme in Agricultural Sciences. In June 2016, the Expert Panel visited the Faculty and prepared a Final Report on the evaluation of the Doctoral study programme in Agricultural Sciences. On 3 February 2017, the Agency for Science and Higher Education issued a recommendation on re-accreditation and fulfilment of the conditions for carrying out a part of the Faculty's activities related to the implementation of the Doctoral study programme in Agricultural Sciences. Based on the prepared Action Plan for improvement of the quality of the mentioned study programme, on 21 March 2017, the Ministry of Science and Education issued a Certificate on fulfilment of the conditions for performing part of the Faculty's activities related to the Doctoral study programme in Agricultural Sciences. The Action Plan for improvement of quality of the Doctoral study programme in Agricultural Sciences for the period of 2017/2018-2021/2022 was based on recommendations of the Expert Panel. Reports on the realisation of the Action Plan were prepared (1st, 2nd and 3rd Report on the Action Plan realisation).

In the academic year 2022/2023, the Doctoral study programme in Agricultural Sciences had 116 enrolled students, which is about 15% of the total number of students studying at the Faculty. There was a significant number of enrolled part-time students (95.68%) compared to full-time students (those are assistants employed by the Faculty, 4.31%). In the stated academic year, three foreign students (2.58%) were also enrolled in the Doctoral study programme, and one doctoral thesis was written and defended in English language. The number of part-time students indicates

that they are working in the economic sector. By completing the study programme and acquiring the intended learning outcomes, as well as by defending the doctoral thesis, they significantly increase their capacity to create new intellectual property (patents, new technologies, licences, etc.), which certainly contributes to raising the work efficiency and productivity of their companies. Doctoral students should be the stakeholders of the development and application of new scientific methods, technologies, innovations and the knowledge in the economy. The above contributes to the stronger ties of the Faculty with the real sector and better cooperation of the academic community with the agricultural sector and economy.

The best doctoral students can apply for scholarships (Enrolment Scholarship and Graduation Scholarship) according to the applicable regulations, i.e. Ordinance on awarding Faculty scholarships to students of the Doctoral study programme in Agricultural Sciences. Quality monitoring of doctoral students is facilitated by the Ordinance on assessment and evaluation of assistants, postdoctoral researchers and mentors and the annual report on the performance of students and mentors/ doctoral study advisors, which is elaborated in the Regulations on Doctoral study programme.

Regulations on Doctoral study programme in Agricultural Sciences defines the mandatory participation of doctoral students in research, preparation and presentation of research results, by which they acquire ECTS credits within the study programme. Each student of the Doctoral study programme is assigned a study advisor, who helps them choose elective courses, and directs and supervises doctoral studes scientific research activity. The appointment of a mentor for advisory work during the preparation of the doctoral thesis is carried out at the latest during the application of the topic of the doctoral thesis. The mentors and co-mentors need to fulfil the necessary conditions for mentors, as stated in the Regulations. The mentor helps students and guides them through the studies and directs their scientific and research activities (choice of doctoral thesis methods, selection of research for doctoral thesis, finding scientific and professional literature, etc.). Mentors are also developing their skills in their continuous scientific work and teaching, as well as in transfer of knowledge, technology and innovation to the economy.

In the evaluated period, doctoral theses before evaluation and defence are made public at the Faculty website, which further increases transparency and public access to the work of the doctoral students. The anonymous survey is carried out every three years to evaluate work of mentors and co-mentors. The survey is conducted electronically, and the results are analysed by the Committee for the doctoral degree award. Results are implemented in the scientific-teaching process of the doctoral study. Employers that employ doctoral students also fill out the survey related to their satisfaction with the study programme and with delivery and implementation of new scientific knowledge in their own business entities.

In the evaluated period, with their doctoral students, mentors at doctoral study published 116 papers in journals (a1 and a2 categories) and in proceedings from international conferences (a3 category). Published papers are considered as a prerequisite for development of new international projects.

During the evaluated period, students were engaged in the teaching process in different ways. Doctoral students gained valuable experience in research at Experiment stations and in laboratories, participated in projects and gained knowledge important for their further study, as well as their career. Doctoral students participate in University projects that are approved to Faculty employees (six University projects, in the four of which Faculty was a main coordinator). The results of the mentioned projects were also used in doctoral theses. In the evaluated period, in the implementation of the Faculty's projects, doctoral students were involved in eight projects, and often used results in their papers.

Within the doctoral study programme, the Faculty traditionally organises the Day of Doctoral Students. The event is organised for the public to present research results of defended doctoral dissertations, as well as preliminary research results after positively evaluated doctoral topics achieved during the previous academic year. Such events are motivating doctoral students for efficient work and preparation of their doctoral dissertations. The public is informed about the doctoral study, they can participate in the exchange of experiences related to the research of doctoral students and mentors, and they gain insight into the diversity of scientific work at the Doctoral study programme. The event also promotes science, as well as the transfer of knowledge, technology and innovation to the economy.

In the past five years, doctoral dissertations were defended by 34 doctoral students, of whom 11.76% prepared their doctoral dissertations in the form of a collection of published scientific papers accompanied by a critical review chapter (a collection of original scientific papers, the so-called Scandinavian model).

In the evaluated period, in journals indexed in WoS, Jurica Jović, a successful doctoral student, published 10 papers, reaching 59 citations and *h*-index 5. Mario Ronta published 10 papers, gaining 28 citations and *h*-index 3, and Sanja Jelić Milković published 10 papers, and gained 16 citations and *h*-index 2. Below, there is a list of 5 scientific papers published by our doctoral students as first authors in the field of biotechnical sciences. Sanja Jelić Milković, PhD, senior assistant, wrote and defended her doctoral dissertation in English. Lucija Galić, PhD, and Magdalena Matić, PhD, assistants supported by the Croatian Science Foundation projects, defended their doctoral dissertations according to the Scandinavian model. Elena Petrović also published a well-received paper:

- Jelić Milković et al. (2023) paper published in Foods 12 (19), No. 3666, IF 4.7, Q1,
- Jelić Milković et al. (2023) paper published in Foods 12 (6), No.1255, IF 4.7, Q1, cit 6,
- Galić et al. (2021) paper published in Plants-Basel 10 (8), No. 1498, IF 4.0, Q1 , cit 15,
- Matić et al. (2021) paper published in Plants-Basel 10 (4), No. 611, IF 4.0, Q1, cit 10, and
- Petrović et al. (2022) paper published in Plants-Basel 11 (24), No. 3578, IF 4.0, Q1, cit 3.

The high quality of doctoral students' works is evident not only by high-ranking journals where doctoral students published their papers, but also in the increased citation of those papers in prestigious citation databases (WoS), which confirms the quality of the Doctoral study programme. The teaching and research process within the study incorporate the latest scientific knowledge important for raising the competencies of doctoral students in the global labour market.

All documents related to the Doctoral study programme and the Regulations are translated into English. Promotion of the Doctoral study programme was done through various media channels and social media, and on the international platform KEYSTONE. All of the above-mentioned activities resulted in maintaining the number of students enrolled in doctoral study, although the number of students at other levels of study dropped significantly.

Stronger internationalisation of the Doctoral study programme is included as a strategic aim in the Faculty's new strategic documents, which will be pursued in the coming years. The above indicates that the Doctoral study also fulfils the objectives of the National Plan for the Development of Education until 2027 by considering its integration into the European Education Area, improvement of students' competencies and skills for the digital transition, contribution to the green deal and strengthening of sustainable development competencies, which also contribute to increased mobility and stronger recognition of the Doctoral study programme globally.

In the evaluated period, the Faculty was involved in the creation of new doctoral studies. The employees were involved in the development and implementation of the Project HarISA (Harmonization and Innovation in PhD Study Programmes for Plant Health in Sustainable Agriculture), which was approved by Erasmus+ programme in the field of Strengthening Capacities in Higher Education on the European Movement politics and culture (EACEA). The project leader was the University of Zagreb, Faculty of Agriculture, and consortium was composed of 11 partners from 8 countries (4 countries of the European Union: Croatia, Italy, Bulgaria and Greece, and 4 countries of the Western Balkans: Bosnia and Herzegovina, Serbia, Montenegro and Albania). The project lasted from 2019 to 2022, and 9 teachers, 3 doctoral students and the head of the Office for international cooperation and projects participated on behalf of the Faculty. The goal of the project was to harmonise and modernise the Doctoral study programme in the countries of the Western Balkans and to create a network of researchers capable of responding to current challenges of health of plants and to contribute to the cooperation of the European Union and the countries of the Western Balkans in the implementation of the European Union's policy on plant health. The project received a very good rating from the European Agency for Education and Culture (EACA).

The Faculty participated in the development of the interdisciplinary doctoral study programme in Statistics of the University in Osijek during the evaluated period. The coordinator was the Faculty of Applied Mathematics and Informatics, and seven University of Osijek constituents were involved. Teachers from six scientific fields and seven scientific areas participated in the preparation of the study. This confirms creative interdisciplinary approach to development of studies that incorporate results of interdisciplinary and transdisciplinary research, by bridging various obstacles and eliminating certain deficiencies in the agricultural sector related to statistics. Furthermore, the study will contribute to the better offer of doctoral studies and the wider selection of elective courses at the University.

The results of the Erasmus+ project will also support the Faculty employees in the improvement of doctoral study, and in creation of future doctoral study programmes. The Faculty is a partner in the HEAL-in-ONE („Od digitalne tehnologije do obrazovnog alata: Unaprjeđenje kvalitete aktivnog učenja/poučavanja u online i hibridnim okruženjima u primijenjenim disciplinama poljoprivrednih znanosti / From digital technology to educational tools: Improving the quality of active learning and teaching in the online and hybrid environment in applied disciplines of agricultural sciences“). The project coordinator is the University of Belgrade, Serbia, and the partners are the University of Ss. Cyril and Methodius in Skopje, North Macedonia, the University of Trakia in Stara Zagora, Bulgaria, and the Educational Forum, Belgrade, Serbia.

Within the Bilateral agreement signed with the University of Perugia, Italy, there is a plan to establish a joint doctoral study in the field of biotechnology and environmental sciences and to appoint co-mentors at both institutions for the students. This will also stimulate the development of creativity and interdisciplinary nature of the Faculty employees.

Scientists are our valued human capital, therefore the continuous training of teachers in the Doctoral study programme contributes to the transfer of knowledge, technology and innovation to the local and regional community, especially in the field of the agricultural sector. In addition to the scientific and research activities mentioned above, the Faculty invests significant efforts in strengthening human resources. In the evaluated period, we managed to employ nine assistants and one senior assistant. Given the mentioned difficulty in securing coefficients for the Faculty staff, the new Faculty Development Strategy plans to intensify activities aimed at employment of assistants for projects carried out by Faculty. Likewise, in the SWOT analysis, opportunities refer to the increase in the number of applications of research project proposals and the funding of doctoral students (assistants) by the Croatian Science Foundation, the Ministry of Science,

Education and Youth of the Republic of Croatia, and EU projects. Within scientific projects of the Croatian Science Foundation and the Ministry of Science, Education and Youth, the Faculty employed 12 assistants who work on the realisation of the projects, as well as in the preparation, development and introduction of new scientific methods.

Young scientists and doctoral students are involved in the teaching and research process. In the year of evaluation, 11 assistant professors (13.5%) were included in the Doctoral study programme delivery along with 82 teachers appointed into higher scientific and teaching titles.

The Doctoral study programme is also delivered by 13 external associates, who are well-known experts in their fields. In the evaluated period, external associates of the Doctoral study programme published 112 scientific papers in journals indexed in the WoS database, the number of citations in the same database was 881, and they were engaged in 43 projects.

5.5. The higher education institution applies the principles of open science in its activities, processes and acts.

The Faculty is actively involved in the implementation of the open science policy, stipulated in the document of the University of Osijek, i.e. in the Open Science Policy of Josip Juraj Strossmayer University of Osijek and the Faculty's Guidelines for implementing the Open Science Policy, which were adopted at the beginning of 2024. Since 2019, when the Workshop "Changes that mean (scientific) life: Open science, why is it important and how OpenAIRE can help?" was organised at the University, the Faculty has been carrying out activities related to Open Science.

Employees of the Faculty Library apply open science by filling their own repository with various objects/papers (assessment papers, scientific and professional papers). In April 2021, the Faculty received recognition for the promotion of open science from the Coordinating panel of the DABAR (Digital Academic Archives and Repositories).

Even before the adoption of the strategic document, the Faculty implemented the system of open science. The scientific and professional journal Poljoprivreda / Agriculture publishes all contents in open access.

In chapter 5.1. The higher education institution is recognisable by scientific research and/or artistic achievements in all the scientific fields in which it conducts studies, there is a list of 25 most important scientific papers published by Faculty employees in the period from 2019-2023 according to the journal impact factor (Table 5.2.). As of that data, 11 papers were published in open access journals. The Table 5.3 lists 15 most important scientific papers of Faculty employees published in the period 2019-2023 in journals in the field of biotechnical sciences, the area of agriculture, of which 10 are in open access. Furthermore, Table 5.7 shows 5 most significant papers of young scientists (up to 35 years old), published in the evaluated period, of which 3 are in open access. The above facts confirm the Faculty employees commitment to publication of papers in open access journals.

Among the published scientific papers in open access in 2020, there is the paper by Korunić, Z., Liška, A., Lucić, P., Hamel, D., Rozman, V. (2020): Evaluation of diatomaceous earth formulations enhanced with natural products against stored product insects. Journal of Stored Products Research, 86, 2020, 101565. https://doi.org/10.1016/j.jspr.2019.101565), which received

recognition from Elsevier and was linked to the Sustainable Development Goals helping to tackle some of the world's biggest challenges.

Scientific and research activities at the Faculty are carried out according to the principles and guidelines of the open science policy, and there is continuous increase in available content in open access.

In the Faculty's own repository, all assessment papers (bachelor, master, specialist theses and doctoral dissertations) are published in open access. Since 2013, at the Faculty website, the Library domain, doctoral dissertations, and specialist theses have been published in open access. In addition, the Library publishes e-sources and digital textbooks.

Total number of objects in open access in the evaluated period and their percentage in open access in relation to the total number of objects visible in the institutional repository DABAR is shown in Table 5.10.

Table 5.10. The total number of objects, the number of objects in the evaluated period, their percentage in open access and their percentage in the evaluated period in relation to the total number of objects visible in the institutional repository DABAR

Type of object	Total		2019-2023		%*
	Number	open access, %	Number	open access, %	
Master theses	1415	*99,93*	713	*99,86*	50,39
Bachelor theses	1395	*99,86*	685	*99,71*	49,10
Doctoral dissertation	78	*100*	34	*100*	43,59
Specialist theses	11	*100*	5	*100*	45,45
Original scientific paper in journal	415	*100*	188	*100*	45,30
Review paper in journal	88	*100*	55	*100*	62,50
Preliminary communication in journal	37	*100*	19	*100*	51,35
Professional paper in journal	38	*100*	20	*100*	52,63
Scientific paper – invited lecture	6	*100*	5	*100*	83,33
Scientific paper - other	2	*100*	2	*100*	100,00
Paper - other	64	*100*	3	*100*	4,69
Presentations at conferences	2	*100*	2	*100*	100,00
Edited books	27	*100*	11	*100*	40,74
Authored books	10	*100*	4	*100*	40,00
Research data management plan	2	*100*	2	*100*	100,00
TOTAL	*3590*		*1748*		*48.69*

* The percentage of objects in the evaluated period in relation to the total number of objects visible in the institutional repository DABAR

In the evaluated period, there is a significant number of objects in most categories available in open access in the Faculty repository. Thus, almost all objects are available in open access with a 100% share both for the total number and for the evaluated period, which is an extremely valuable indicator of the open access for all objects recorded in the Faculty repository. This points out the increased efforts to allow open access to assessment papers, educational materials and papers. Application of the concept of open science and the principle of reproducibility of scientific research is widened. On the Merlin platform, all students at all levels of study have access to the necessary teaching materials for exam preparation.

The analysis of open access to scientific and professional publications and the management of research data in the Faculty repository in relation to the total number of the mentioned objects in the evaluated period indicates their different availability ranging from 0% to even 100% (Analytic Supplement, Table 5.3.). Editorial books are objects with highest availability, research data management plans are also greatly available, although their number is very small. Published papers, published papers in conference proceedings, authored books follow in availability, yet there are no book chapters available. It is necessary to increase the input and availability of publications prepared by Faculty employees (books, research data management plans, papers, etc.), and special attention should be given to the availability of research data management plans, which we have just started entering into the Faculty repository. The mentioned activities are also outlined in the Guidelines for implementing the Open Science Policy.

Out of the total number of objects stored in the Faculty repository (3,590 objects), 99.99% of them are in open access. The largest share refers to master theses (40%), followed by bachelor theses with 39% and original scientific papers with 12%. In the evaluated period, as shown in Graph 5.3., the largest number of objects in open access refers to master theses (41%), bachelor theses (39%) and original scientific papers (11%).

Graph 5.3. Number of objects in Faculty repository in the period 2019-2023

The Faculty maintains its own repository/database NIB (teaching and research database), in which the list of published papers (scientific and review), contracts, and the list of bachelor and master theses is regularly updated.

According to the Open Science Policy and the Guidelines for implementing the Open Science Policy, the Faculty records licences under which papers are published. Students at all levels of study sign a Declaration of Academic Integrity and give the Faculty a permission to publish their assessment papers at the website in open access.

The guidelines for the implementation of the Faculty's open science policy emphasise the need of ensuring open access to assessment papers (bachelor, master, specialist theses and doctoral dissertations), scientific, professional and popular papers, papers published in journals and other publications published by the Faculty, as well as educational content and research data. The Faculty supports the FAIR principle (Findable, Accessible, Interoperable, and Reusable). The adherence to the Open Science Policy needs to be incorporated as one of the criteria in the Ordinance on awarding excellence of the Faculty’s teachers and associates. Employees should be

encouraged to regularly cite papers from the Faculty, to avoid predatory journals, to support publication in open access journals, to apply strategies to increase citations, and to improve the visibility of papers through social media and databases.

The Faculty traditionally organises the Faculty's Open Doors Days with the aim of presenting its educational, scientific and professional activities to the public. At such events all visitors are introduced to scientific research work and explained the concept of open access to science.

List of annexes

Annexes to Self-evaluation report that serve as evidence of the fulfilment of certain quality standards are available at: https://reakreditacija.fazos.hr/list-of-annexes/