The Romanian Agency for Quality Assurance in Higher Education

External Evaluation Report (REE) for the procedure for obtaining accreditation of Doctoral Study Domain

Higher Education Institution/Education Provider Organization:	Universitatea din Oradea (University of Oradea)
Doctoral School:	Ştiinţe inginereşti (Engineering Sciences)
Doctoral Domain:	Fizică (Physics)
The objective of the external evaluation:	Acreditare (Accreditation)

Members of the ARACIS Evaluation Panel

No.	Last Name and First Name	Team role	Signature
1.	BUNOIU Mădălin	Expert evaluator	
2.	GHINEA Răzvan	International Expert	
3.	CIOBANU Tamara	PhD Student Evaluator	

I. Introduction

- the context in which the external evaluation report was drafted (the type of evaluation, the period covered by the evaluation, membership of the external quality experts' panel, etc.);

The External Evaluation Report (REE) was drafted in the context of the external quality evaluation procedure for the accreditation of a new doctoral study field – Physics – within the University of Oradea. The evaluated domain is integrated into the Doctoral School of Engineering Sciences under IOSUD – University of Oradea. Since this is a new doctoral programme, no previous external evaluation existed. According to the ARACIS Guide, the evaluation procedure applies to: provisional authorization, accreditation, and periodic evaluation for maintaining accreditation of doctoral study domains (DSUD). The evaluation process is based on: Law no. 199/2023 on Higher Education, Government Decision no. 962/2024 regarding the methodology for external quality assurance and the ARACIS Guide for doctoral study domains.
The internal evaluation report specifies that the assessment reflects the institutional preparedness for launching the doctoral field, because the programme had not previously operated and therefore there were no doctoral students or graduates to evaluate. The period covered by the evaluation corresponds to the preparation and submission of the Internal Evaluation Report in 2025 for the accreditation procedure of the doctoral field Physics.

- description of the higher education institution / Romanian Academy (establishment, evolution, mission, governance, structure, study programmes/domains, external quality evaluation procedures applied);

The University of Oradea is a public higher education institution with a long academic tradition dating back to 1780. In its current form, the university was established in 1990 and has developed into a major educational and research centre in western Romania. The institution includes 15 faculties, 47 departments, 7 doctoral schools, 101 bachelor programmes, 68 master programmes, and 20 doctoral fields. Its mission focuses on advanced education, scientific research, innovation, and knowledge transfer to society, in accordance with Law no. 199/2023 and the principles of the European Higher Education Area. Governance is ensured through the University Senate, Administrative Council, and Rector. The doctoral field Physics is integrated within the Doctoral School of Engineering Sciences. The university applies internal and external quality assurance procedures in accordance with ARACIS standards, HG 962/2024, and national legislation, including accreditation, periodic evaluation, and follow-up procedures.

- general description of the doctoral study domain (why it was established - in the case of a provisional authorisation to operate; evolution and/or changes since the last external quality evaluation procedure - in the case of procedures intended for accreditation or maintaining accreditation, as applicable).

The doctoral study domain Physics was established within the Doctoral School of Engineering Sciences of the University of Oradea as a result of the natural development of the existing academic and research capacity in the field of fundamental sciences. Its establishment is justified by the need to strengthen advanced research in physics, expand the institutional disciplinary portfolio, and support the university's strategy for internationalization and scientific excellence. The domain aims to develop theoretical and applied research in areas such as medical physics, radiobiology, quantum systems, artificial intelligence applied to radiation therapy, and computational modelling. Since this is a new doctoral programme, there are no previous external evaluations, doctoral students, or graduates; therefore, the evaluation reflects the institution's preparedness to organize and implement the doctoral field in accordance with ARACIS standards and national legislation.

II. Methods used

- Analysed documents (internal evaluation report and its annexes; additional documents requested before and during the on-site visit, if any; other documents or data);

The analysis was based on the Internal Evaluation Report (REI) prepared by the University of Oradea for the doctoral study domain Physics and on its annexes, including documents regarding institutional organization, curricula, doctoral supervisors, research infrastructure, quality assurance procedures, strategic and operational plans, and research activities. The evaluation also considered the ARACIS Guide for the external evaluation of doctoral study domains, the standards and performance indicators included in Annex 1, and the provisions of Government Decision no. 962/2024 regarding external quality assurance in higher education. Additional supporting documents and clarifications may be requested by the evaluation panel before or during the on-site visit, in accordance with ARACIS procedures.

- On-site visit (general list of visited locations and categories of persons with whom debates have been organised);

The on-site evaluation visit took place on 23–24 March 2026 at the University of Oradea, mainly within the CSUD Department and the University Library facilities. The evaluation panel organized meetings with representatives of the university and doctoral school management, the team that prepared the Internal Evaluation Report, doctoral supervisors, research centre and laboratory coordinators, quality assurance representatives, members of the University Ethics Committee, and employers. The panel also visited the material and research infrastructure dedicated to the doctoral field Physics, including laboratories and research facilities. Technical working meetings for clarifications related to the Internal Evaluation Report were held throughout the visit. The discussions involved representatives of IOSUD leadership, the Doctoral School of Engineering Sciences, the Faculty of Informatics and Sciences, research centres, quality assurance structures, ethics bodies, and external stakeholders from the socio-economic environment.

- Other relevant methods or aspects.

It is not the case.

III. Judgement on the extent to which the standards and performance indicators are fulfilled

DOMAIN A. Institutional capacity

Criterion A.1. Managerial and administrative structures and processes involving students and other stakeholders

Standard S.A.1.1. Organisational components and institutional processes The HEI has organisational components in its structure, which function based on adequate competences, responsibilities, processes, and implementation procedures, and ensure an effective management system.	
Indicator I.P.A.1.1.1	For delivering the study programme/domain, the HEI has adequate organisational components and an adequate management system, which operate based on methodologies, regulations and procedures that are periodically reviewed as required by law.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The University of Oradea and IOSUD operate based on an adequate institutional and managerial framework regulated through methodologies, procedures, regulations, and internal operational documents periodically updated according to national legislation and ARACIS requirements. The organization and functioning of the doctoral studies are regulated by the University Charter, the Regulation on Doctoral Studies (ROFSUD), quality assurance procedures, and operational regulations available on the university website. The doctoral field Physics is organized within the Doctoral School of Engineering Sciences, established in the academic year 2011–2012, under IOSUD – University of Oradea. The doctoral school currently coordinates several doctoral domains and operates through clearly defined managerial structures, including the CSUD and the Doctoral School Council. The university applies internal quality assurance procedures aligned with Law no.

199/2023, HG no. 962/2024, and ARACIS standards. The institutional management system includes strategic and operational planning, periodic revision of procedures, transparent governance mechanisms, student representation in decision-making structures, and dedicated administrative and research support structures. The Internal Evaluation Report also confirms that the doctoral field benefits from appropriate organizational structures, qualified doctoral supervisors, research centres, laboratories, and administrative support necessary for the implementation of the doctoral programme in Physics.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysis of the documentation and of the information obtained during the on-site visit confirms that the University of Oradea provides an adequate organizational and managerial framework for the implementation of the doctoral field Physics. The institutional management system includes clearly defined governance structures, transparent decision-making mechanisms, strategic and operational planning, and periodic review of procedures. The evaluation panel confirmed the existence of appropriate administrative support, qualified doctoral supervisors, dedicated research infrastructure, and functional quality assurance mechanisms. Meetings held during the evaluation visit with university management, doctoral supervisors, quality assurance representatives, ethics committee members, and research centre coordinators demonstrated coherent institutional involvement in the organization and monitoring of doctoral activities.

✓ Aspects that constitute best practice examples

Examples of best practices identified during the evaluation include the strong integration of the doctoral field within the institutional strategy of the University of Oradea, the interdisciplinary research approach promoted through the Research Centre in Applied Natural Sciences, and the alignment of doctoral research directions with current international scientific priorities. The doctoral field benefits from qualified doctoral supervisors who fulfill CNATDCU standards, modern research infrastructure, and active collaboration between IOSUD, the doctoral school, and the faculty managing the programme. Another good practice is the integration of advanced research topics such as medical physics, artificial intelligence in radiotherapy, quantum systems, and computational modelling, which increase the international relevance and interdisciplinarity of the doctoral programme. The institutional commitment to quality assurance, strategic development, digitalization, and international visibility also represents a significant strength.

✓ Recommendations

It is not the case.

The indicator is: fulfilled

Standard S.A.1.2. Stakeholder engagement The HEI proves that it engages the relevant stakeholders in developing methodologies and regulations, as well as implementation procedures.	
Indicator I.P.A.1.2.1	The opinions of the faculty and department members, of the subsidiary or extension[1] and of other stakeholders are considered in the process of adopting and revising methodologies, regulations and implementation procedures.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The University of Oradea demonstrates stakeholder involvement in the development and revision of methodologies, regulations, and implementation procedures through its participatory governance and quality assurance mechanisms. Within IOSUD and the Doctoral School of Engineering Sciences, stakeholders involved in decision-making and consultation processes include academic staff, doctoral supervisors, students, quality assurance representatives, and external partners. Student representation is

[1] The faculty, department, subsidiary, extension - hereinafter “organisational components”

ensured in the Senate and institutional committees, contributing to transparency and participatory governance. The evaluation visit included meetings with representatives of the doctoral school management, doctoral supervisors, quality assurance structures, ethics committee members, and employers from the socio-economic environment, confirming the existence of active consultation and collaboration mechanisms in revising and implementing institutional procedures. The Internal Evaluation Report also highlights the university's strategic orientation toward collaboration with stakeholders, continuous quality improvement, and alignment of doctoral studies with academic and labour market needs.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysis of the documentation and of the information obtained during the evaluation visit confirms that the University of Oradea effectively involves relevant stakeholders in the adoption, implementation, and periodic revision of methodologies, regulations, and operational procedures related to doctoral studies. Institutional governance structures include academic staff, doctoral supervisors, students, quality assurance representatives, and external stakeholders, ensuring participatory decision-making and transparency. Concrete examples identified during the evaluation include: the participation of students in the University Senate and Senate committees; the involvement of doctoral supervisors and faculty representatives in the elaboration of the Internal Evaluation Report; meetings organized with employers from the socio-economic environment (e.g., Plexus and Celestica representatives); consultations with the Quality Assurance Department and the University Ethics Committee during the evaluation visit. The meetings held during the on-site visit with representatives of the Doctoral School of Engineering Sciences, quality assurance structures, ethics committee members, and employers demonstrated the existence of functional consultation mechanisms and active collaboration between the university and its stakeholders.

✓ Aspects that constitute best practice examples

Examples of best practices identified for this indicator include the participatory governance model implemented at the University of Oradea, which ensures the active involvement of academic staff, doctoral supervisors, students, and external stakeholders in decision-making and quality assurance processes. Student representation in the University Senate and institutional committees represents a strong example of transparency and stakeholder engagement. Another good practice is the systematic involvement of external stakeholders and employers in consultation activities related to doctoral studies and programme development, as confirmed during the evaluation meetings with representatives from companies such as Plexus and Celestica.

✓ Recommendations

It is not the case.

The indicator is: fulfilled

Criterion A.2. The material resources and optimisation of the use of the material resources

Standard S.A.2.1. Material resources The HEI owns adequate movable and immovable assets to enable it to carry out the study programme/domain.	
Indicator I.P.A.2.1.1	The HEI legally owns venues for the related education, research and administrative processes, as well as for services for students, doctoral students and trainees, thus providing an enabling environment for living and studying, including for disabled persons. Optimal venues are also provided for activities of the staff. Such venues are adequately equipped.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The University of Oradea provides adequate material resources and infrastructure necessary for the organization and development of the doctoral study domain Physics within the Doctoral School of Engineering Sciences. The university owns educational, administrative, and research facilities that support doctoral activities, including lecture rooms, offices, laboratories, library spaces, and research centres. The doctoral field Physics benefits from the infrastructure of the Faculty of Informatics and Sciences and from the Research Centre in Applied Natural Sciences (SNA), which includes dedicated laboratories and research facilities. The laboratories available for doctoral activities include: the Applied Natural Sciences Research Laboratory; the in silico Modelling of Radiobiological Processes Laboratory; the Transport in Mesoscopic Systems Laboratory. The Internal Evaluation Report specifies that these facilities are adequately equipped for teaching, documentation, computational modelling, simulations, data processing, and advanced scientific research activities. During the evaluation visit, the ARACIS panel conducted a direct visit of the material resources and research infrastructure used for the doctoral domain Physics.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysis of the documentation and the findings from the on-site evaluation confirm that the University of Oradea owns and manages adequate movable and immovable assets necessary for the implementation of the doctoral study domain Physics. The infrastructure available through the Faculty of Informatics and Sciences and the Doctoral School of Engineering Sciences ensures appropriate conditions for education, research, academic supervision, and administrative support. The evaluation panel verified the existence and functionality of research laboratories, office spaces, and research facilities dedicated to doctoral activities. The laboratories are equipped with computational infrastructure, research equipment, and software resources suitable for the proposed doctoral research directions, including medical physics, radiobiology, artificial intelligence applications, quantum systems, and computational modelling. The university also provides access to library services, digital resources, and institutional facilities supporting both students and academic staff. The organization of the visit and the discussions with research centre coordinators and doctoral supervisors confirmed the adequacy and effective use of the infrastructure.

✓ Aspects that constitute best practice examples

A best practice identified during the evaluation is the integration of the doctoral field Physics within the interdisciplinary Research Centre in Applied Natural Sciences, which facilitates collaboration between physics, chemistry, biology, and engineering research teams. Another example of good practice is the availability of specialized research laboratories dedicated to advanced computational modelling, radiobiological simulations, and mesoscopic transport systems, supporting internationally relevant research topics. The institutional registration of the research centre within the EERTIS platform and the university's strategic investment in research infrastructure, digitalization, and interdisciplinary research further strengthen the quality of the doctoral environment.

✓ Recommendations

The university is also encouraged to further expand access to international research infrastructures and collaborative research networks in order to increase the visibility and competitiveness of doctoral research activities.

Continuous investment in digital research resources, accessibility facilities for persons with disabilities, and interdisciplinary laboratory development is recommended to sustain the long-term development of the doctoral domain.

The indicator is: fulfilled

Standard S.A.2.2. Management of material resources The organisational components manage the movable and immovable assets used for the evaluated study programme/domain in an optimal, sustainable manner.	
Indicator I.P.A.2.2.1	The movable and immovable assets are properly maintained to ensure optimal conditions for studying, living and research, as well as for work.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The University of Oradea manages the material resources dedicated to the doctoral field Physics through the Doctoral School of Engineering Sciences and the Faculty of Informatics and Sciences. The Internal Evaluation Report specifies that the doctoral programme benefits from educational, administrative, and research spaces adequately equipped for teaching, scientific research, simulations, data processing, and academic supervision activities. The doctoral field uses the infrastructure of the Research Centre in Applied Natural Sciences (SNA). The report indicates that these facilities are equipped for computational modelling, theoretical research, scientific simulations, data processing, and interdisciplinary research activities related to medical physics, quantum systems, radiobiology, and artificial intelligence applications. The evaluation panel also conducted a direct visit of the material resources and research infrastructure during the external evaluation process.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysis of the documentation and the observations made during the evaluation visit confirm that the University of Oradea manages the movable and immovable assets used for the doctoral field Physics in an appropriate and sustainable manner. The available infrastructure provides suitable conditions for research, academic supervision, teaching, and administrative activities. The laboratories and research facilities are functionally integrated into the doctoral activity and support the implementation of advanced research topics aligned with the objectives of the doctoral domain. The evaluation panel verified that the facilities are operational, adequately maintained, and equipped with appropriate IT infrastructure and research resources necessary for doctoral studies. Concrete examples include the use of specialized laboratories for radiobiological simulations, computational modelling of quantum systems, and mesoscopic transport studies, as well as the integration of research infrastructure within an interdisciplinary research centre.

✓ Aspects that constitute best practice examples

An example of good practice is the existence of specialized research laboratories dedicated to advanced computational and theoretical research, allowing doctoral students and supervisors to conduct internationally relevant scientific activities in areas such as medical physics, quantum systems, and artificial intelligence applications in radiotherapy.

✓ Recommendations

It is not the case.

The indicator is: fulfilled

Criterion A.3. Adequate human resources and transparent staff recruiting procedures developed according to the law

Standard S.A.3.1. Human resources The HEI has the required human resources to organise and deliver the evaluated study programme/domain.	
Indicator I.P.A.3.1.1	The human resources of the organisational component are suitable to perform the activities pertaining to the evaluated study programme/domain. The teaching staff has the required qualifications and professional competences to teach the subject matters assigned to them in the job list.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The Internal Evaluation Report indicates that the doctoral field Physics benefits from qualified academic staff and doctoral supervisors affiliated with the Doctoral School of Engineering Sciences within IOSUD – University of Oradea. The doctoral field is coordinated by two tenured professors holding habilitation

certificates and fulfilling the CNATDCU minimum standards required for doctoral supervision: Professor Loredana Gabriela Marcu; Professor Cătălin Paşcu Moca. The report specifies that both doctoral supervisors are tenured academic staff members of the University of Oradea and are affiliated with the Doctoral School of Engineering Sciences. Their habilitation was granted through Ministerial Orders issued in 2023. The Doctoral School of Engineering Sciences currently operates with 24 doctoral supervisors and provides an interdisciplinary academic and research framework in engineering sciences and mathematics. The University of Oradea overall has 877 tenured academic staff members, including professors, associate professors, lecturers, and teaching assistants. The research activities supporting the doctoral field Physics are carried out within the Research Centre in Applied Natural Sciences and associated laboratories, where doctoral supervisors and teaching staff are actively involved in scientific research projects and interdisciplinary collaborations.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysis of the documentation and of the information obtained during the evaluation visit confirms that the University of Oradea has adequate human resources for the implementation of the doctoral field Physics. The doctoral supervisors involved in the programme are qualified academic staff members, hold habilitation certificates, meet the CNATDCU standards, and demonstrate relevant scientific expertise in the proposed doctoral research directions. The research topics coordinated by the doctoral supervisors include advanced and internationally relevant areas such as medical physics, radiobiology, quantum systems, artificial intelligence applications, and computational modelling. The evaluation panel also confirmed, through meetings with doctoral supervisors and institutional representatives, that the academic staff is actively involved in teaching, research, doctoral supervision, and quality assurance activities. Concrete examples include: the participation of the doctoral supervisors in interdisciplinary research centres and laboratories; the fulfilment of habilitation and CNATDCU standards; the integration of the doctoral field within the broader research environment of the Doctoral School of Engineering Sciences.

✓ Aspects that constitute best practice examples

The relatively recent habilitation of the doctoral supervisors (2023) also reflects the institutional effort to consolidate and expand the doctoral capacity in emerging scientific domains.

✓ Recommendations

The university is encouraged to support the continuous professional development and international visibility of doctoral supervisors through participation in international research projects, mobility programmes, and scientific networks. Further strengthening interdisciplinary collaborations and attracting young researchers toward habilitation and doctoral supervision activities would contribute to the sustainable development of the doctoral field Physics.

The indicator is: fulfilled

Indicator I.P.A.3.1.2	The HEI ensures professional and personal development for its staff.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The University of Oradea promotes the professional and personal development of its academic staff through institutional strategies focused on research excellence, internationalization, digitalization, and continuous quality improvement. The Institutional Strategic Development Plan and the Rector's Managerial Programme emphasize the development of academic and research performance, support for innovation, and the strengthening of doctoral education and research capacities. The Internal Evaluation Report highlights that the university supports the development of scientific research through accredited research centres, participation in national and international projects, and the involvement of academic staff in interdisciplinary

research activities. Between 2020 and September 2024, the university attracted research funding amounting to 97,768,484 RON. Within the doctoral field Physics, academic staff and doctoral supervisors are actively involved in advanced research activities carried out in the Research Centre in Applied Natural Sciences and associated laboratories. The university also promotes digitalization, modern teaching methods, international visibility, and collaboration with socio-economic partners as strategic priorities for staff development.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysis of the documentation and the information obtained during the evaluation process confirms that the University of Oradea provides an institutional framework supporting the professional and personal development of academic staff involved in the doctoral field Physics. The institutional strategic objectives explicitly include the promotion of research excellence, digital competencies, interdisciplinary collaboration, and international academic visibility. Concrete examples include: the support for participation in research projects and interdisciplinary research centres; the development of modern research laboratories and digital infrastructure; the encouragement of international collaborations and scientific visibility; the recent habilitation and integration of doctoral supervisors within the doctoral school. The doctoral supervisors are actively involved in advanced scientific research areas and contribute to the development of innovative research directions, demonstrating institutional support for continuous academic development.

✓ Recommendations

The university is encouraged to develop additional structured professional development programmes focused on emerging interdisciplinary areas, digital research competencies, and innovative doctoral supervision practices. Further support for young researchers and future habilitation candidates would contribute to the long-term sustainability and expansion of the doctoral supervision capacity in the field of Physics.

The indicator is: fulfilled

Standard S.A.3.2. Recruitment procedures Teaching staff recruitment procedures compliant with the provisions of the law.	
Indicator I.P.A.3.2.1	Recruitment procedures comply with the provisions of the law, and are established and carried out transparently.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The University of Oradea applies recruitment procedures for academic staff in accordance with national legislation, the University Charter, and internal regulations governing academic employment and promotion. The Internal Evaluation Report states that the organization and functioning of the university are regulated through internal methodologies, regulations, and procedures aligned with Law no. 199/2023 and the principles of the European Higher Education Area. The doctoral supervisors involved in the doctoral field Physics are tenured academic staff members of the University of Oradea, holding habilitation certificates granted through official ministerial orders: Professor Loredana Gabriela Marcu – OME no. 4835/21.06.2023; Professor Cătălin Paşcu Moca – OME no. 6386/27.09.2023. The Internal Evaluation Report also confirms that all doctoral supervisors fulfil the CNATDCU minimum standards required for doctoral supervision activities. The university governance framework includes transparent academic management structures, including the University Senate, Administrative Council, and institutional quality assurance mechanisms.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysis of the documentation confirms that the recruitment and affiliation procedures for academic staff involved in the doctoral field Physics comply with the legal provisions applicable to higher education and doctoral studies in Romania. The doctoral supervisors are tenured academic staff members who obtained habilitation according to national procedures regulated by the Ministry of Education and fulfil the CNATDCU standards required for doctoral supervision. The institutional governance and quality assurance framework supports transparency in academic recruitment, promotion, and affiliation processes. The existence of publicly available regulations, operational procedures, and institutional governance structures demonstrates procedural transparency and compliance with legal requirements. Concrete examples identified during the evaluation include: the official ministerial validation of habilitation certificates; the verification of CNATDCU standards compliance; the integration of doctoral supervisors within IOSUD and the Doctoral School of Engineering Sciences through institutional procedures.

✓ Recommendations

The development of structured institutional mechanisms for attracting international researchers and visiting professors in the field of Physics would strengthen the international dimension of the doctoral domain. Additional institutional measures supporting academic career development, mentorship for young researchers, and participation in international recruitment and research networks could further enhance the visibility and competitiveness of the doctoral field. The implementation of periodic institutional analyses regarding academic recruitment needs and research capacity development may support the sustainable expansion of the doctoral supervision team.

The indicator is: fulfilled

Criterion A.4. Digitalisation of institutional processes

Standard S.A.4.1. Digital transformation The digital transformation process in the organisational component seeks to achieve administrative simplification and improve the quality of the services provided to the members of its own community, as well as to third parties.	
Indicator I.P.A.4.1.1	The organisational component uses IT tools in its own procedures, to improve access and provide good quality services for the members of its own community and the indirect beneficiaries of education.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The University of Oradea identifies digitalization as a strategic institutional objective and integrates digital transformation into its educational, administrative, and research activities. The Internal Evaluation Report states that the university promotes the digitalization of institutional processes, the development of digital competencies, and the implementation of modern technology-based teaching and research methods. The university uses institutional websites, digital communication platforms, online administrative procedures, and electronic resources to support academic and administrative activities. The report specifies that regulations, procedures, operational plans, and public-interest information are available on the university website. The doctoral field Physics benefits from digital infrastructure available within the Research Centre in Applied Natural Sciences and associated laboratories, where computational modelling, simulations, numerical analysis, and data processing activities are performed. Examples of digital research and educational activities include: computational modelling of radiobiological processes; simulations of quantum systems; numerical analysis and data processing; artificial intelligence applications in radiotherapy and medical physics.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysis of the documentation and the findings of the evaluation process confirm that the University of Oradea effectively integrates IT tools and digital solutions into its academic, administrative, and research procedures. Digitalization is embedded within the university's strategic development objectives and supports the simplification of administrative processes, transparency, and improved access to institutional services. The doctoral field Physics benefits from modern computational infrastructure and specialized digital research environments supporting simulations, data analysis, modelling activities, and interdisciplinary scientific research. Concrete examples identified during the evaluation include: online access to institutional regulations and procedures; use of digital communication and administrative systems; implementation of computational and simulation-based research activities; integration of artificial intelligence and advanced modelling techniques into research directions. The institutional emphasis on digital competencies, smart campus development, and technology-supported education demonstrates a coherent digital transformation strategy.

✓ Recommendations

The expansion of integrated digital platforms dedicated to doctoral activity management, research monitoring, and academic reporting could further improve institutional efficiency and accessibility. Additional investments in high-performance computing infrastructure, specialized research software, and cybersecurity measures would strengthen the digital research environment of the doctoral field Physics. The development of structured digital training programmes for doctoral students and academic staff in areas such as artificial intelligence, research data management, and advanced computational methods may further enhance institutional digital competencies.

The indicator is: fulfilled

DOMAIN B. Educational efficacy

Criterion B.1. Content and relevance of study programmes

Standard S.B.1.1. Content of study programme/s[2] The study programme is based on a curriculum designed so that students can acquire the expected learning outcomes.	
Indicator I.P.B.1.1.1	The study programme is developed and structured according to the expected learning outcomes, and organised based on transferable study credits. It includes all learning, teaching, practical training, research and evaluation experiences, which, together, lead to a higher education qualification.

The doctoral study program in Physics at the University of Oradea is developed to ensure the comprehensive training of future graduates, fully aligning its curriculum with the expected learning outcomes of Level 8 of the National Qualifications Framework (CNC) and the European Qualifications Framework (EQF). Spanning 4 years and including 240 transferable ECTS credits, the program encompasses a balanced, coherent totality of learning, teaching, and practical training focused on developing both professional and transversal competencies in physics. This structured curriculum integrates core academic coursework, such as Scientific Research Methodology, Ethics and Academic Integrity, and Research Project Management, with extensive scientific research activities, mandatory participation in international conferences and seminars, teaching assistance, and direct involvement in faculty research projects. The academic progress and success of the PhD student are measured by the extent to which these learning outcomes are achieved, evaluated through formative and summative methods such as progress reports, applied activities, and other assessment forms suited to each subject. This rigorous evaluation pathway tracks development via applied activities and regular progress reports,

[2] The term "programmes" concerns the external quality evaluation for the study programmes contained in a master/doctoral domain. The term "programme" shall be used hereinafter.

requiring successful milestone presentations before a guidance committee prior to the final public defense of the doctoral thesis, which serves as the ultimate certification for the university degree. Backed by an approved curriculum, appropriate research infrastructure, and highly qualified academic staff including accredited doctoral supervisors, this integrated framework successfully delivers an adequate qualification in full compliance with national and European standards for quality in higher education.

✓ Recommendations

No recommendations.

The indicator is: fulfilled

Criterion B.2. Alignment of the curriculum with the qualification

Standard S.B.2.1. Alignment with the qualification level and the intended competences In the curriculum design and development process, the organisational component seeks to ensure the qualification level, as well as correlation with the envisaged occupations.	
Indicator I.P.B.2.1.2	The expected learning outcomes are correlated with the competences required by those occupations, according to the occupational standards and/or the European Skills, Competences and Occupations (ESCO).

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The Internal Evaluation Report states that the doctoral study plan for the Physics domain was developed in accordance with national legislation and the internal procedures of the University of Oradea, including the Operational Procedure for the Development and Approval of Study Plans (SEAQ-PO-PrMA-01). The study plan was approved by Senate Decision no. 17/30.01.2025. The curriculum structure includes: professional and transversal competences; advanced university study disciplines such as Scientific Research Methodology and Ethics and Academic Integrity; scientific research activities and progress reports; evaluation and public defence of the doctoral thesis. The expected learning outcomes are linked to advanced research competences and interdisciplinary scientific activities in areas such as: medical physics; dosimetry and radiobiology; artificial intelligence applications in radiotherapy; quantum systems; computational and numerical modelling. The report also specifies that the doctoral field aims to develop advanced theoretical and applied knowledge, research skills, innovation capacity, and international scientific visibility.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysis of the documentation confirms that the curriculum of the doctoral field Physics is aligned with the qualification level corresponding to doctoral studies and with the competences required by research-oriented and highly specialized occupations included in the ESCO framework and academic research profiles. The curriculum combines transversal competences, research methodology, ethics, and specialized scientific research activities, supporting the development of advanced competences specific to occupations in higher education, scientific research, computational modelling, medical physics, and interdisciplinary technological applications. Concrete examples identified in the report include: research competences in medical physics and radiobiology; computational and numerical modelling skills; artificial intelligence applications in healthcare and radiation therapy; theoretical and applied research competences in quantum systems and mesoscopic transport. The structure of the doctoral programme, including scientific progress reports, research activities, and thesis defence procedures, supports the acquisition and evaluation of learning outcomes consistent with level 8 qualifications within the European Qualifications Framework.

✓ Recommendations

The inclusion of explicit references to ESCO competences and occupational standards within curriculum documentation and course descriptions could improve the visibility of the correlation between learning outcomes and labour market requirements. The development of interdisciplinary optional modules focused on emerging technologies, advanced data analysis, and research commercialization may strengthen the employability profile of doctoral graduates. Additional institutional mechanisms for monitoring graduate career trajectories and labour market integration could support future curriculum updates and competence alignment.

The indicator is: fulfilled

Criterion B.3. Student-centred learning, teaching and evaluation

Standard S.B.3.1 Principles The organisational component implements the principles of student-centred learning.	
Indicator I.P.B.3.1.1	The organisational component ensures implementation of the student-centred learning in the curriculum and through the teaching strategies used in the learning and teaching activities and experiences.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The Internal Evaluation Report states that the University of Oradea promotes student-centred learning as part of its institutional strategy focused on quality education, academic development, and social inclusion. The university explicitly supports non-discriminatory access to education, student participation in academic governance, and learning processes centred on expected learning outcomes and student needs. The doctoral study plan for the Physics domain includes advanced research activities, individualized scientific supervision, research progress reports, and public thesis evaluation, allowing doctoral students to develop independent research competences and personalized scientific trajectories. The curriculum integrates transversal competences, scientific research methodology, ethics and academic integrity, and interdisciplinary research activities in fields such as medical physics, radiobiology, artificial intelligence, and quantum systems. The report also mentions that students are represented within the University Senate and institutional committees, contributing to participatory governance and academic decision-making processes.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysis of the documentation confirms that the doctoral field Physics applies student-centred learning principles through individualized doctoral supervision, flexible research activities, interdisciplinary scientific opportunities, and active student involvement in academic processes. The structure of the doctoral programme supports personalized learning experiences and independent scientific development through: individualized research topics; continuous interaction with doctoral supervisors; research progress evaluations; participation in interdisciplinary research projects and laboratories. Concrete examples include: doctoral research activities in emerging scientific fields such as medical physics and artificial intelligence; the integration of doctoral students into research centres and laboratories; student participation in institutional governance structures and academic quality assurance mechanisms. The institutional strategic objectives related to inclusion, academic support, digitalization, and research-oriented education further support the implementation of student-centred learning principles.

✓ Recommendations

The development of formal mentoring and academic counselling mechanisms dedicated specifically to doctoral students could further strengthen individualized academic support. Additional opportunities for

interdisciplinary mobility, transferable skills training, and international doctoral workshops may enhance student-centred learning experiences and research visibility. The implementation of structured feedback collection mechanisms regarding doctoral supervision, research support services, and learning experiences could support evidence-based improvement of doctoral education processes.

The indicator is: fulfilled

Indicator I.P. B.3.1.2	The organisational component ensures opportunities for students to participate in academic mobility programmes organised in person and/or virtually.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The University of Oradea promotes internationalization and academic cooperation as strategic institutional objectives. The Internal Evaluation Report specifies that the university maintains international relations with 620 institutions from 111 countries. The institutional strategic objectives include increasing international visibility, strengthening academic collaborations, and supporting internationalization within doctoral education and research activities. The doctoral field Physics is integrated into a research environment focused on interdisciplinary and internationally relevant research topics such as medical physics, quantum systems, radiobiology, and artificial intelligence applications.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysis of the documentation confirms that the University of Oradea provides an institutional framework that supports student participation in academic mobility programmes through international partnerships, digital infrastructure, and research collaboration opportunities. The extensive network of international institutional partnerships and the strategic orientation toward internationalization create favourable conditions for doctoral students to participate in academic exchanges, collaborative research activities, conferences, and virtual academic cooperation. Concrete examples identified in the documentation include: institutional collaborations with universities and organizations from 111 countries; research activities integrated into internationally relevant scientific domains; the university's strategic support for digitalization and modern technology-based educational activities. Although the doctoral field Physics is newly established and no doctoral student mobility data are yet available, the institutional infrastructure and internationalization strategy demonstrate the capacity to support both physical and virtual mobility opportunities.

✓ Aspects that constitute best practice examples

A good practice identified during the evaluation is the university's broad international partnership network involving 620 institutions from 111 countries, which provides significant potential for academic mobility and international research cooperation. Another example of best practice is the integration of doctoral research activities into internationally relevant and interdisciplinary scientific fields, facilitating participation in international scientific communities and collaborative research environments.

✓ Recommendations

The development of dedicated mobility agreements and international partnerships specifically targeting the doctoral field Physics could strengthen international doctoral training opportunities. The implementation of structured support mechanisms for doctoral student participation in international conferences, research internships, and virtual exchange programmes may increase the international visibility of doctoral activities.

The indicator is: fulfilled

Standard S.B.3.2. Fairness
The organisational component provides fair opportunities for students.

Indicator I.P.B.3.2.1	The organisational component provides fair opportunities for students, in line with their potential and aspirations, taking into account the diversity of learning styles and abilities

The doctoral program guarantees fair, equitable, and inclusive opportunities for all students by structurally embedding flexibility, personalized mentorship, and transparent resource allocation into its organizational framework. The program actively accommodates the diverse backgrounds, learning styles, and abilities of its doctoral students through the following mechanisms:

- Doctoral students are fairly represented in the governing bodies, ensuring their feedback, and structural needs are actively integrated into the continuous improvement of the program's organizational framework.
- The organizational structure of the newly accredited doctoral program in Physics, is designed to fully implement institutional admission procedures that strictly align with national regulations and the internal methodology approved by the University Senate. Although no formal admission session has been held yet for this newly established field, the organizational framework is prepared to execute candidate selections governed by the core institutional principles of transparency, fairness, and objectivity to guarantee open, competitive, and non-discriminatory access to doctoral-level education.
- The admission framework inherently observes the principles of equity and equal opportunities by incorporating explicit support measures for vulnerable groups and individuals at social or educational risk. This includes tailored accommodations and specialized access procedures designed to safeguard the participation of candidates with special educational needs and disabilities. Comprehensive information regarding these available support services and reasonable testing adjustments will be communicated transparently throughout the call for applications, ensuring an inclusive, and fair enrollment environment for all participating students.

✓ Recommendations

- The organizational component is encouraged to provide continuous administrative, psychological, and logistical support systems for students with diverse physical or learning abilities. Evaluation schedules, thesis defense formats, and laboratory workspaces should be adapted when possible to reduce any structural discrimination.

The indicator is: fulfilled

Criterion B.4. Accessibility and efficiency of the resources and support services, adequate for learning

Standard S.B.4.1. Access to resources and services The organisational component provides access to adequate resources and support services, according to the needs of the students.	
Indicator I.P.B.4.1.1	The organisational component provides students, including those with special educational needs/disabilities, with access to resources and services designed to support the learning process, adequate for the individual learning needs, the study domain, the study cycle, and the form of organisation of the study programme.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The University of Oradea provides doctoral students with access to educational, research, administrative, and digital resources appropriate to the doctoral field Physics and to the specific requirements of doctoral studies. The Internal Evaluation Report specifies that IOSUD and the Faculty of Informatics and Sciences provide dedicated spaces for educational, research, and administrative activities, as well as services supporting students and doctoral students, including persons with disabilities. The doctoral field Physics benefits from the infrastructure of the Research Centre in Applied Natural Sciences and associated laboratories equipped for computational modelling, simulations, scientific research, and data processing

activities. The university also provides: library services; digital communication and administrative platforms; research infrastructure; access to institutional regulations and online academic information. The Institutional Strategic Development Plan promotes inclusion, equal access to education, digitalization, and student-centred learning processes adapted to the needs of learners. The Internal Evaluation Report further specifies that the organisational component ensures access for students, including those with special educational needs/disabilities, to adequate learning resources and support services.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysis of the documentation confirms that the University of Oradea provides doctoral students with access to adequate educational, research, and support resources adapted to the requirements of the doctoral field Physics and to the characteristics of doctoral education. The available infrastructure supports advanced scientific research and individualized learning activities through specialized laboratories, digital research tools, library access, and administrative support services. Concrete examples identified in the report include: access to computational modelling and simulation laboratories; digital infrastructure supporting scientific research and data processing; institutional online access to regulations, procedures, and academic information; institutional commitment to inclusion and support for students with disabilities and special educational needs. The university's strategic orientation toward digitalization, Smart Campus development, and student-centred education contributes to improving accessibility and efficiency of learning support services. Based on the analysed documents, the performance indicator is considered fulfilled.

✓ Recommendations

It is not the case.

The indicator is: fulfilled

Criterion B.5. Learning outcomes

Standard S.B.5.1. Definition and evaluation Learning outcomes are adequately defined and evaluated.	
Indicator I.P.B.5.1.1	Learning outcomes are adequately described, and they support understanding of the students' and teachers' expectations regarding the content of the subject matters in the curriculum.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The Internal Evaluation Report specifies that the doctoral study plan for the Physics domain includes clearly defined professional and transversal competences, advanced research methodology, ethics and academic integrity, scientific progress reports, and doctoral thesis evaluation procedures. The study plan was approved by Senate Decision no. 17/30.01.2025. The expected learning outcomes are correlated with advanced research activities in medical physics, radiobiology, artificial intelligence applications, quantum systems, and computational modelling.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The learning outcomes are adequately described through the structure of the doctoral curriculum and through the research activities proposed within the doctoral field. The curriculum clarifies the expectations related to scientific research, ethics, transversal competences, and doctoral thesis development. Concrete examples include the development of competences in computational modelling, radiobiological simulations, and theoretical analysis of quantum systems, directly linked to the doctoral research topics.

✓ Recommendations

The inclusion of more explicit descriptions of learning outcomes in course descriptions and doctoral research guidelines could improve transparency for doctoral students and supervisors. The development of standardized outcome-mapping tools correlated with ESCO competences and doctoral research objectives may strengthen curriculum coherence and evaluation consistency.

The indicator is: fulfilled

Indicator I.P.B.5.1.2	Achievement of the learning outcomes is checked in ongoing examinations and study completion exams.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The Internal Evaluation Report specifies that the doctoral study plan includes continuous assessment through three scientific progress reports, evaluation by the Advisory Committee, and the public defence of the doctoral thesis before the Specialized Committee. The curriculum also includes evaluation activities related to Scientific Research Methodology, Ethics and Academic Integrity, and the presentation of the scientific research project.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The documentation confirms that learning outcomes are evaluated progressively throughout the doctoral programme through ongoing research assessments and final thesis evaluation procedures. The use of scientific progress reports allows monitoring of the doctoral students' research development and achievement of expected competences. Concrete examples include the evaluation of research methodology competences, scientific publications and reports, and the final public defence of the doctoral thesis.

✓ Recommendations

The development of detailed evaluation rubrics for scientific progress reports and doctoral thesis assessment could improve transparency and consistency of evaluation procedures. The implementation of formal feedback mechanisms following interim evaluations may support doctoral students in monitoring their progress and research development.

The indicator is: fulfilled

Criterion B.7. Procedures and practices regarding the admission competition, the journey, recognition and equivalence of studies, and result certification

Standard S.B.7.1. Admission The admission procedures and principles ensure access to higher education.	
Indicator I.P.B.7.1.1	The organisational component applies the admission procedures.

Admission to the upcoming doctoral study program in Physics is carried out based on a rigorous and transparent methodology developed by IOSUD-UO and approved by the University Senate, in accordance with national legal regulations and ARACIS standards. Although no admission session has been held yet for this newly accredited field, the selection process will strictly adhere to the established institutional procedures and principles of transparency, fairness, and objectivity.The admission procedure includes: Organizing a public admission competition, announced in advance through institutional and public information channels, following the core methodology adopted by the Decision of the University Senate no. 12 of 28.03.2024; Enrollment of candidates holding a master's degree or equivalent, with specific dedicated

pathways ensuring open and non-discriminatory access. This includes dedicated regulations for Romanians from everywhere (adopted by University Senate Decision no. 39 of 28.02.2024) and foreign citizens (adopted by University Senate Decision no. 40 of 28.03.2024); An interview and presentation of a scientific research proposal, evaluated by an examination panel composed of PhD supervisors and domain experts to ensure an objective assessment of the candidate's scientific potential. Selecting candidates based on merit, ensuring clear, non-discriminatory, and objective selection according to scientific performance, the quality of the proposed project, and demonstrated aptitudes. The admission methodologies are published and fully accessible to all interested parties on the IOSUD-UO websites (including the general framework at https://www.uoradea.ro/display32710 and specific Doctoral School methodologies at https://doctorat.uoradea.ro/ro/admitere/metodologie-admitere-doctorat-iosud-uo). The criteria, procedures, and timelines for the Physics domain will be published in due time prior to the launch of the initial admission session.

✓ Recommendations

It is not the case.

The indicator is: fulfilled

Indicator I.P.B.7.1.2	Admission in higher education study programmes complies with the principles of fairness and equal opportunities, and with the establishing of support measures to ensure access of vulnerable groups at social and educational risk, including candidates with special educational needs and/or disabilities.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The Internal Evaluation Report states that the University of Oradea promotes non-discriminatory access to education, social inclusion, and equal opportunities as part of its institutional mission and strategic objectives. The report also specifies that the organisational component ensures access for students, including those with special educational needs/disabilities, to educational resources and support services adapted to their learning needs. Admission and academic activity are regulated through institutional regulations and procedures aligned with Law no. 199/2023 and internal university regulations.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysed documentation confirms that the admission framework for the doctoral field Physics is based on principles of transparency, fairness, equal opportunities, and institutional inclusion policies. The university explicitly promotes non-discriminatory access and support measures for students with special educational needs and vulnerable groups. Concrete examples include institutional regulations ensuring equal access to educational services, availability of support resources for students with disabilities, and student-centred policies integrated into the university strategy.

✓ Recommendations

The development of dedicated support procedures and accessible admission information specifically tailored for doctoral candidates with disabilities could improve institutional inclusiveness. The implementation of periodic monitoring mechanisms regarding participation of vulnerable groups in doctoral admission processes may support evidence-based improvement of equal opportunity policies.

The indicator is: fulfilled

Standard S.B.7.2. Academic journey of students
The organisational component carries out actions supporting the students' academic journey.

Indicator I.P.B.7.2.1	The organisational component applies the regulations concerning the students' professional activity.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The Internal Evaluation Report states that the academic activity of doctoral students is regulated through the Regulation on Student Academic Activity Based on the European Credit Transfer System and through the internal regulations governing doctoral studies within IOSUD – University of Oradea. The doctoral study plan for the Physics domain includes structured academic and research activities such as scientific research methodology, ethics and academic integrity, scientific progress reports, thesis evaluation, and public defence procedures. The university also ensures student participation in governance structures, including the Senate and institutional committees.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysed documentation confirms that the organisational component applies institutional regulations governing doctoral students' academic activity, research progression, evaluation, and thesis completion. The doctoral programme includes clearly structured stages for monitoring academic and scientific progress. Concrete examples include the use of scientific progress reports, research project evaluations, advisory committee assessments, and public doctoral thesis defence procedures.

Recommendations

The implementation of digital monitoring tools dedicated to doctoral students' academic progress and research milestones could improve traceability and academic support. The development of formal academic counselling and career guidance activities specifically adapted to doctoral students may strengthen support for academic and professional development.

The indicator is: fulfilled

Criterion B.8. Internationalisation process

Standard S.B.8.1. Internationalisation Improving the quality of education and research through internationalisation actions.	
Indicator I.P.B.8.1.1	The organisational component carries out international cooperation actions supporting mobility of the members of its own community and collaboration in academic and research activities.

The University of Oradea (UO) and its Doctoral School of Engineering Sciences have firmly integrated internationalisation as a strategic mechanism for continuous quality enhancement in advanced education and scientific research. For the newly established doctoral field of Physics, internationalisation is embedded directly into its core mission and strategic development objectives to ensure competitive, globally aligned doctoral training. The internal regulations of the Doctoral School explicitly grant doctoral students the right to benefit from national or international mobilities. Furthermore, students receive institutional support to participate in international scientific conferences, congresses, workshops, and seminars using available doctoral grants or other funding sources. Candidates are also permitted to conduct their doctoral studies and research activities in an internationally spoken language with the agreement of their scientific supervisor.

The internationalisation actions of the newly established doctoral field of Physics are anchored by the global profile and scientific visibility of its two tenured doctoral supervisors. They exhibit high scientific impact through extensive research published in prestigious international journals, service as a journal editors or scientific committee member for international conferences, notable leadership presence within global networks or membership in different international commissions (such as ICRP).

Additionally, being a member of the EU Green Alliance is an opportunity to establish new partnerships and collaboration protocols with other HEIs from the alliance, providing a strong foundation for possible future international joint doctorates. This global connectivity creates immediate opportunities for upcoming doctoral candidates to engage in cross-border scientific networks and co-supervised doctorate tracks.

✓ Recommendations

- Increase internationalisation through co-tutelle programs with foreign universities.
- Support and stimulate the participation of PhD students in international conferences and research internships.
- Develop specific advanced disciplines or modules in co-tutorship with international lecturers or teaching staff from partner universities
- Actively seek to establish partnerships and collaboration protocols with other HEIs from the EU Green European Alliance to create opportunities for upcoming doctoral candidates to engage in cross-border scientific networks and co-supervised doctorate tracks.

The indicator is: fulfilled.

Criterion B.9. Scientific research results

Standard S.B.9.1 Scientific research in the education process Scientific research activities support students in achieving the learning outcomes.	
Indicator I.P.B.9.1.1	Learning based on scientific investigation and research results support and are capitalised upon in achieving the learning outcomes envisaged through the study programme.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The Internal Evaluation Report states that the doctoral field Physics is strongly research-oriented and integrated into the activities of the Research Centre in Applied Natural Sciences (SNA) and its affiliated laboratories. The proposed doctoral research areas include medical physics, radiobiology, artificial intelligence applications in radiotherapy, quantum systems, computational modelling, and mesoscopic transport phenomena. The doctoral study plan includes scientific research activities, scientific progress reports, and doctoral thesis development as core components of the learning process.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysed documentation confirms that scientific research activities are directly integrated into the doctoral training process and support the achievement of the intended learning outcomes. Doctoral students are involved in interdisciplinary research activities using computational modelling, simulations, numerical analysis, and advanced scientific investigation methods. Concrete examples include research on radiobiological modelling, artificial intelligence in tumour response prediction, quantum system dynamics, and numerical simulations performed within dedicated research laboratories.

✓ Recommendations

The development of structured mechanisms for integrating doctoral students into international research projects and collaborative publications could enhance research visibility and scientific impact. Additional opportunities for doctoral students to participate in interdisciplinary research teams, international conferences, and advanced scientific training activities may strengthen research-based learning outcomes.

The indicator is: fulfilled

Standard S.B.9.2. Scientific research pertaining to the objectives of the study programme The organisational component carries out scientific research activities aligned with the objectives of the evaluated study programme.	
Indicator I.P.B.9.2.1	The results of scientific research are visible at national and international level in that scientific domain, and capitalised upon in an adequate manner.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The scientific research directions include medical physics, dosimetry of ionizing radiation therapies, artificial intelligence applications in radiotherapy, quantum systems, radiobiology, computational modelling, and mesoscopic transport phenomena. The University of Oradea also reports research funding of 97,768,484 RON obtained through research activities and externally funded projects during 2020–2024.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysed documentation confirms that the scientific research activities carried out within the doctoral field Physics are aligned with the objectives of the doctoral programme and are visible through interdisciplinary and internationally relevant research topics. Concrete examples include research activities in artificial intelligence applied to tumour response prediction, Monte Carlo simulations in radiotherapy, quantum system dynamics, and computational modelling performed within dedicated research laboratories. The affiliation of the research centre to the EERTIS platform and the involvement of doctoral supervisors in advanced research activities support national and international visibility of the scientific results.

✓ Recommendations

It is not the case.

The indicator is: fulfilled

DOMAIN C. Quality management

Criterion C.1. Quality assurance strategies and procedures, including in the field of academic ethics and conduct, which involve students, employers and other stakeholders and are applied in a consistent, transparent manner

Standard S.C.1.1. Application Adequately implemented strategic directions, actions, and procedures	
Indicator I.P.C.1.1.1	The organisational component consistently carries out actions and applies procedures, proving their impact on improving the quality of education at the level of the study programme

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The analysis of the Internal Evaluation Report (REI) and the information obtained during the evaluation visit confirms that the University of Oradea has established and consistently applies quality assurance strategies and procedures within the Doctoral School of Engineering Sciences and the proposed doctoral field Physics. The institutional quality assurance framework is integrated into the overall strategic management of the university and is supported by dedicated quality assurance structures at university, faculty, department and doctoral school levels. During the meetings with the representatives of the quality assurance structures, the evaluation panel confirmed that the organisational component applies quality assurance procedures consistently and involves relevant stakeholders in their implementation. The university has established a Centre for Quality Management composed of academic staff and students with

experience in ARACIS evaluation activities, responsible for monitoring progress reports, analysing the implementation of recommendations and supporting continuous improvement processes. The evaluation also confirmed the existence of an internal body of auditors composed of academic staff members involved in internal quality audits and monitoring activities. At faculty and departmental levels, dedicated quality assurance committees operate continuously, with approximately 120 persons involved in quality assurance activities throughout the institution. Student feedback mechanisms are implemented through anonymous online evaluations conducted every semester, and the results are analysed within the doctoral school structures and CSUD. The institutional procedures also include consultation with employers and external stakeholders. During the meetings with employers and representatives of the socio-economic environment, the evaluation panel confirmed the existence of collaboration mechanisms between the university and employers from the medical, educational and industrial sectors. Representatives from the Bihor School Inspectorate, Bihor County Emergency Hospital and industrial partners confirmed both the relevance of the doctoral field Physics and the usefulness of doctoral studies for professional development and research-based innovation.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysis of the documentation and of the information obtained during the evaluation visit confirms that the University of Oradea adequately implements quality assurance strategies and procedures at the level of the Doctoral School of Engineering Sciences and the doctoral field Physics. The institutional quality assurance system is functional, coherent and integrated within the university management structures, demonstrating a continuous concern for monitoring and improving the quality of educational and research activities. The evaluation panel confirmed that quality assurance procedures are not only formally established but are consistently applied in practice. The existence of specialised quality assurance structures, internal auditors, periodic evaluations and monitoring mechanisms demonstrates institutional maturity and sustainability in the implementation of quality management processes. The active involvement of students, academic staff, employers and external stakeholders in evaluation and feedback activities contributes to transparency and continuous improvement.

Recommendations:

- Expand the benchmarking with other HEIs at international level

The indicator is fulfilled.

Standard S.C.1.2. Stakeholder engagement The HEI proves that it engages the stakeholders who have relevant activity in applying the procedures.	
Indicator I.P.C.1.2.1	The opinions of the members of its own community and of other stakeholders are taken into account in the procedure implementation process.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The analysis of the Internal Evaluation Report and the information obtained during the evaluation visit confirm that the University of Oradea involves members of the academic community and external stakeholders in the implementation of quality assurance procedures and institutional decision-making processes. During the meetings with representatives of the quality assurance structures, the evaluation panel confirmed that students, academic staff and external stakeholders participate actively in quality assurance activities and consultation processes. Student evaluations of teaching staff are carried out periodically through anonymous online forms and the results are analysed at the level of the doctoral school and CSUD. The evaluation visit also confirmed the participation of faculty members in IOSUD management structures and quality assurance bodies. Employers and representatives of the socio-economic environment were involved in consultations regarding the relevance and development perspectives of the doctoral field Physics. Representatives from educational institutions, hospitals and private companies

expressed their support for the doctoral programme and confirmed the relevance of doctoral studies for professional and institutional development.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The analysis of the documentation and discussions held during the evaluation visit confirms that the organisational component adequately involves stakeholders in the implementation of institutional procedures and quality assurance activities. Their participation contributes to transparency, relevance and continuous improvement within the doctoral field Physics. The evaluation panel confirmed that stakeholder feedback is collected through formal mechanisms and considered within institutional decision-making and quality assurance processes. The active participation of external stakeholders and employers additionally supports the alignment of the doctoral field with labour market expectations and research needs.

Recommendations

- strengthen stakeholder participation by expanding the involvement of international partners and alumni in periodic evaluation and consultation activities related to the doctoral field Physics.

The indicator is fulfilled.

Criterion C.2. Functionality of education quality assurance structures, including in the field of academic ethics and conduct, according to the law

Standard S.C.2.2. Operation Quality assurance and academic ethics and conduct organisational structures adequately perform their specific role and functions.	
Indicator I.P.C.2.2.2.	The academic ethics commission operates based on the regulation approved by the University Senate, and performs actions that are compliant with the law, independently from any other structure or person in the higher education institution.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The academic ethics commission of the University of Oradea operates in accordance with the regulations approved by the University Senate and performs its activities independently, in compliance with the legal provisions in force.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

During the site visit, the evaluation team confirmed that the Ethics Commission is composed of academic staff and student representatives, with equal voting rights and active participation in the commission's activities. The commission operates based on clearly established procedures and publicly available documents, including the Code of Ethics, commission structure, decisions and activity reports published on the university website. The evaluators also observed the existence of a dedicated subcommittee for research ethics related to studies involving human subjects, animals and plants. Meetings of the Ethics Commission are organized whenever notifications are received, as well as periodically for reporting and monitoring activities. The commission showed openness toward transparency, dissemination of ethical standards and student involvement in ethics-related activities, including initiatives for promoting the Code of Ethics within the academic community.

Recommendations

- develop a dedicated regulation on the ethical use of artificial intelligence in academic activities and provide students with guidance and training to encourage critical and responsible use of AI tools

The indicator is: fulfilled.

Criterion C.3. Procedures for the initiation, monitoring and periodic review of the study programmes

and domains and of the performed activities, involving students, employers and other stakeholders

Standard S.C.3.1. Procedures and implementation of procedures The HEI has procedures for initiating, monitoring, and periodically reviewing the study programmes and domains and the performed activities, and applies them systematically.	
Indicator I.P.C.3.1.1	The organisational component consistently applies the procedures, and proves their impact on quality assurance.

✓ Presentation of the state of facts, supported by documents and data (documents preferably included through links in the body of the IER)

The University of Oradea applies procedures for the initiation, monitoring and periodic review of doctoral programmes and activities within the institutional quality assurance framework. The doctoral field Physics was developed in line with institutional regulations, strategic objectives and stakeholder consultations. During the evaluation visit, the panel confirmed the existence of monitoring mechanisms such as internal evaluations, progress reports, recommendation analysis and student feedback procedures. Employers and external stakeholders are also involved in consultation activities.

✓ Analysis of the state of facts, in relation with the state of facts acknowledged from documents and considering the analysed performance indicator, to justify judgement on the extent to which the indicator was fulfilled

The organisational component consistently applies procedures for monitoring and reviewing doctoral activities, demonstrating their impact on quality assurance and continuous improvement.

The indicator is fulfilled.

Indicator I.P.C.3.1.2	Members of its own community and other stakeholders are involved in the procedure implementation process.

The University of Oradea involves members of the academic community and relevant external stakeholders in the implementation of procedures related to the initiation, monitoring, review and quality assurance of study programmes, including the doctoral field Physics. There are regulations related to consulting the teaching staff, doctoral supervisors, students, graduates, employers and representatives of the socio-economic environment in order to ensure the relevance and quality of academic and research activities. The implementation of these procedures is coordinated through the Doctoral School of Engineering Sciences, faculty management structures, the Department for Quality Assurance (DAC), the Administrative Council and the University Senate. During the site visit, the evaluation team observed good collaboration and communication between institutional representatives, academic staff and administrative personnel, as well as openness toward feedback and continuous improvement processes. The report also highlights the development of partnerships with clinics, hospitals, research institutions, NGOs, employers and international academic partners, but the doctoral school could benefit from more partnerships with the employment sector.

Recommendations:

- Increase the involvement of students and external stakeholders in consultation, feedback and quality assurance activities related to the continuous improvement of the doctoral programme.
- Develop more long-term partnerships that are directly related to the field of Physics.

The indicator is: fulfilled.

Criterion C.4. Procedures for the periodic evaluation of the quality of the activities of teaching staff, auxiliary teaching staff, and administrative staff

Standard S.C.4.1. Procedures Applying the methodologies and procedures contributes to improving the quality of the staff's activities.	
Indicator I.P.C.4.1.1	The organisational component analyses the results of the students' biannual evaluation of teachers.

The HEI applies institutional quality assurance procedures regarding the evaluation and monitoring of teaching activities, including the analysis of student feedback on academic performance and educational processes. The University of Oradea implements regular mechanisms for collecting and analysing data related to programme performance, student satisfaction and the effectiveness of teaching activities, within the framework coordinated by the Department for Quality Assurance (DAC) and the university management structures. Students and stakeholders are involved in quality assurance procedures.
The indicator is fulfilled.

Criterion C.5. Systematically updated databases on internal quality assurance

Standard S.C.5.1. Databases The HEI uses databases to support internal quality assurance activities.	
Indicator I.P.C.5.1.1	The organisational component systematically collects and analyses data required for the internal quality assurance process.

The relevant academic data is collected, updated and analysed within the internal quality assurance process. The research activity, institutional regulations and academic management is available and managed through the IOSUD platform (https://doctorat.uoradea.ro).
The indicator is fulfilled.

Criterion C.6. Transparency of information of public interest, including those regarding the study programmes and domains offered, and transparency regarding the related certificates, diplomas and qualifications

Standard S.C.6.1. Transparency The organisational component ensures transparency of information, as required by the law.	
Indicator I.P.C.6.1.1	The organisational component ensures publication and access to information of public interest regarding the evaluated study programme.

The information is mainly public and accessible through the university and IOSUD websites, where regulations, methodologies, study plans, institutional procedures, management structures and information related to doctoral studies are publicly available. The institutional representatives showed openness and provided all requested documents and clarifications.
The indicator is fulfilled.

Indicator I.P.C.6.1.2	The organisational component ensures transparent decision-making processes.

The organizational component ensures transparent decision-making processes through the public availability of institutional regulations, methodologies, operational procedures and management decisions at university and IOSUD level. During the site visit, the evaluation team observed open communication between management structures, doctoral supervisors and administrative staff, as well as transparent access to relevant information regarding the accreditation process and doctoral activity. Meetings with stakeholders confirmed the existence of collaborative and participatory decision-making practices within the doctoral school and the university.
Recommendations:

- increase stakeholder involvement in quality assurance and strategic planning activities

The indicator is fulfilled.

Criterion C.8. Participation in external evaluation processes, according to the law

Standard S.C.8.1. Compliance with the external evaluation obligation The HEI undergoes external quality evaluation as required by the law.

Indicator I.P.C.8.1.1	The organisational component carries out the procedures pertaining to the external quality evaluation process, aiming to organise the evaluated study programme as provided by the law.

The HEI undergoes the external quality evaluation process in accordance with the legal provisions in force and actively participates in all procedures required for the accreditation of the doctoral field Physics within IOSUD - University of Oradea.

The indicator is fulfilled.

IV. SWOT Analysis

Strengths: -The University of Oradea holds the prestigious "Highest Degree of Confidence" institutional qualification, which was reconfirmed in October 2024; The institution features an experienced and structured doctoral setup managing 20 doctoral fields across 7 doctoral schools; The program will operate under the established Doctoral School of Engineering Sciences; Functional management structures (CSUD, CSD, and SSUD) ensure a regulated framework and consistent application of internal and national doctoral legislation; The program launches with two tenured doctoral supervisors who meet the minimum national CNATDCU standards. They possess international visibility, mentoring expertise and have secured substantial funding in the immediate past; Doctoral students have immediate access to specialized, EERTIS-registered research laboratories; The program is backed by active institutional partnerships and cooperation protocols signed with regional medical institutions and clinics, which serve as essential practical environments for applied fields, such as Medical Physics.	INTERNAL FACTORS	**Weaknesses:** Being a new doctoral program, the program does not yet possess an active community of local physics doctoral students or historical evaluated program results. This baseline can initially generate structural reluctance among prospective candidates; The PhD supervision capacity is limited to two supervisors with very well defined research/activity fields. Attracting and developing more qualified supervisors requires significant institutional investment of different resources. The institution must increase its international program visibility in global rankings and attract more prospective international students. Despite existing structural digitization plans (e.g., DigitalUO), a complete digital transformation of educational and administrative processes is needed, highlighted by the absence of a dedicated online platform for doctoral studies management.
SWOT analysis		
Opportunities: The program can build directly upon the well-recognized, pre-existing structural reputation and operational maturity of the Doctoral School of Engineering Sciences;	EXTERNAL FACTORS	**Threats:** .The ongoing demographic decline and the resulting decrease in the number of high school and university graduates pose a persistent

The favorable geographical location of the University of Oradea serves as a strategic asset for cultivating cross-border academic alliances and widening student recruitment from the area; The labor market shows rising demand for specialized graduates in modern, interdisciplinary fields such as Medical Physics and Computational Modeling; Local medical institutes and clinical networks demand ongoing research, validating the program's long-term social and economic relevance, especially for the Medical Physics field; The university can actively utilize academic mobility and collaboration networks to attract prominent outside researchers, professors, and specialists via partnerships, mobilities and joint research; The proposed fields of research of the doctoral program are focus areas within physics research with high potential to obtain grants from national and european calls;		challenge for attracting domestic students. The program faces strong domestic and international competition from long-established academic centers of excellence already operating in the field of physics. The systemic brain drain of talented young researchers to well-funded entities abroad reduces the pool of possible doctoral candidates. Insufficient public funding for national doctoral research directly limits the program's structural growth and PhD candidate support. External disruptions like geopolitical instability and global climate change may threaten both institutional attractiveness and stability.

V. Extent to which the standards and performance indicators are fulfilled, and recommendations

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
DOMAIN A. Institutional capacity			
1.	I.P.A.1.1.1 For delivering the study programme/domain, the HEI has adequate organisational components and an adequate management system, which operate based on methodologies, regulations and procedures that are periodically reviewed as required by law.	Fulfilled	-
2.	I.P.A.1.2.1 The opinions of the faculty and department members, of the subsidiary or extension and of other stakeholders are considered in the process of adopting and revising methodologies, regulations and implementation procedures.	Fulfilled	-
3.	I.P.A.2.1.1 The HEI legally owns venues for the related education, research and	Fulfilled	The university is also encouraged to further expand access to international

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
	administrative processes, as well as for services for students, doctoral students and trainees, thus providing an enabling environment for living and studying, including for disabled persons. Optimal venues are also provided for activities of the staff. Such venues are adequately equipped.		research infrastructures and collaborative research networks in order to increase the visibility and competitiveness of doctoral research activities. Continuous investment in digital research resources, accessibility facilities for persons with disabilities, and interdisciplinary laboratory development is recommended to sustain the long-term development of the doctoral domain.
4.	I.P.A.2.2.1 The movable and immovable assets are properly maintained to ensure optimal conditions for studying, living and research, as well as for work.	Fulfilled	-
5.	I.P.A.3.1.1 The human resources of the organisational component are suitable to perform the activities pertaining to the evaluated study programme/domain. The teaching staff has the required qualifications and professional competences to teach the subject matters assigned to them in the job list.	Fulfilled	The university is encouraged to support the continuous professional development and international visibility of doctoral supervisors through participation in international research projects, mobility programmes, and scientific networks. Further strengthening interdisciplinary collaborations and attracting young researchers toward habilitation and doctoral supervision activities would contribute to the sustainable development of the doctoral field Physics.
6.	I.P.A.3.1.2 The HEI ensures professional and personal development for its staff.	Fulfilled	The university is encouraged to develop additional structured professional development programmes focused on emerging interdisciplinary areas, digital research competencies, and innovative doctoral supervision practices. Further support for young researchers and future habilitation candidates would contribute to the long-term sustainability and expansion of the doctoral supervision capacity in the field of Physics.

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
7.	**I.P.A.3.2.1** Recruitment procedures comply with the provisions of the law, and are established and carried out transparently.	Fulfilled	The development of structured institutional mechanisms for attracting international researchers and visiting professors in the field of Physics would strengthen the international dimension of the doctoral domain. Additional institutional measures supporting academic career development, mentorship for young researchers, and participation in international recruitment and research networks could further enhance the visibility and competitiveness of the doctoral field. The implementation of periodic institutional analyses regarding academic recruitment needs and research capacity development may support the sustainable expansion of the doctoral supervision team.
8.	**I.P.A.4.1.1** The organisational component uses IT tools in its own procedures, to improve access and provide good quality services for the members of its own community and the indirect beneficiaries of education.	Fulfilled	The expansion of integrated digital platforms dedicated to doctoral activity management, research monitoring, and academic reporting could further improve institutional efficiency and accessibility. Additional investments in high-performance computing infrastructure, specialized research software, and cybersecurity measures would strengthen the digital research environment of the doctoral field Physics. The development of structured digital training programmes for doctoral students and academic staff in areas such as artificial intelligence, research data management, and advanced computational methods may further enhance institutional digital competencies.
DOMAIN B. Educational efficacy			
9.	**I.P.B.1.1.1** The study programme is developed and structured according to the expected learning outcomes, and	Fulfilled	-

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
	organised based on transferable study credits. It includes all learning, teaching, practical training, research and evaluation experiences, which, together, lead to a higher education qualification.		
10.	I.P.B.2.1.2 The expected learning outcomes are correlated with the competences required by those occupations, according to the occupational standards and/or the European Skills, Competences and Occupations (ESCO).	Fulfilled	The inclusion of explicit references to ESCO competences and occupational standards within curriculum documentation and course descriptions could improve the visibility of the correlation between learning outcomes and labour market requirements. The development of interdisciplinary optional modules focused on emerging technologies, advanced data analysis, and research commercialization may strengthen the employability profile of doctoral graduates. Additional institutional mechanisms for monitoring graduate career trajectories and labour market integration could support future curriculum updates and competence alignment.
11.	I.P.B.3.1.1 The organisational component ensures implementation of the student-centred learning in the curriculum and through the teaching strategies used in the learning and teaching activities and experiences.	Fulfilled	The development of formal mentoring and academic counselling mechanisms dedicated specifically to doctoral students could further strengthen individualized academic support. Additional opportunities for interdisciplinary mobility, transferable skills training, and international doctoral workshops may enhance student-centred learning experiences and research visibility. The implementation of structured feedback collection mechanisms regarding doctoral supervision, research support services, and learning experiences could support evidence-based improvement of doctoral education processes.

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
12.	I.P.B.3.1.2 The organisational component ensures opportunities for students to participate in academic mobility programmes organised in person and/or virtually.	Fulfilled	The development of dedicated mobility agreements and international partnerships specifically targeting the doctoral field Physics could strengthen international doctoral training opportunities. The implementation of structured support mechanisms for doctoral student participation in international conferences, research internships, and virtual exchange programmes may increase the international visibility of doctoral activities.
13.	I.P.B.3.2.1 The organisational component provides fair opportunities for students, in line with their potential and aspirations, taking into account the diversity of learning styles and abilities.	Fulfilled	The organizational component is encouraged to provide continuous administrative, psychological, and logistical support systems for students with diverse physical or learning abilities. Evaluation schedules, thesis defense formats, and laboratory workspaces should be adapted when possible to reduce any structural discrimination.
14.	I.P.B.4.1.1 The organisational component provides students, including those with special educational needs/disabilities, with access to resources and services designed to support the learning process, adequate for the individual learning needs, the study domain, the study cycle, and the form of organisation of the study programme.	Fulfilled	-
15.	I.P.B.5.1.1 Learning outcomes are adequately described, and they support understanding of the students' and teachers' expectations regarding the content of the subject matters in the curriculum.	Fulfilled	The inclusion of more explicit descriptions of learning outcomes in course descriptions and doctoral research guidelines could improve transparency for doctoral students and supervisors. The development of standardized outcome-mapping tools correlated with ESCO competences and doctoral research objectives may strengthen curriculum coherence and evaluation consistency.

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
16.	**I.P.B.5.1.2** Achievement of the learning outcomes is checked in ongoing examinations and study completion exams.	Fulfilled	The development of detailed evaluation rubrics for scientific progress reports and doctoral thesis assessment could improve transparency and consistency of evaluation procedures. The implementation of formal feedback mechanisms following interim evaluations may support doctoral students in monitoring their progress and research development.
17.	**I.P.B.7.1.1** The organisational component applies the admission procedures.	Fulfilled	-
18.	**I.P.B.7.1.2** Admission in higher education study programmes complies with the principles of fairness and equal opportunities, and with the establishing of support measures to ensure access of vulnerable groups at social and educational risk, including candidates with special educational needs and/or disabilities.	Fulfilled	The development of dedicated support procedures and accessible admission information specifically tailored for doctoral candidates with disabilities could improve institutional inclusiveness. The implementation of periodic monitoring mechanisms regarding participation of vulnerable groups in doctoral admission processes may support evidence-based improvement of equal opportunity policies.
19.	**I.P.B.7.2.1** The organisational component applies the regulations concerning the students' professional activity.	Fulfilled	The implementation of digital monitoring tools dedicated to doctoral students' academic progress and research milestones could improve traceability and academic support. The development of formal academic counselling and career guidance activities specifically adapted to doctoral students may strengthen support for academic and professional development.
20.	**I.P.B.8.1.1** The organisational component carries out international cooperation actions supporting mobility of the members of its own community and collaboration in academic and research activities.	Fulfilled	Increase internationalisation through co-tutelle programs with foreign universities; Support and stimulate the participation of PhD students in international conferences and research internships; Develop specific advanced disciplines or modules in co-

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
			tutorship with international lecturers or teaching staff from partner universities; Actively seek to establish partnerships and collaboration protocols with other HEIs from the EU Green European Alliance to create opportunities for upcoming doctoral candidates to engage in cross-border scientific networks and co-supervised doctorate tracks.
21.	**I.P.B.9.1.1** Learning based on scientific investigation and research results support and are capitalised upon in achieving the learning outcomes envisaged through the study programme.	Fulfilled	The development of structured mechanisms for integrating doctoral students into international research projects and collaborative publications could enhance research visibility and scientific impact. Additional opportunities for doctoral students to participate in interdisciplinary research teams, international conferences, and advanced scientific training activities may strengthen research-based learning outcomes.
22.	**I.P.B.9.2.1** The results of scientific research are visible at national and international level in that scientific domain, and capitalised upon in an adequate manner.	Fulfilled	-
DOMAIN C. Quality management			
23.	**I.P.C.1.1.1** The organisational component consistently applies the procedures, and proves their impact on quality assurance.	Fulfilled	Expand the benchmarking with other HEIs at international level.
24.	**I.P.C.1.2.1** The opinions of the members of its own community and of other stakeholders are taken into account in the procedure implementation process.	Fulfilled	Strengthen stakeholder participation by expanding the involvement of international partners and alumni in periodic evaluation and consultation activities related to the doctoral field Physics.
25.	**I.P.C.2.2.2.** The academic ethics commission operates based on the regulation approved by the University Senate, and performs actions that are compliant with the law, independently from	Fulfilled	Develop a dedicated regulation on the ethical use of artificial intelligence in academic activities and provide students with guidance and training to

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
	any other structure or person in the higher education institution.		encourage critical and responsible use of AI tools.
26.	**I.P.C.3.1.1** The organisational component consistently applies the procedures, and proves their impact on quality assurance.	Fulfilled	-
27.	**I.P.C.3.1.2** Members of its own community and other stakeholders are involved in the procedure implementation process.	Fulfilled	Increase the involvement of students and external stakeholders in consultation, feedback and quality assurance activities related to the continuous improvement of the doctoral programme; Develop more long-term partnerships that are directly related to the field of Physics.
28.	**I.P.C.4.1.1** The organisational component analyses the results of the students' biannual evaluation of teachers.	Fulfilled	-
29.	**I.P.C.5.1.1** The organisational component systematically collects and analyses data required for the internal quality assurance process.	Fulfilled	-
30.	**I.P.C.6.1.1** The organisational component ensures publication and access to information of public interest regarding the evaluated study programme.	Fulfilled	-
31.	**I.P.C.6.1.2** The organisational component ensures transparent decision-making processes.	Fulfilled	increase stakeholder involvement in quality assurance and strategic planning activities.
32.	**I.P.C.8.1.1** The organisational component carries out the procedures pertaining to the external quality evaluation process, aiming to organise the evaluated study programme as provided by the law.	Fulfilled	-

Summary Table of Performance Indicators – Degree of Fulfillment

Evaluation Domain	Number of Performance Indicators		
	Fulfilled	Partially fulfilled	Unfulfilled
Domain A. Institutional capacity	8		
Domain B. Educational efficacy	14		
Domain C. Quality management	10		
Total			

Other general recommendations identified during the evaluation concern the strengthening of international research visibility, the expansion of interdisciplinary collaborations, and the development of structured

international partnerships dedicated to the doctoral field Physics. Additional measures may include the diversification of mobility opportunities, the development of advanced digital research infrastructure, and the implementation of dedicated support mechanisms for doctoral students' academic counselling, research monitoring, and career development. The evaluation panel also recommends increasing the integration of doctoral students into international research projects, collaborative scientific publications, and interdisciplinary research networks in order to enhance the international competitiveness of the doctoral domain.

A total number of 32 performance indicators were analysed during the external evaluation process. Out of these, 32 indicators were assessed as fulfilled, 0 indicators were assessed as partially fulfilled, and 0 indicators were assessed as unfulfilled. The evaluation results confirm that the doctoral study domain Physics within IOSUD – University of Oradea fulfils the ARACIS standards and performance indicators applicable to the accreditation procedure.

VI. Conclusions

The external evaluation process confirmed that the doctoral study domain Physics within IOSUD – University of Oradea benefits from an adequate institutional, academic, and research framework for the organisation and development of doctoral studies in accordance with ARACIS standards and national legislation. The doctoral field is integrated within the Doctoral School of Engineering Sciences and supported by qualified doctoral supervisors, modern research infrastructure, institutional quality assurance mechanisms, and interdisciplinary research facilities. Important strengths identified during the evaluation include the integration of the doctoral domain within the Research Centre in Applied Natural Sciences, the orientation toward internationally relevant research topics such as medical physics, radiobiology, quantum systems, artificial intelligence applications, and computational modelling, as well as the university's strategic commitment to digitalization, internationalization, and research excellence. The evaluation also highlighted the existence of transparent governance structures, functional quality assurance mechanisms, participatory stakeholder involvement, and adequate educational and research resources supporting doctoral activities. The institutional framework ensures compliance with the principles of student-centred learning, equal opportunities, academic ethics, and research integrity. The international visibility of the university, its extensive network of institutional partnerships, and the integration of advanced interdisciplinary research activities create favourable conditions for the future development of the doctoral field Physics.

Based on the analysis of the Internal Evaluation Report, the supporting documentation, and the findings of the on-site evaluation visit, the evaluation panel proposes the decision of Accreditation (AC) for the doctoral study domain Physics within IOSUD – University of Oradea. The proposed doctoral domain demonstrates compliance with the ARACIS standards, performance indicators, and national legal provisions applicable to doctoral studies and accreditation procedures.

The decision is substantiated by several important findings identified during the evaluation process: the existence of an adequate institutional and legal framework for doctoral studies; qualified doctoral supervisors holding habilitation certificates and fulfilling CNATDCU standards; adequate educational, administrative, and research infrastructure; integration within accredited interdisciplinary research centres and laboratories; implementation of transparent governance and quality assurance mechanisms; alignment of the doctoral curriculum with advanced scientific research objectives and internationally relevant research directions. The evaluation panel concluded that the doctoral study domain has the institutional capacity, academic resources, and quality assurance mechanisms necessary to ensure the delivery of doctoral education and scientific research at an appropriate quality level within the European Higher Education Area.

……

Following the completion of the accreditation[3]/maintaining accreditation procedure, the decision of the evaluation panel shall be one of the following:

a) accreditation* (AC)/maintaining accreditation (MAC);
b) conditional maintaining of the provisional authorisation to operate* (CMPA)/conditional maintaining of accreditation (CMAC);
c) non-accreditation* (NAC)/withdrawal of the accreditation (WAC).

VII. Annexes

Enclose the schedule of the on-site visit, the list of the documents reviewed, as well as any other documents that are relevant for the evaluation procedure, which are referred to in the EER and cannot be accessed through links.

[3] When the external quality evaluation for accreditation is performed with undergoing the procedure for obtaining a provisional authorisation to operate.