



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

Higher Education Institution/Education Provider Organization:	Technical University of Cluj-Napoca
Doctoral School:	Doctoral School UTCN
Doctoral Domain:	Environmental Engineering
The objective of the external evaluation:	Maintaining accreditation (MAC)



Members of the ARACIS Evaluation Panel

No.	Last Name and First Name	Team role	Signature
1.	MUNTEANU FLORENTINA-DANIELA	Expert evaluator	
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I. Introduction

This report is prepared for the ARACIS external evaluation procedure concerning the maintenance of accreditation for the doctoral study domain Environmental Engineering, organised within the Doctoral School of the Technical University of Cluj-Napoca (IOSUD-UTCN). The evaluation is a periodic external quality assurance procedure focused mainly on the period following the previous ARACIS evaluation, particularly 2021-2025. The visit took place on 22-23 June 2026. The external evaluation panel had the following composition: Florentina-Daniela Munteanu, Vincent Wertz and Ana-Maria Lupu. The report was drafted using the self-evaluation file, institutional regulations, doctoral school documents, evidence on supervisors, doctoral students and research activity, and discussions with relevant stakeholders.

The Technical University of Cluj-Napoca is a public, accredited higher education institution with legal personality, non-profit character, and public-interest status. It is part of the Romanian national higher education system. It was established in 1948 as the Institute of Mechanics, became the Polytechnic Institute of Cluj in 1953 and has operated under its current name since 1992. In 2012, UTCN merged with the North University of Baia Mare, which is now the North University Centre of Baia Mare. The university operates in Cluj-Napoca and Baia Mare and through extensions in Zalau, Satu Mare, Bistrita and Alba Iulia. Its mission is to develop value in people, processes and products through high-quality education and advanced scientific research.

UTCN is governed by the University Senate and the Administrative Council, while faculties and departments operate through their own councils. The university has a Code of Ethics and Academic Deontology, a University Ethics Committee, internal audit mechanisms, and a quality assurance system coordinated by the Commission for Evaluation and Quality Assurance and supported by the Department for Quality Assurance. UTCN offers bachelor's, master's and doctoral programmes, including 88 undergraduate programmes and 100 master's programmes, and functions as an Organising Institution of Doctoral University Studies. In the 2023 ARACIS institutional evaluation, UTCN obtained the rating "high degree of confidence".

Doctoral education at UTCN has evolved since 1953, when Professor Alexandru Domsa was granted the right to supervise doctoral students. Since 2005, doctoral studies have been organised as the third Bologna cycle, and in 2017, the former doctoral schools were reorganised into a single Doctoral School, coordinated by CSUD and supported by councils for doctoral programmes. The doctoral study domain of Environmental Engineering is part of this Doctoral School. It addresses the need for advanced research and highly qualified specialists in environmental protection, pollution prevention and control, resource efficiency, sustainability, and environmental management. UTCN obtained IOSUD status for this domain by Ministerial Order No. 5200 dated 21.09.2009. The domain has gradually consolidated its supervisory capacity, from three doctoral supervisors in 2010-2016 to six after 2017, and to seven as of October 2025. Following the previous periodic external evaluation, ARACIS Council Decision no. 75/30.09.2021 approved the maintenance of accreditation.

II. Methods used

For the external evaluation procedure for maintaining accreditation in the doctoral study domain of Environmental Engineering, the expert panel analysed the internal evaluation report prepared by the Technical University of Cluj-Napoca and IOSUD-UTCN, together with its annexes and supporting documents. The analysed documentation included institutional regulations and methodologies concerning doctoral studies, the organisation and functioning of IOSUD-UTCN and of the Doctoral School, quality assurance procedures, documents regarding ethics and academic integrity, information on doctoral supervisors, doctoral students, research activity, doctoral theses and the implementation of the recommendations formulated during the previous external evaluation. The panel also examined additional documents and clarifications made available before and during the visit, as necessary, to verify the

information in the self-evaluation file and assess compliance with the ARACIS standards and performance indicators.

The on-site visit took place on 22-23 June 2026 and was organised in accordance with the ARACIS methodology for the external evaluation of doctoral studies. The visit included discussions and debates with representatives of the university management, IOSUD-UTCN, the Council for Doctoral University Studies, the Doctoral School, the coordination structures of the doctoral study domain, doctoral supervisors, members of guidance and academic integrity committees, doctoral students, graduates, administrative staff involved in doctoral studies, quality assurance representatives and, where applicable, representatives of employers or external stakeholders. The panel also reviewed the educational and research infrastructure supporting the doctoral domain, including institutional and doctoral school facilities, administrative spaces, research and laboratory facilities, library and documentation resources, and the digital and administrative systems used to manage doctoral studies and quality assurance.

In addition to document analysis and direct meetings, the evaluation used several complementary methods, including the correlation of information from different sources, verification of evidence against the legal framework and ARACIS standards, analysis of the progress made since the previous evaluation, and discussions aimed at clarifying the functioning of the doctoral study domain in practice. Particular attention was paid to the sustainability of the domain, the adequacy of supervision capacity, the integration of doctoral research into the university's research structures, the mechanisms for monitoring doctoral students' progress, the implementation of ethics and academic integrity procedures, and the effectiveness of quality assurance processes. These methods allowed the panel to form a balanced view of the current state of the doctoral study domain in Environmental Engineering and its capacity to maintain accreditation.

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.
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For the delivery of the Environmental Engineering doctoral domain, IOSUD-UTCN has adequate organisational and managerial structures, with responsibilities assigned to CSUD, the Doctoral School, the domain coordination council and the IOSUD secretariat. The regulatory framework is publicly available on the IOSUD platform and includes national legislation, university decisions, and internal doctoral regulations, which are periodically reviewed in accordance with the law.

The doctoral domain benefits from an adequate and transparent organizational framework. However, the future action announced in the internal evaluation report regarding the integrated SD-IOSUD web interoperability system should be followed through.

Recommendations: Ensure that the planned integrated SD-IOSUD web interoperability system is implemented as scheduled, with clear responsibilities, milestones and periodic monitoring of progress.

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* and of other stakeholders are considered in the process of adopting and revising methodologies, regulations and implementation procedures.
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UTCN involves relevant stakeholders in the adoption and revision of methodologies, regulations and implementation procedures. Consultation takes place within IMADD department meetings, based on agendas and documents transmitted before the meetings. The minutes and attendance lists are forwarded and archived at faculty level, ensuring traceability of the consultation process.

At institutional level, cooperation with the socio-economic environment is supported through the CRMSE structure, specific procedures and the Consultative Committee. Stakeholder consultation is ensured through institutional and departmental mechanisms, including CRMSE. However, the related procedure appears administratively heavy and could be made more efficient.

Recommendations: Simplify the CRMSE consultation procedure, while preserving traceability and the meaningful involvement of employers and external stakeholders

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.
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UTCN provides adequate venues for education, research, administration and student services, including for doctoral students.

The Environmental Engineering doctoral domain benefits from specialised laboratories, research centres, and equipment within FIMM and IMADD that are aligned with its research topics.

Doctoral students have access to library resources, OPAC, ANELIS Plus databases, U.T.PRESS support, accommodation facilities, medical services, sports spaces and career counselling.

The university also ensures accessibility for persons with disabilities and applies procedures for laboratory maintenance, health and safety, and equipment use. The available educational, research and administrative infrastructure is adequate. The new education, research, conference and co-working space represents a positive development for doctoral students and staff.

Recommendations: Is not the case.

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.

* The faculty, department, subsidiary, extension - hereinafter "organisational components"

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.
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UTCN maintains its movable and immovable assets through documented procedures and digital administrative flows.

Maintenance and investment activities are managed through DMCDI procedures, JobRouter and other institutional platforms, ensuring traceability and formal approval.

In the Environmental Engineering domain, laboratories, research hubs and specialised equipment are managed at the faculty, department and research-group levels.

The infrastructure supports doctoral research through modern equipment, environmental analysis facilities, IoT technologies, sensors and experimental pilot lines.

Ongoing modernisation is supported through institutional investments, European projects and partnerships with the socio-economic environment.

Recommendations: 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.

The Environmental Engineering doctoral domain has qualified human resources for its educational and research activities. The doctoral supervisors hold legally recognised supervision rights or habilitation, and their qualifications are documented through ministerial orders, CNRED recognition or Senate decisions. Teaching activities in the doctoral training programme are delivered by experienced academic staff whose expertise aligns with the assigned disciplines.

The supervisors' scientific activity is documented through publications, projects, SIMAC+ records and CNATDCU self-evaluation files. Doctoral guidance is supported by academic integrity committees, including internal members and at least one member from outside IOSUD-UTCN. However, the doctoral field of Environmental Engineering has 3 tenured doctoral supervisors, one affiliated supervisor, and 3 retired supervisors.

Recommendations: It is recommended to support habilitation, continuous professional development, international mobility and the attraction of foreign experts in teaching, supervision and research.

The indicator is: fulfilled.

Indicator I.P.A.3.1.2	The HEI ensures professional and personal development for its staff.
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The analysed documents show that UTCN ensures professional and personal development for the staff involved in the Environmental Engineering doctoral domain.

Academic staff and doctoral supervisors benefit from research infrastructure, specialised laboratories, digital tools such as SIMAC+, and institutional support for monitoring scientific output and projects.

Continuous development is supported through workshops, technical sessions, language and communication training, research events and participation in national and international projects.

International development opportunities are provided through Erasmus+, EUt+, Fulbright and cooperation agreements managed through the International Relations Office.

Recommendations: Is not the case

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.
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UTCN recruitment procedures for teaching and research staff comply with the national legal framework. The recruitment rules are defined in the UTCN methodology for teaching and research competitions, which was updated in 2024 and is aligned with legal and ARACIS requirements.

Vacant positions, competition announcements and related information are published on the UTCN website and on the national jobs.edu.ro platform.

The process is supported by JobRouter, which allows electronic file submission, document upload and administrative traceability.

A public archive of previous competitions is also available, supporting retrospective verification and institutional transparency, but according to this, there is no evidence of a high degree of competition.

Recommendations: Beyond formal procedures, make sure that there is a real “competition” to recruit the best possible staff

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.
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IOSUD-UTCN uses IT tools to simplify administrative procedures and improve access to services.

The doctoral admission process has been migrated to SIS, allowing account creation, email validation, document upload, option selection and online fee payment.

The doctoral portal continues to provide information on thesis defence, procedures, forms, calendars and doctoral documents.

Other digital tools, such as JobRouter, SIMAC+ and CloudUT, support recruitment, scientific output monitoring, administrative workflows, computing and data storage.

Digitalisation is also supported through training activities and workshops on digital competences, artificial intelligence and emerging technologies.

Recommendations: Is not the case

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*

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.
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The Environmental Engineering doctoral programme is structured according to expected learning outcomes and transferable study credits.

The programme combines the Advanced University Training Programme and the Scientific Research Programme, ensuring learning, research, evaluation, and thesis development experiences.

The training component includes common and specialised disciplines, selected according to the doctoral topic and reflected in discipline sheets with defined competences.

The research component is personalised and monitored through progress reports, the supervisor and the guidance and academic integrity committee.

Recommendations: Is not the case

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).
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The analysed documents show that the expected learning outcomes of the Environmental Engineering doctoral programme are correlated with relevant occupational competences.

The programme develops advanced research, critical analysis, scientific methodology, academic writing and communication skills, aligned with level 8 of the National and European Qualifications Frameworks. These competences correspond to occupations such as environmental researcher, environmental protection specialist, environmental policy analyst, consultant or ecological project manager. The correlation is ensured through the PPUA curriculum, doctoral research activity, progress reports, supervisor feedback and guidance committee evaluations.

Doctoral students also acquire applied competences through research projects, experimental work, mobility, conferences and scientific publications.

Recommendations: Is not the case

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.

* 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.

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.
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The analysed documents show that the Environmental Engineering doctoral programme applies student-centred learning principles.

Doctoral students select their training disciplines together with their supervisor, based on the thesis topic, research profile, and individual development needs. The PPUA includes common disciplines, specialised courses and the research activity project, supporting personalised academic and research training. The guidance and academic integrity committee monitors research progress and provides feedback focused on improving the doctoral student's results. Discipline sheets define objectives, contents, competences and assessment methods.

Recommendations: Is not the case

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.
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The analysed documents show that doctoral students in Environmental Engineering have access to academic mobility opportunities. These opportunities are provided through Erasmus+, CEEPUS and bilateral agreements managed by UTCN, IOSUD, the Doctoral School and the International Relations Office. Mobility information, selection calendars and eligibility conditions are communicated through university and faculty webpages, as well as through dedicated announcements.

Doctoral students may participate in research stages, conferences and academic activities organised physically, virtually or in blended formats. The periods of mobility are academically recognised in accordance with institutional procedures and may be integrated into the doctoral research pathway. However, despite these possibilities the participation of the PhD students to academic mobility programmes is limited,

Recommendations: Encourage more internship and research-stage mobilities, not only conference participation, and increase staff mobility so that academic staff provide an example for doctoral students.

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 analysed documents show that UTCN provides fair opportunities for doctoral students, in line with their potential, aspirations and individual needs. The institutional framework ensures equal access to supervisors, guidance and academic integrity committees, feedback mechanisms, counselling, career guidance, administrative support, and resources for doctoral research and professional development. Doctoral students benefit from institutional support for mobility, conferences, summer schools, research stages, professional memberships and scientific publications. They also have access to research infrastructure, documentary resources, M365 accounts, ANELIS databases and specialised software. Accessibility measures are implemented for students with disabilities or special educational needs, including adapted access routes, ramps, lifts, tactile markings, dedicated sanitary facilities and individual support where necessary. In addition to these measures, the "Ghid de bune practici pentru abordarea studentului capabil diferit" provides a useful framework for promoting inclusive academic

practices and for guiding doctoral supervisors, teaching staff and administrative personnel in supporting students with diverse learning styles and abilities.

Recommendations: Commend the “Ghid de bune practici pentru abordarea studentului capabil diferit” and encourage its dissemination and practical use among doctoral supervisors, teaching staff and administrative personnel.

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.
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The analysed documents show that UTCN provides doctoral students with access to resources and services supporting learning and research. The Environmental Engineering domain benefits from specialised laboratories, research infrastructure, CloudUT, HPC resources, licensed software and international databases. Doctoral students also have access to library services, reading rooms, counselling, career guidance, international mobility support and administrative assistance.

Students with disabilities benefit from adapted infrastructure, including ramps, lifts, accessible routes, adapted sanitary facilities and, where needed, individual support measures. The available resources are appropriate to the doctoral cycle, the research profile of the domain and the individual learning needs of students, but there is not good evidence that highlights.

Recommendations: Improve the documentation and visibility of the evidence demonstrating doctoral students' effective access to learning, research and support resources. This may include periodically collecting student feedback on the use and adequacy of laboratories, digital resources, databases, counselling, mobility and accessibility services, and using the results to identify needs and document follow-up measures.

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.
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The analysed documents show that discipline sheets are available for the courses included in the Environmental Engineering doctoral training programme. These documents specify course objectives, content, targeted competences, knowledge, skills, responsibility, autonomy and assessment methods. Doctoral progress is also documented through confirmations of completed disciplines, the research project, the scientific research programme and periodic progress reports.

However, the discipline sheets appear to be designed mainly for the master's study cycle and are not sufficiently adapted to level 8 of the National Qualifications Framework / European Qualifications Framework, corresponding to doctoral studies. Consequently, the intended learning outcomes are not clearly formulated in relation to the specific requirements of doctoral education, such as advanced

research competences, originality, autonomy in scientific investigation, capacity to generate new knowledge and responsibility in managing complex research activities. Therefore, the correlation between the course content, the expected doctoral-level learning outcomes and the competences required for the doctoral cycle is not adequately demonstrated.

Recommendations: Revise the discipline sheets included in the doctoral training programme so that they are explicitly adapted to level 8 of the National Qualifications Framework / European Qualifications Framework. The revised documents should clearly define doctoral-level learning outcomes, align course content and competences with the specific requirements of doctoral research, and emphasise originality, scientific autonomy, advanced research methodology, critical thinking and the capacity to generate new knowledge.

The indicator is: partially fulfilled.

Indicator I.P.B.5.1.2	Achievement of the learning outcomes is checked in ongoing examinations and study completion exams.
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The analysed documents show that the achievement of learning outcomes is assessed through continuous and final evaluation mechanisms. Ongoing evaluation is carried out through the scientific research project and periodic research reports, which are assessed by the guidance committee and recorded in formal minutes submitted to IOSUD-UTCN. Final evaluation is ensured through the doctoral thesis defence, preceded by pre-defence, similarity checking and the required institutional procedures. However, since the discipline sheets appear to follow course-level requirements similar to those used in the master's cycle, the assessment methods do not clearly demonstrate how doctoral-level learning outcomes are evaluated. In particular, the evidence does not sufficiently show how advanced research competences, scientific autonomy, originality, critical thinking and the capacity to produce new knowledge are assessed in accordance with level 8 requirements.

Recommendations: Revise the assessment methods described in the doctoral discipline sheets so that they are explicitly aligned with level 8 learning outcomes. The revised assessment framework should clearly show how doctoral students' advanced research competences, scientific autonomy, originality, critical thinking and capacity to generate new knowledge are evaluated, including through transparent criteria or rubrics for research reports, guidance committee evaluations and pre-defence stages.

The indicator is: partially 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.

The analysed documents show that the Environmental Engineering doctoral domain applies the admission procedures established by UTCN and the Doctoral School.

Admission is organised annually through a competition, based on the approved admission regulations, IOSUD procedures, and the doctoral school framework.

The process includes online registration, file verification, assessment of previous studies and scientific activity, and an interview or oral examination.

The admission calendar, selection criteria, available places, results and appeals are publicly displayed on the IOSUD and faculty webpages.

The use of the institutional electronic platform supports transparency, traceability and equal access for candidates.

Recommendations: 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.
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The analysed documents show that doctoral admissions are organised in accordance with the principles of fairness, equal opportunity and non-discrimination. The UTCN doctoral admission regulation and institutional doctoral study regulations include provisions for the fair treatment of all candidates, while admission information — including conditions, calendar, fees, facilities and candidates' rights — is published on the IOSUD and UTCN webpages.

The university infrastructure is gradually being adapted to ensure accessibility for candidates and students with disabilities or special educational needs. However, candidates from vulnerable groups could benefit from more targeted support before and during admission.

Recommendations: Develop targeted support measures for candidates from vulnerable groups, including information campaigns, pre-admission counselling and an admission guide available in accessible formats.

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.

The analysed documents show that the Environmental Engineering doctoral domain applies the regulations concerning doctoral students' professional activity.

The domain coordination council and doctoral supervisors manage the academic pathway, including enrolment, research programmes, progress monitoring, interruptions, extensions and thesis defence. Doctoral students are informed about study requirements and have access to research infrastructure, M365 accounts, ANELIS resources, specialised software, mobility opportunities and scientific events. Progress is monitored through guidance committees, periodic reports and documented procedures, supporting the coherent development of doctoral studies.

Recommendations: Is not the case

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 analysed documents indicate that UTCN supports international cooperation in the field of Environmental Engineering doctoral research. Doctoral students and academic staff have access to Erasmus+, bilateral agreements, EUt+ mobility opportunities, summer and winter schools, and international research collaborations. The International Relations Office publishes calls, eligibility conditions, deadlines and financial support information for doctoral mobility, while UTCN's membership in the European University of Technology supports integrated mobility, joint courses, common research activities and cooperation with partner universities.

These opportunities contribute to research quality by providing access to external expertise, infrastructure, scientific networks and international dissemination. However, staff and students in Environmental Engineering do not appear to make sufficient use of them, and the number of foreign doctoral students should be increased.

Recommendations: Develop specific actions to increase staff and student mobility and to attract more foreign doctoral students, including better promotion of opportunities, mobility targets and support for international recruitment.

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.
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The analysed documents show that learning in the Environmental Engineering doctoral programme is grounded in scientific investigation and research findings.

The programme combines PPUA with the Scientific Research Pathway, ensuring that doctoral training is directly connected to the thesis topic and research objectives.

Doctoral students develop advanced research competencies through methodology, ethics, data processing, specialised disciplines and applied research activities.

Research results are capitalised through scientific publications, conference participation, research projects and, where applicable, technology transfer activities.

The research pathway is documented through the research project, research programme, semester reports and minutes of the guidance committee.

Recommendations: Is not the case.

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.
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The analysed documents show that research results in the Environmental Engineering doctoral domain are visible nationally and internationally.

The visibility is supported by publications by supervisors and doctoral students in WoS/ISI- and Scopus-indexed journals, conference proceedings, and book chapters.

In 2020-2024, the academic staff and doctoral students published 75 WoS/ISI articles and participated in 23 international conferences.

Doctoral graduates meet the minimum publication requirements, including ISI-indexed articles related to the thesis and participation in international conferences.

Research results are capitalised through doctoral theses, PPUA content updates, research projects, contracts with the socio-economic environment and, where applicable, patents.

Recommendations: 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
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The analysed documents show that IOSUD-UTCN applies quality assurance procedures consistently at the doctoral programme level. Quality management is supported by CEAC, DAC, faculty and doctoral school quality officers, CSUD coordination, institutional regulations, annual reporting, internal audit and SIMAC-based evaluations. These procedures cover self-evaluation, monitoring, revision of doctoral programmes, ethics, academic integrity, anti-plagiarism verification and student feedback mechanisms, while domain reports are analysed and approved by CSUD.

Although the procedures are formally in place and consistently applied, the evidence of their concrete impact on improving the quality of education is not sufficiently visible. Excessive bureaucratic formalisation may also reduce their effectiveness.

Recommendations: Ensure that quality assurance procedures lead to real quality improvement. Strengthen the culture of quality by moving from a mainly procedural approach to a quality-oriented institutional mentality, involving continuous training of teaching staff, doctoral-student education and integration of quality principles into doctoral research activities.

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.
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The analysed documents show that the opinions of doctoral students, academic staff, administrative staff and stakeholders are considered during the implementation of procedures. Doctoral students are represented in CSUD, the Doctoral School Council and domain-level structures, and provide feedback through questionnaires and self-evaluation tools. Academic and administrative staff contribute through activity reports, quality meetings, coordination councils and discussions on regulatory and procedural updates.

External stakeholders are consulted on the relevance of doctoral research topics and graduates' competences, including through cooperation projects and socio-economic partnerships. However, the real involvement of employers and external partners in advisory and evaluation processes should be strengthened.

Recommendations: Increase the real involvement of employers and other external partners in advisory structures and in the periodic evaluation of the doctoral programme.

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.
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The University Ethics Commission operates independently, in accordance with its own regulations approved by the UTCN Senate and the applicable legal framework. Its responsibilities include analysing ethics complaints, such as plagiarism, inappropriate conduct and discrimination, proposing appropriate measures, preparing annual reports and supporting the improvement of the institutional ethics framework.

At IOSUD level, ethical procedures are linked to anti-plagiarism checks, academic honesty declarations and verification of doctoral theses. However, the report should also address the emerging issue of artificial intelligence use by staff and doctoral students.

Recommendations: Develop clear recommendations on the use of AI by staff and doctoral students, including acceptable use, disclosure, authorship, academic integrity requirements and mechanisms for checking compliance.

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.
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UTCN applies procedures for initiating, monitoring and periodically reviewing doctoral programmes.

At the IOSUD level, these procedures are coordinated through CSUD, CEAC, DAC, quality officers and the Doctoral School structures. Monitoring is based on self-evaluation methodologies, progress reports, PPUA and PCS documentation, SIMAC data and feedback from doctoral students. The procedures are aligned with Law no. 199/2023, Ministerial Order no. 3020/2024, ARACIS standards and internal quality regulations. The results of evaluations are analysed within institutional structures and used for quality improvement measures at the doctoral school and domain levels.

Recommendations: Is not the case.

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.
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The analysed documents show that members of the academic community are involved in implementing quality procedures. Doctoral students, supervisors, domain coordination councils, CSUD and administrative staff participate in progress monitoring, self-evaluation and reporting. In the Environmental Engineering domain, the seven doctoral supervisors are involved in self-evaluation and related discussions, while the 57 doctoral students contribute through feedback and progress-monitoring mechanisms.

Stakeholder input is collected through progress reports, SIMAC/DAC self-evaluations, consultations and updates of institutional regulations. However, the involvement of external stakeholders remains limited and should be reinforced.

Recommendations: Strengthen the involvement of external stakeholders in the implementation of quality procedures, especially employers, alumni and research partners relevant to Environmental Engineering

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	The organisational component analyses the results of the students' biannual evaluation of teachers.
I.P.C.4.1.1	

UTCN applies procedures for the periodic evaluation of teaching staff by students.

The results of doctoral students' semester evaluations are collected electronically and analysed at the level of the Environmental Engineering domain.

The analysis is based on institutional methodology and includes synthetic reports by teacher and discipline.

The results are used to identify strengths and areas for improvement in teaching, supervision and communication with doctoral students.

The evaluations generally indicate a high level of satisfaction, particularly with scientific competence and availability for guidance.

Recommendations: Is not the case.

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	The organisational component systematically collects and analyses data required for the internal quality assurance process.
I.P.C.5.1.1	

IOSUD-UTCN systematically collects and analyses data required for internal quality assurance.

The main data sources include SIMAC, the IOSUD platform, doctoral progress records, PPUA/PCS reports, thesis defence data and anti-plagiarism repositories.

For the Environmental Engineering domain, data are used to monitor doctoral students' progress, supervisors' scientific activity and quality indicators.

The collected information supports annual reports, ARACIS self-evaluations, internal decision-making and reporting to institutional and national structures.

Recommendations: Is not the case.

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	The organisational component ensures publication and access to information of public interest regarding the evaluated study programme.
I.P.C.6.1.1	

UTCN publishes information of public interest regarding the Environmental Engineering doctoral programme.

The available information includes regulations, admission procedures, the PPUA and PCS structures, competences, supervisors, doctoral students, thesis defence procedures, and thesis summaries. Public access is ensured through the UTCN website, the IOSUD platform, doctoral school pages and quality assurance webpages.

The published documents include institutional regulations, CSUD decisions, ARACIS accreditation information, annual quality reports and thesis-related forms.

Recommendations: Is not the case.

The indicator is: fulfilled.

Indicator I.P.C.6.1.2	The organisational component ensures transparent decision-making processes.
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UTCN ensures transparency of decision-making processes related to doctoral studies.

Decisions of the Senate, Administrative Council, CSUD and Doctoral School Council are published on the institutional and IOSUD webpages.

Doctoral students are represented in management and consultative structures, contributing to decisions affecting doctoral education.

Regulations, procedures, thesis defence documents and decisions concerning the Environmental Engineering domain are communicated to academic staff and doctoral students.

The standardised thesis-finalisation process, including forms, originality declarations and similarity reports, supports transparent academic decisions.

Recommendations: Is not the case.

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.

IOSUD-UTCN carries out the procedures required for external quality evaluation.

For the Environmental Engineering doctoral domain, the previous ARACIS evaluation resulted in the maintenance of accreditation through ARACIS Council Decision no. 75/30.09.2021.

The organisational component prepares self-evaluation reports, collects supporting documents, prepares annexes and provides data requested by external evaluators.

The process also includes meetings with evaluation panels, implementation of recommendations and periodic monitoring through IOSUD and DAC structures.

Recommendations: Is not the case

The indicator is: fulfilled.

IV. SWOT Analysis

Strengths:		Weaknesses:
✓ The Environmental Engineering doctoral domain operates within a stable, legally compliant and well-	INTERNAL FACTORS 	✓ Some quality assurance and self-evaluation processes remain partly procedural and could be more strongly

regulated IOSUD-UTCN framework. ✓ The domain benefits from experienced doctoral supervisors, a coherent doctoral pathway, and a clear structure that combines advanced training and scientific research. ✓ The material base is adequate, with specialised laboratories, research centres, EERTIS infrastructure, access to ANELIS Plus, library resources and student support services. ✓ Doctoral research is connected to relevant themes such as pollution control, environmental monitoring, sustainable technologies, circular economy and resource management. ✓ The domain has visible research outputs, including WoS/ISI and Scopus-indexed publications, conference participation and research projects. ✓ Quality assurance structures, ethics mechanisms, anti-plagiarism procedures and student feedback systems are operational and support academic integrity.		connected to strategic decision-making. ✓ The number of doctoral supervisors is still relatively limited in relation to the diversification of research directions and the need for future succession planning. ✓ Access to laboratories, equipment scheduling, service records and infrastructure information is not yet fully integrated into a unified digital system. ✓ The internationalisation of the domain remains below its potential, particularly in long-term research mobility, cotutelle agreements, and international doctoral recruitment. ✓ External stakeholder involvement, especially employers and alums, is not yet sufficiently systematic in programme monitoring and periodic quality evaluation. ✓ Public information is available, but it is distributed across several webpages and could be more coherent, better indexed and more consistently available in English. ✓ Data systems used for quality assurance remain fragmented and require stronger standardisation, interoperability, and real-time reporting capabilities.
SWOT analysis		
Opportunities: ✓ European and national funding programmes can support the modernisation of laboratories, digitalisation, green technologies and applied doctoral research.	 EXTERNAL FACTORS	Threats: ✓ Changes in national legislation and ARACIS requirements may create administrative pressure and require frequent updates of procedures and

✓ The increasing relevance of environmental protection, climate neutrality, the circular economy, and sustainable industrial processes creates strong demand for doctoral expertise in these fields. ✓ Cooperation with companies, public authorities, environmental agencies and research institutes can expand applied research, internships, joint projects and employment opportunities for graduates. ✓ EUT+, Erasmus+, Horizon Europe and other international networks can strengthen mobility, joint supervision, international visibility and interdisciplinary training. ✓ Digital tools and open-data practices can improve quality monitoring, stakeholder consultation, transparency and external reporting. ✓ Growing labour-market demand for specialists in environmental impact assessment, remediation, sustainability and ESG-related fields can enhance the attractiveness of the doctoral domain. ✓ International publication platforms and interdisciplinary research networks can increase the visibility and impact of doctoral research results.		documentation. ✓ Competition from national and international universities may affect the ability to attract high-quality doctoral candidates and young researchers. ✓ Limited public or private funding for advanced research infrastructure may slow down laboratory renewal and access to high-performance equipment. ✓ Low interest among graduates in pursuing doctoral studies, combined with demographic decline, may reduce the future pool of doctoral candidates. ✓ Rapid technological change in environmental monitoring, modelling and data science may make some equipment, software or competencies outdated if renewal is not continuous. ✓ Insufficient involvement of employers and alumni in systematic feedback may reduce the programme's capacity to anticipate labour market changes. ✓ Increasing costs of publication, mobility, laboratory consumables and software licences may affect doctoral research productivity and equal access to resources.
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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.	F	Ensure that the planned integrated SD-IOSUD web interoperability system is implemented as scheduled, with clear responsibilities, milestones and periodic monitoring of progress.
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.	F	Simplify the CRMSE consultation procedure, while preserving traceability and the meaningful involvement of employers and external stakeholders
3.	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.	F	Is not the case.
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.	F	Is not the case.
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.	F	It is recommended to support habilitation, continuous professional development, international mobility and the attraction of foreign experts in teaching, supervision and research.
6.	I.P.A.3.1.2 The HEI ensures professional and personal development for its staff.	F	Is not the case.
7.	I.P.A.3.2.1 Recruitment procedures comply with the provisions of the law, and are established and carried out transparently.	F	Beyond formal procedures, make sure that there is a real "competition" to recruit the best possible staff
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.	F	Is not the case.
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 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.	F	Is not the case.

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
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).	F	Is not the case.
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.	F	Is not the case.
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.	F	Encourage more internship and research-stage mobilities, not only conference participation, and increase staff mobility so that academic staff provide an example for doctoral students.
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.	F	Commend the "Ghid de bune practici pentru abordarea studentului capabil diferit" and encourage its dissemination and practical use among doctoral supervisors, teaching staff and administrative personnel
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.	F	Improve the documentation and visibility of the evidence demonstrating doctoral students' effective access to learning, research and support resources. This may include periodically collecting student feedback on the use and adequacy of laboratories, digital resources, databases, counselling, mobility and accessibility services, and using the results to identify needs and document follow-up measures.
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.	PF	Revise the discipline sheets included in the doctoral training programme so that they are explicitly adapted to level 8 of the National Qualifications Framework / European Qualifications Framework. The revised documents should clearly define doctoral-level learning outcomes, align course content and competences with the specific requirements of doctoral research, and emphasise originality, scientific autonomy, advanced research methodology, critical thinking and the capacity to generate new knowledge.
16.	I.P.B.5.1.2 Achievement of the learning outcomes is checked in ongoing examinations and study completion exams.	PF	Revise the assessment methods described in the doctoral discipline sheets so that they are explicitly aligned with level 8 learning

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
			outcomes. The revised assessment framework should clearly show how doctoral students' advanced research competences, scientific autonomy, originality, critical thinking and capacity to generate new knowledge are evaluated, including through transparent criteria or rubrics for research reports, guidance committee evaluations and pre-defence stages
17.	I.P.B.7.1.1 The organisational component applies the admission procedures.	F	Is not the case.
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.	F	Develop targeted support measures for candidates from vulnerable groups, including information campaigns, pre-admission counselling and an admission guide available in accessible formats.
19.	I.P.B.7.2.1 The organisational component applies the regulations concerning the students' professional activity.	F	Is not the case.
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.	F	Develop specific actions to increase staff and student mobility and to attract more foreign doctoral students, including better promotion of opportunities, mobility targets and support for international recruitment.
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.	F	Is not the case.
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.	F	Is not the case.
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.	F	Ensure that quality assurance procedures lead to real quality improvement. Strengthen the culture of quality by moving from a mainly procedural approach to a quality-oriented institutional mentality, involving continuous training of teaching staff, doctoral-student education and integration of quality principles into doctoral research activities.
24.	I.P.C.1.2.1 The opinions of the members of its own community and of other stakeholders	F	Increase the real involvement of employers and other external

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
	are taken into account in the procedure implementation process.		partners in advisory structures and in the periodic evaluation of the doctoral programme.
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 any other structure or person in the higher education institution.	F	Develop clear recommendations on the use of AI by staff and doctoral students, including acceptable use, disclosure, authorship, academic integrity requirements and mechanisms for checking compliance.
26.	I.P.C.3.1.1 The organisational component consistently applies the procedures, and proves their impact on quality assurance.	F	Is not the case.
27.	I.P.C.3.1.2 Members of its own community and other stakeholders are involved in the procedure implementation process.	F	Strengthen the involvement of external stakeholders in the implementation of quality procedures, especially employers, alumni and research partners relevant to Environmental Engineering
28.	I.P.C.4.1.1 The organisational component analyses the results of the students' biannual evaluation of teachers.	F	Is not the case.
29.	I.P.C.5.1.1 The organisational component systematically collects and analyses data required for the internal quality assurance process.	F	Is not the case.
30.	I.P.C.6.1.1 The organisational component ensures publication and access to information of public interest regarding the evaluated study programme.	F	Is not the case.
31.	I.P.C.6.1.2 The organisational component ensures transparent decision-making processes.	F	Is not the case.
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.	F	Is not the case.

Summary Table of Performance Indicators – Degree of Fulfillment

Evaluation Domain	Number of Performance Indicators		
	Fulfilled	Partially fulfilled	Unfulfilled
Domain A. Institutional capacity	8	0	0
Domain B. Educational efficacy	10	2	0
Domain C. Quality management	12	0	0
Total	30	2	0

The assessment of the performance indicators shows that 30 indicators are fulfilled, while 2 indicators are partially fulfilled. The partially fulfilled indicators are both in Category B; there are no partially fulfilled indicators in Categories A or C, and no category contains more than four partially fulfilled indicators.

VI. Conclusions

The external evaluation of the doctoral study domain Environmental Engineering, organised within the Doctoral School of the Technical University of Cluj-Napoca, confirms that the domain has the institutional, educational and quality assurance capacity required for maintaining accreditation. The evaluation was based on the analysis of the self-evaluation report, institutional regulations, doctoral school documents, evidence regarding supervisors, doctoral students and research activity, as well as discussions with relevant stakeholders.

The doctoral domain benefits from a stable and transparent institutional framework, adequate managerial and administrative structures, appropriate educational and research infrastructure, and qualified human resources. The available laboratories, research facilities, digital resources, library services and support structures provide a suitable environment for doctoral education and scientific research. The domain also benefits from institutional mechanisms supporting ethics, academic integrity, internationalisation, student mobility and quality assurance.

The assessment of the performance indicators shows that 30 indicators are fulfilled, while 2 indicators are partially fulfilled. The partially fulfilled indicators are both in Domain B, Educational efficacy, and concern the definition and evaluation of learning outcomes. In particular, the discipline sheets used in the doctoral training programme appear to be insufficiently adapted to level 8 of the National Qualifications Framework / European Qualifications Framework, corresponding to doctoral studies. Consequently, the assessment methods do not sufficiently demonstrate how doctoral-level learning outcomes, such as scientific autonomy, originality, advanced research competences and the capacity to generate new knowledge, are evaluated.

No indicators were assessed as unfulfilled. Domain A, Institutional capacity, and Domain C, Quality management, are fully covered by fulfilled indicators. The recommendations formulated in the report are mainly intended to further improve the functioning of the doctoral domain, strengthen internationalisation, increase the effective involvement of external stakeholders, improve the documentation of quality enhancement measures, and ensure better alignment of doctoral training and assessment with level 8 requirements.

*Overall, the doctoral study domain Environmental Engineering demonstrates the capacity to continue operating in accordance with the legal framework and ARACIS quality standards. Based on the findings of the evaluation, the panel concludes that the doctoral domain meets the requirements for **maintaining accreditation**, with the recommendation that the institution implement the improvement measures identified in the report, especially those concerning doctoral-level learning outcomes and their assessment.*

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.

Calendarul vizitei de evaluare externă a calității
domeniului de studii universitare de doctorat/ The timetable for the evaluation of the external
quality evaluation visit
for the doctoral university study domain

Instituția de învățământ superior/Organizația furnizoare de educație/ Higher Education Institution /
Education Provider Organization: *Universitatea Tehnică din Cluj-Napoca / Technical University of
Cluj-Napoca*

Școala doctorală/ Doctoral School: *Școala Doctorală UTCN/UTCN Doctoral School*

Domeniul de doctorat/ Doctoral Domain: *Ingineria Mediului / Environmental Engineering*

Obiectivul evaluării externe/ The objective of the external evaluation: (autorizare de funcționare
provizorie/acreditare/menținerea acreditării domeniului de doctorat) *menținerea acreditării
domeniului de doctorat Ingineria Mediului / maintenance of accreditation of the doctoral study
domain Environmental Engineering*

Perioada vizitei de evaluare/ The evaluation period: 22-23.06.2026

Comisia de experți evaluatori ai ARACIS/Evaluation panel: Reprezentantul ÎS/OFE:

Nr./No.	Numele și prenumele/ Last Name and First Name	Calitatea/Team role
1.	<i>Florentina-Daniela MUNTEANU</i>	<i>Membru - Cadru didactic RNE</i>
2.	<i>Vincent WERTZ</i>	<i>Membru - Evaluator internațional RNE-I</i>
3.	<i>Ana-Maria LUPU</i>	<i>Membru - Student doctorand RNE-S</i>

Nr./No.	Numele și prenumele/Last Name and First Name	Calitatea/Team role
1.	<i>Prof.dr.ing. Horațiu VERMEȘAN</i>	<i>Persoană de contact/ Contact person</i>

Intervalul orar / Hour	Activități de evaluare / Evaluation activities	Participanți / Participants	Locație / Location Listă participanți / List of Participants
Luni / Monday, 22.06.2026			
09:00-09:30	Discuții tehnice în cadrul comisiei de experți în evaluarea externă a calității/ <i>Technical discussions within the expert committee for external quality evaluation</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i>	<i>Str. Daicoviciu 15, DMCDI et.1</i>
09:30-10:10	Întâlnirea comisiei de experți în evaluarea externă a calității cu reprezentanții conducerii componentei organizatorice/ <i>Meeting of the external quality evaluation experts' panel with the representatives of the management of the organisational component</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Reprezentanți ai conducerii componentei organizatorice aferente domeniului de studii de doctorat evaluat/ <i>Representatives of the management of the organisational component</i> - Persoana de contact/ <i>Contact person</i>	<i>Str. Daicoviciu 15, DMCDI et.1</i>
10:20-11:00	Întâlnirea comisiei de experți evaluatori în evaluarea externă a calității cu echipa care a realizat raportul de evaluare internă (REI)/ <i>Meeting of the external quality</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Echipa care a realizat REI/ <i>Team that has drafted the IER</i>	<i>Str. Daicoviciu 15, DMCDI et.1</i>

Intervalul orar / Hour	Activități de evaluare / Evaluation activities	Participanți / Participants	Locație / Location Listă participanți / List of Participants
	<i>evaluation experts' panel with the team that has drafted the internal evaluation report</i>		
11:10-11:50	Întâlnirea comisiei de experți în evaluarea externă a calității cu reprezentanți ai conducerii componentei organizatorice/persoana de contact/reprezentanți ai CEAC/reprezentanți ai structurilor organizatorice în domeniul asigurării calității*/ <i>Meeting of the external quality evaluation experts' panel with representatives of the organisational component / contact person / representatives of the CEAC / representatives of quality assurance organisational structures</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Reprezentanți ai conducerii / reprezentanți ai CEAC / reprezentanți ai structurilor organizatorice în domeniul asigurării calității/ <i>Representatives of the management / representatives of the CEAC / representatives of the quality assurance organisational structures</i> - Persoana de contact/ <i>Contact person</i>	<i>Str. Daicoviciu 15, DMCDI et.1</i>
12:00-12:40	Întâlnirea comisiei de experți în evaluarea externă a calității cu membri ai Comisiei de etică universitară/ <i>Meeting of the experts panel with members of the University Ethics Committee</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Membri ai Comisiei de etică universitară/ <i>Members of the University Ethics Committee</i>	<i>Str. Daicoviciu 15, DMCDI et.1</i>
12:40-14:00	Pauză/ <i>Break</i>		
14:00-14:30	Discuții tehnice în cadrul comisiei de experți în evaluarea externă a calității/ <i>Technical discussions within the expert committee for external quality evaluation</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i>	<i>Str. Daicoviciu 15, DMCDI et.1</i>
14:30-15:20	Întâlnirea comisiei de experți în evaluarea externă a calității cu personalul didactic implicat în activitățile din cadrul DSUD/ <i>Meeting of the external quality evaluation experts' panel with the teaching staff involved in the activities within the DSUD</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Cadre didactice conducători de doctorat/ <i>Teaching staff who are PhD supervisors</i>	<i>Str. Daicoviciu 15, DMCDI et.1</i>
15:20-16:00	Întâlnirea comisiei de experți în evaluarea externă a calității cu studenți [†] doctoranzi din cadrul DSUD/ <i>Meeting of the external</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Studenți doctoranzi/ <i>Doctoral students</i>	<i>Str. Daicoviciu 15, DMCDI et.1</i>

[†] Nu este obligatorie în cazul autorizării domeniilor de studii universitare de doctorat/ It is not mandatory in the case of authorization of doctoral university study domain.

[†] Nu este obligatorie în cazul autorizării domeniilor de studii universitare de doctorat/ It is not mandatory in the case of authorization of doctoral university study domain.

Intervalul orar / Hour	Activități de evaluare / Evaluation activities	Participanți / Participants	Locație / Location Listă participanți / List of Participants
	<i>quality evaluation experts' panel with doctoral students of the DSUD</i>		
16:10-16:50	Întâlnirea comisiei de experți în evaluarea externă a calității cu absolvenți*,† ai DSUD/ <i>Meeting of the external quality evaluation experts' panel with alumni‡ of the DSUD</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Absolvenți ai domeniului de studii evaluat/ <i>Graduates</i>	<i>Str. Daicoviciu 15, DMCDI et.1</i>
16:50-17:40	Întâlnirea comisiei de experți în evaluarea externă a calității cu responsabili centrelor/laboratoarelor de cercetare / <i>Meeting of the external quality evaluation experts' panel with the staff in charge with the research centres/laboratories</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Responsabili centrelor/laboratoarelor de cercetare/ <i>Staff in charge with research centres/laboratories</i>	<i>Str. Daicoviciu 15, DMCDI et.1</i>
17:40-18:30	Întâlnirea comisiei de experți în evaluarea externă a calității cu angajatori ai absolvenților DSUD/ <i>Meeting of the external quality evaluation experts' panel with employers§ of the DSUD alumni</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Angajatori/ <i>Employers</i>	<i>Str. Daicoviciu 15, DMCDI et.1</i>
Marti / Tuesday, 23.06.2026			
9:00 - 9:30	Întâlnirea tehnică a comisiei de experți evaluatori (Activitate în colaborare pentru clarificarea aspectelor prezentate în REI)/ <i>Technical meeting of the expert evaluation panel (Collaborative activity for clarifying the aspects presented in the Internal Evaluation Report - IER)</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i>	<i>B-dul Muncii 103 sala M11c</i>
9:30 -11:00	Vizitarea bazei materiale/ <i>Visiting the material resources</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Reprezentanți ai instituției sau Academiei Române, după caz/ <i>Representatives of the HEI or the Romanian Academy, as applicable</i>	<i>B-dul Muncii 103</i>
11:00-11:50	Întâlnirea tehnică a comisiei de experți evaluatori (Activitate în colaborare pentru clarificarea aspectelor prezentate în REI)/ <i>Technical meeting of the expert evaluation panel</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i>	<i>B-dul Muncii 103 sala M11c</i>

* Se va evita invitarea absolvenților care sunt angajați ai ÎIS sau ai OFE, după caz.

† Nu este obligatorie în cazul autorizării domeniilor de studii universitare de doctorat

‡ Avoid inviting alumni who are also staff of the HEI or members of the Romanian Academy, as applicable.

§ Avoid inviting employers who are also staff of the HEI or members of the Romanian Academy, as applicable.

Intervalul orar / <i>Hour</i>	Activități de evaluare / <i>Evaluation activities</i>	Participanți / <i>Participants</i>	Locație / <i>Location</i> Listă participanți / <i>List of Participants</i>
	<i>(Collaborative activity for clarifying the aspects presented in the Internal Evaluation Report - IER)</i>		
11:50 - 12:20	Întâlnirea membrilor comisiei de experți evaluatori cu reprezentanții instituției evaluate pentru comunicarea concluziilor procesului de evaluare/ <i>Panel evaluators` meeting with representatives of the institution under review to discuss on the conclusions of the evaluation process.</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i> - Reprezentanți ai conducerii componentei organizatorice aferente domeniului de studii de doctorat evaluat/ <i>Representatives of the management of the organisational component</i> - Persoana de contact/ <i>Contact person</i>	<i>B-dul Muncii 103 sala M11c</i>
12:20 - 13:10	Finalizarea activităților de evaluare/ <i>Completion of evaluation activities</i>	- Comisia de experți evaluatori ai ARACIS/ <i>Panel members</i>	<i>B-dul Muncii 103 sala M11c</i>

If deemed necessary, and depending on the type of doctoral program being evaluated, additional meetings may also take place, for example with representatives of:

- departments providing IT support, for instance regarding the organization of online activities
- departments for international relations and student mobility
- the Counseling and Career Guidance Center, etc.

Prepared by,

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Prof. univ. dr. ing. Horațiu VERMEȘAN