

The Romanian Agency for Quality Assurance in Higher Education



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

Higher Education Institution/Education Provider Organization:	Transylvania University of Brasov
Doctoral School:	Interdisciplinary Doctoral School
Doctoral Domain:	Mechanical 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.	<i>Sorin-Ştefan BIRIŞ</i>	Expert Evaluator	
2.	<i>Marian GRIGORE</i>	International Expert	
3.	<i>Karla-Elisabeth LOVASZ</i>	PhD Student Evaluator	

I. Introduction

The evaluators panel composed by Prof.univ.dr.eng . Sorin-Ștefan BIRIȘ (National University of Science and Technology POLITEHNICA Bucharest), Prof.dr.eng . Marian GRIGORE (international expert – Technical University of Moldova, Chișinău, Republic of Moldova) and PhD Student Karla-Elisabeth LOVASZ (Politehnica University of Timisoara), approved by the ARACIS Council through Decision no. 152/H/07.05.2026, has participated in period 29-30.06.2026, at the Transylvania University of Brasov, for external quality assurance for the procedure for obtaining a maintaining accreditation (MAC) of Doctoral Study Domain **Mechanical Engineering**.

[Transylvania University of Brașov \(UNITBV\)](#) is a public, accredited university operating under autonomy per the Romanian Constitution, Higher Education Law no. 199/2023, national QA regulations, and its [Charter](#); its current name is established by Order no. 4894/22.03.1991. Founded in 1948 as the Institute of Forestry, UNITBV has evolved into a comprehensive university with 18 faculties (9 engineering; 9 in humanities, sciences, law, medicine, music, etc.). Its mission spans bachelor's, master's, and doctoral education; advanced research, innovation, and technology transfer; postgraduate programs; and partnerships with society. [Strategy 2024–2029](#) targets: (1) enhanced performance; (2) a dynamic, socially responsive academic community; (3) full integration in the European Higher Education Area and stronger internationalization. Enrollment 2025–2026: 21,857 students—17,522 in 98 bachelor's programs (90 Romanian, 8 in foreign languages), 3,738 in 85 master's programs (59 Romanian, 26 foreign), 597 in 24 doctoral programs—plus 621 medical residents in 28 clinical departments. Research is organized in 31 centers within Romania's largest university R&D institute (EUR 20M EU funds + EUR 10M own). In 2025, UNITBV ran 110 national/international projects (18 Horizon Europe), totaling EUR 2,063,921, up from EUR 1,816,845 across 136 projects in 2019. Web of Science outputs grew fourfold, from 144 (2012) to 579 (2025). UNITBV prioritizes internationalization, holding collaboration agreements (framework, Erasmus+, CEEPUS) with 721 institutions in 92 countries. Full-time international enrollment rose 80% in five years (from 362/61 countries in 2020 to 581/91 in 2025), driven by programs in foreign languages. In 2022, UNITBV joined ENIHEI (one of 35 EU universities). In 2023, it joined the UNITA European University Alliance and earned the European Commission's HR Excellence in Research Award. Rankings improved markedly: from 12th (2019) to 5th (2024) in Romania's metaranking, with consistent top-10 national placement across global systems. UNITBV has diversified programs (especially in foreign languages), intensified research, strengthened international partnerships, expanded community engagement, and advanced sustainability—confirming its status as one of Romania's most dynamic, fast-rising universities.

Doctoral studies (EQF/NQF Level 8) at Transylvania University of Brașov are organized within IOSUD-UNITBV, legally represented by the Rector and governed by the [Council for Doctoral University Studies](#) (CSUD). Programs run through the [Interdisciplinary Doctoral School](#) (SDI), led by a Director and Council, under the Vice-Rectorate for Scientific Research and Digitalization. SDI has operated since 1 Oct 2010 (Senate Resolution 27.07.2010), following the 2005 creation of the Doctoral Department. Doctoral education dates to 1953 (Decree 291/1953; CM Decision 2471/1953), rooted in the 1948 Institute of Forestry and 1949 Institute of Mechanics, merged in 1956 as the Polytechnic Institute of Brașov; first theses were defended in 1957–1958. As of 1 Oct 2025, IOSUD-UNITBV hosts 24 doctoral fields across 6 fundamental domains and 11 branches, authorized by recent ministerial orders. IOSUD-UNITBV remains dynamic, with new fields planned. The Chemical Engineering field was discontinued in Jan 2019 after the sole supervisor's retirement; no students were enrolled.

The Interdisciplinary Doctoral School (SDI) is an intra-institutional structure of Transylvania University of Brașov whose functionality follows the University's overall policy, actively contributing to its implementation. Integrated within the [Vice-Rectorate for Scientific Research and Digitalization](#), SDI aligns with the University's strategic directions in research, innovation, and doctoral education. Its mission within

IOSUD-UNITBV is to develop doctoral-level educational activities and research in the accredited doctoral fields.

The Mechanical Engineering doctoral field (DSUD-IM), within the Interdisciplinary Doctoral School, is academically supported by the Faculties of Mechanical Engineering, Product and Environmental Design, and Civil Engineering, ensuring bachelor–master–doctorate continuity per Law 199/2023 and the ARACIS Guide. Since the last external evaluation, DSUD-IM has advanced in human resources, infrastructure, and research. Supervisors increased from 31 to 34, enhancing coordination capacity and expertise. Active doctoral students decreased from 61 to 51 due to thesis completions, without affecting capacity or field operation. During the period analyzed, research infrastructure was upgraded and expanded: labs gained high-performance mechanical/structural testing equipment, new experimental platforms, and updated CAD/CAE software, boosting experimental and numerical research capacity. Scientific visibility increased via publications in internationally indexed journals and doctoral participation in specialized conferences. Participation in national and international research projects—led by doctoral supervisors—also grew, supporting thesis development and integrating students into competitive teams. Overall, DSUD-IM's academic and research capacity has strengthened in human resources, infrastructure, and performance since the last external evaluation.

II. Methods used

For the external quality evaluation to maintain DSUD-IM accreditation, the ARACIS evaluation committee reviewed the Internal Evaluation Report (IER) and its annexes uploaded to the ARACIS platform, visited the facilities, and met—per the visit schedule—with the organizational leadership, the IER preparation team, employers, graduates, doctoral students, PhD supervisors in the field, research center coordinators, quality assurance members, and IOSUD secretarial staff. The documents analyzed before and during the on-site visit, as uploaded to the ARACIS platform, are the following:

[Internal Evaluation Report \(REI\)](#)

[Annex 1.](#) Research infrastructure and scientific resources for doctoral studies

[Annex 2.](#) CNATDCU Standards _doctoral cond.

[Annex 3.](#) Admission lists 2021-2025

[Annex 4.](#) Publications and PhD participation in conferences

[Annex 5.](#) SDI - IM Documents

[Annex 6.](#) Scientific activities doctoral supervisors_2021-2025

[Annex 7.](#) List of research projects carried out under the coordination of doctoral supervisors_ 2021-2025

[Annex 8.](#) Expulsion rate in the first 3 or 4 years - 2021-2025

[Annex 9.](#) PhD theses defenses_2021-2025

During the visit, the evaluation committee, following the visit schedule, inspected the following research spaces: the Research Center for Numerical Simulation, Testing, and Mechanics of Composite Materials, located in building Corp L9, highlighting the Mechanical Testing and Vibration Analysis Laboratory, the Design, Numerical Analysis, and Rapid Prototyping Laboratory, and the Material Physico-Mechanical Characterization Laboratory, which also hosts core PPUA theoretical activities in Course Room A. The participants also analyzed the specialized testing modules running under the Research Center for High-Tech Products for Automotive Vehicles, verifying the operational capacity of the Road Safety, Accident Analysis and Reconstruction Laboratory, the Single-Cylinder Engine Testing Laboratory, and the Hydraulic Systems for Vehicle Propulsion Laboratory.

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

Transylvania University of Braşov organizes doctoral studies within IOSUD-UNITBV, under the [Regulation on doctoral and postdoctoral studies](#), updated to align with Higher Education Law no. 199/2023 and the Framework Regulation (OME no. 3020/2024). The Regulation sets the institutional framework for organizing, conducting, completing doctoral studies, QA, the legal status of doctoral students/supervisors, and postdoctoral studies. Programs run through the Interdisciplinary Doctoral School (SDI), whose operation and study processes are defined by the [SDI Regulation](#), likewise updated to current law. IOSUD-UNITBV is governed by the [Council for Doctoral University Studies \(CSUD\)](#), whose Director is appointed via a public competition per the dedicated [methodology](#). CSUD and the SDI Council (C-SDI) operate under the IOSUD Regulation; member elections follow specific, periodically updated [methodologies](#). [CSUD](#) (mandate 2024–2029) comprises 11 members: the Director (ex officio), 8 full-time IOSUD supervisors elected by peers, and 3 doctoral students elected by doctoral peers (fulfilling Law 199/2023, Art. 131(7)); decisions since 2016 are posted [online](#). [C-SDI](#) (mandate 2021–2026) includes the SDI Director (ex officio), 8 full-time supervisors, 4 doctoral students, and 4 socio-economic representatives selected by CSUD. Since 2020, each doctoral field has a field coordinator (also responsible for internal evaluation reports), nominated by faculties with C-SDI/CSUD endorsement and Board approval. SDI issues [specific instructions](#) that form part of UNITBV's quality system and are periodically updated: Affiliation/disaffiliation; Doctoral internship; Doctoral thesis—writing and defense.

✓ Analysis of the state of facts

IOSUD-UNITBV has organizational components and a management system appropriate for conducting doctoral studies, operating based on regulations and methodologies that are periodically revised in accordance with the law. Core processes at the doctoral school level (doctoral supervisors, doctoral internship, and doctoral thesis defense) are governed by a set of specific instructions, regularly updated to align with legal provisions and the university's strategy. Adapting the structure of IOSUD-UNITBV's organizational components (CSUD, C-SDI) and periodically updating the internal regulatory framework (regulations, methodologies, instructions, forms) in line with legislative changes in doctoral education are envisaged to maintain compliance. Additionally, discussions with university representatives indicated an intention to increase transparency and information accessibility by restructuring the doctoral school's website so that all documents are available in a unified, up-to-date, bilingual format (Romanian and English).

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.
--------------------------	--

✓ Presentation of the state of facts

Per the [Regulation on doctoral and postdoctoral studies](#), the [Council for Doctoral Studies \(CSUD\)](#), in consultation with the doctoral school, is responsible for developing/updating doctoral [regulations](#) and [methodologies](#). After CSUD adoption, they are forwarded to the University's Board of Directors, annexed to Board Decisions (HCA), and published on the UNITBV [website](#) (University Charter, regulations and decisions – Board Decisions) for the academic community (including supervisors and doctoral students). Stakeholders may propose amendments via their faculty Senate representatives. The Senate's scientific committee reviews and reports on each regulation/methodology, which is then discussed and approved in the Senate meeting, where further modifications may be proposed. Stakeholder involvement also included submitting the initial Interdisciplinary Doctoral School Regulations and specific instructions to IOSUD-UNITBV doctoral supervisors for debate; these were adopted by universal, direct, secret, and equal vote.

✓ Analysis of the state of facts

UNITBV incorporates the views of its academic community (including doctoral supervisors and students) when adopting or revising regulations, methodologies, and application procedures/instructions, via doctoral field representatives in IOSUD-UNITBV bodies (C-SDI, CSUD) and faculty representatives on the Board of Directors and University Senate. Inclusion of socio-economic figures in C-SDI ensures employer involvement in developing the internal regulatory framework and defining doctoral program content. This collaboration is further strengthened through the Institute for Research, Development and Technology Transfer (ICDT)—notably the centers for Numerical Simulation, Testing and Mechanics of Composite Materials, and Hi-tech Products for Automotive Vehicles—and through research centers in the Faculties of Product and Environmental Design (DPM) and Civil Engineering, which connect with industry and support practical doctoral training and student involvement in relevant projects.

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

The Mechanical Engineering PhD program operates within UNITBV's infrastructure, using modern labs and research centers of the Interdisciplinary Doctoral School (SDI) and the [Institute for Research and Development \(ICDT\)](#). Facilities include mechanical/structural testing, CAD/CAE simulation, advanced manufacturing labs, and research offices, all accessible to persons with disabilities (e.g., Simulation and Testing in Mechanical Engineering; High-Tech Products for Vehicles; Virtual Industrial Informatics

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

and Robotics; Renewable Energy Systems and Recycling; Advanced Mechatronic Systems; Design of Mechanical Elements and Systems). Doctoral students have [library access](#) and [international databases](#). Additional suitable spaces in the Faculties of Mechanical Engineering, Product and Environmental Design, and Civil Engineering also host PPUA I transversal skills modules and the Doctoral School opening, fostering integration into interdisciplinary teams and national/international [projects](#). UNITBV's [CNFIS-FDI-2024-F-0397 project](#), "From access to success," builds an inclusive academic environment for students with disabilities, engaging students in disability-friendly campus solutions and related activities (see links on the university website).

✓ **Analysis of the state of facts**

The material resources are adequate for research and study, with laboratories and equipment used efficiently. Synergy between SDI and ICDT centers enables doctoral students' integration into interdisciplinary activities and projects relevant to industry and academia. However, there are opportunities to optimize concurrent access to specialized labs and equipment. For the future, plans include optimizing the use of spaces and equipment, expanding access to digital resources and laboratories, modernizing infrastructure through complementary acquisitions, and strengthening doctoral students' participation in interdisciplinary projects and collaborations with industrial and academic partners to enhance the program's quality and visibility.

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**

Doctoral students in Mechanical Engineering benefit from SDI and ICDT's [modern laboratories](#) and equipment, study and research spaces adapted to their needs—including for persons with disabilities—and access to the [library](#) and [international scientific databases](#).

✓ **Analysis of the state of facts**

The infrastructure supports high-standard research and study activities and integrates doctoral students into interdisciplinary projects. Synergy between SDI and ICDT optimizes resource use, though simultaneous access to certain laboratories could be improved. Discussions with university representatives indicated plans for ongoing modernization and maintenance of real estate and movable assets, optimization of lab scheduling and equipment access, expansion of digital and laboratory resources, and strengthened doctoral participation in interdisciplinary projects and collaborations with industrial and academic partners.

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**

In the first six months, PhD students follow the [PPUA](#): Semester I (transversal skills) and Semester II (specialized skills), comprising teaching activities, individual study, and exams. PPUA courses are

taught by [staff](#) with relevant teaching and research experience. Thereafter, studies proceed under Mechanical Engineering supervisors, who provide research expertise, integrate students into national/international projects, and support interdisciplinary activities. Supervisors from the Faculties of Mechanical Engineering, Product and Environmental Design, and Civil Engineering meet CNATDCU minimum standards, have experience in national/international projects, publications in WOS Q1–Q2 journals, and academic mobilities, ensuring student integration into the scientific community.

✓ [Analysis of the state of facts](#)

The doctoral supervisors are well suited for research and doctoral coordination, ensuring interdisciplinary skills and alignment with industrial and academic needs. Their experience in national/international projects, WOS Q1–Q2 publications, and academic mobilities reflects a high level of scientific quality. Integrating doctoral students into research teams and involving them in international projects and conferences supports training and program visibility. At the on-site visit, 34 doctoral supervisors were active in the Mechanical Engineering doctoral fields (22 tenured and 12 associates). For DSUD-IM supervisors, over 90% of the CNATDCU minimum habilitation standards in force were met. Going forward, the program will strengthen supervisors' expertise, recruit new specialists with international/interdisciplinary experience, and expand competencies by adding supervisors. Priorities include increasing doctoral student involvement in top international projects and publications, deepening links with industry for research themes and technology transfer and developing students' competencies through active supervisor participation in program development and coordination.

✓ [Recommendations](#)

Periodic evaluation of associate doctoral supervisors and analysis of the possibility of disaffiliating those who have no active doctoral students, do not serve on guidance committees and fail to meet the CNATDCU minimum requirements in force.

✓ [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](#)

The institution supports the professional and personal development of doctoral supervisors by facilitating participation in national and [international research projects](#), [academic mobilities](#), prestigious [scientific conferences](#), and continuing education and professional development programs. [Mechanical Engineering supervisors](#) are actively engaged in these activities, strengthening scientific competencies and integrating doctoral students into international academic and research networks. Over the past five years, their development has primarily been achieved through research activity, [participation in scientific events](#), and involvement in national and international projects.

✓ [Analysis of the state of facts](#)

The activity of doctoral supervisors directly enhances doctoral students' professional and research skills, strengthening the quality of the program. Their involvement in national and international research projects and participation in specialized conferences demonstrate a sustained commitment to high academic performance and effective knowledge transfer. Although international academic mobilities were limited during the period analyzed, the supervisors' scientific activity ensured integration into the professional community and the maintenance of quality standards.

[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](#)

Transylvania University of Braşov applies [transparent recruitment procedures for teaching and research staff](#) in line with national legislation. Methodology for filling teaching positions and the Methodology for

filling research, development, and innovation positions are public on the university website. Within the Interdisciplinary Doctoral School (SDI), affiliation of doctoral supervisors follows internal quality standards and scientific performance criteria, consistent with national regulations and the institutional regulation on doctoral studies. [Advisory committee members](#) for the Mechanical Engineering PhD are PhD-holding specialists in relevant topics, nominated by the supervisor, endorsed by competent academic bodies, and approved by the SDI Council. UNITBV's recruitment methodologies and procedures are published at [UniTBV Vacancies](#) and applied per current law. In Mechanical Engineering and other fields, SDI ensures highly qualified supervision throughout the program, using [internal quality standards](#) and scientific performance criteria tailored to each field for supervisor affiliation.

✓ [Analysis of the state of facts](#)

The existing procedures ensure a rigorous selection of doctoral supervisors, aligned with Mechanical Engineering requirements and SDI standards. Doctoral students receive specialized guidance, integration into national and international projects, and access to faculty and ICDT infrastructure. The system of guidance committees provides balanced, expert supervision, and the transparency of recruitment is documented and upheld according to institutional procedures.

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](#)

UNITBV's digitization follows the Digital Transformation Strategy. Administrative services use dedicated software and internet-connected systems, matching European HE standards. Institution-wide IT access is provided via institutional accounts to [intranet resources](#) (doctoral school section with PPUA-I schedules, instructions/forms, contract templates, standards, events), the [e-learning platform](#), internship and Erasmus portals, drive/email services, and the academics.unitbv.ro platform for research reporting. A dedicated doctoral IT platform (<https://doctorat.unitbv.ro/>) modernizes student records and progress tracking, developed with the Faculty of Mathematics and Computer Science. It handles admissions data, supervision committees, program progress, status (normal, extension, grace, interruption), and fees, and generates reports (e.g., CNFIS, RMU exports, statistics). Access levels: SDI staff: full view/edit; Supervisors: view their doctoral students; Doctoral students: view personal data and progress. Benefits include rapid, direct access for students/supervisors, reduced SDI administrative load, and self-verification to prevent or quickly correct errors.

✓ [Analysis of the state of facts](#)

Doctoral students have access to a high-performance IT infrastructure and learning resources that support a quality educational process. Through the dedicated electronic platform, students can view key information about their doctoral internship (grades, qualifications, credits, form of education, fee payments, etc.); doctoral supervisors can access up-to-date information on their supervisees; and the doctoral school secretariat can extract data for reporting.

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.
--------------------------	---

✓ **Presentation of the state of facts**

The Mechanical Engineering PhD program follows the structure of the Interdisciplinary Doctoral School and includes the [Advanced University Training Program \(PPUA\)](#), common to all engineering fields. Conducted over the first year's two semesters, [PPUA](#) develops both transversal and specialized skills. In the [second semester](#), the doctoral student, together with the supervisor and guidance committee, selects three specialized courses relevant to the thesis topic, totaling 30 ECTS. These courses conclude with exams or colloquia assessing knowledge and skills.

✓ **Analysis of the state of facts**

The PPUA curriculum aligns learning objectives with research activities and both transversal and specialized competencies. The second-semester specialized module enables personalized training tailored to each thesis topic, supporting interdisciplinary integration and professional relevance. Collaboration between doctoral students and academic/industrial partners will be strengthened to ensure research topic relevance and the development of practically applicable skills.

✓ **Recommendations**

Periodically update the DSUD-IM documentation package (curriculum and course syllabi) by incorporating recommendations from stakeholders (alumni, doctoral supervisors and doctoral students).

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**

Doctoral students in Mechanical Engineering develop scientific, research, and interdisciplinary skills necessary for advanced research, technological innovation, and international academic collaboration. [Doctoral theses](#) align with the discipline and industry needs so that learning outcomes correspond to competencies in ESCO occupational standards and CNATDCU standards. This alignment is documented through approved research topics and doctoral training programs reflecting the preparation required for Mechanical Engineering occupations. Doctoral students in Mechanical Engineering develop scientific, research, and interdisciplinary skills necessary for advanced research, technological innovation, and international academic collaboration. Doctoral theses align with the field

* 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.

and industry needs so that learning outcomes match ESCO occupational competencies and CNATDCU standards. This alignment is evidenced by approved research topics and doctoral training programs reflecting the preparation required for Mechanical Engineering occupations.

✓ **Analysis of the state of facts**

The program trains doctoral students in relevant theoretical and practical skills, integrating them into research projects, interdisciplinary collaborations, and international activities under the coordination of doctoral supervisors. Discussions with supervisors highlighted the need to maintain alignment with technological and scientific developments by periodically updating research topics and specialized courses, and by strengthening collaborations with academia and industry to enhance the relevance and impact of doctoral research.

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**

The Mechanical Engineering doctoral program's structure, content, and organization of teaching, learning, assessment, and research supervision follow doctoral student-centered principles. The Advanced University Training Program (PPUA) [curriculum](#) and [course syllabi](#) develop professional and transversal competencies, expressed as learning outcomes aligned with research and the mechanical engineering socio-economic context. Teaching employs interactive, participatory methods (case analyses, debates, article development, research presentations). Individual research is coordinated and monitored via annual progress reports. Seminars, workshops, and conferences where students present results are recorded and accessible on [institutional platforms](#). Evaluation focuses on academic/scientific performance and includes research reports, publications, conference participation, and guidance committee feedback, ensuring autonomy, responsibility, and professional development in line with third-cycle standards.

✓ **Analysis of the state of facts**

Applying student-centered learning principles in the Mechanical Engineering PhD program has fostered autonomous development and advanced research skills. Integration into interdisciplinary projects, participation in seminars and conferences, and access to electronic resources and scientific databases strengthen students' expertise and enhance the program's international visibility. Activities are monitored annually through anonymized reports, enabling progress assessment and adjustment of academic support. Discussions with the doctoral school indicate continued emphasis on autonomy and critical thinking, increased involvement in interdisciplinary projects and academic-industrial collaborations, strengthened use of digital resources, and calibrated mentoring to ensure robust, relevant scientific competence.

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**

Transylvania University of Braşov offers students and doctoral candidates opportunities for academic mobility—both physical and virtual—through [Erasmus+](#) and other active [international partnerships](#). Doctoral students can undertake research internships and collaborations abroad, strengthening their scientific skills and international experience.

✓ **Analysis of the state of facts**

The analysis of activities during the reporting period shows that UNITBV provides an institutional framework for doctoral student mobility through Erasmus+ and other active international partnerships. Although the number of mobilities was limited in the period analyzed, existing procedures ensure all doctoral students can access research internships and international collaborations, supporting the development of scientific skills and international experience. The mobility approval and management system is transparent, with clearly defined procedures. Doctoral students' access to information and administrative support is facilitated via online platforms and coordination by supervisors and the SDI.

✓ **Aspects that constitute best practice examples**

Starting with the 2025–2026 academic year, each UNITBV doctoral student's individual study contract includes an obligation to participate in at least one week of international mobility during the entire doctoral training period.

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
--------------------------	---

✓ **Presentation of the state of facts**

UNITBV ensures equitable access to key learning and research resources for doctoral students. The [university library](#) provides online book collections and databases, accessible on campus and remotely, and the e-learning platform supports communication, documentation, and teaching. Students benefit from campus accommodation and dining, plus professional counseling via the [Career Counseling and Orientation Center \(CCOC\)](#). Erasmus+ offers international mobility, and the [CNFIS-FDI-2024-F-0397 project](#) fosters an inclusive, accessible environment for students with disabilities, engaging creative students to [devise feasible access solutions](#).

✓ **Analysis of the state of facts**

The analysis indicates that UNITBV provides equitable, diverse access to academic resources and support services, facilitating doctoral students' research and their personal and professional development. The library, e-learning platform, and counseling centers supply the tools needed for study and integration into the academic community, while inclusion projects and international partnerships expand opportunities for mobility and collaboration. Access to dormitories and canteens ensures optimal living conditions, and doctoral students' active participation in internationalization programs reflects a coherent institutional framework conducive to educational progress.

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**

UNITBV ensures equal access for Mechanical Engineering doctoral students to educational, research, and support resources. The [library](#) provides book collections and major international databases (ScienceDirect, SpringerLink, Web of Science, Scopus) accessible on campus and remotely for thesis

development and publishing. Doctoral work takes place in well-equipped labs and research centers within the Faculties of Mechanical Engineering, Product and Environmental Design, Civil Engineering, and the [Institute for Research and Development](#), integrating students into national/international teams. Industrial partnerships (e.g., Siemens Industry Software Romania, IAR SA, AVL Romania, Schaeffler Romania) support applied research. Students can undertake international mobility via [Erasmus+](#) (2021–2027) and other partnerships, with mobility possible even without prior bilateral agreements. Through the [Career Counseling and Guidance Center \(CCOC\)](#), they access professional counseling and development activities. The e-learning platform supports communication, program organization, and progress monitoring. UNITBV provides accommodation in 13 dormitories and meals in two canteens. The [CNFIS-FDI-2024-F-0397 project](#) advances an accessible, inclusive academic environment, including for doctoral students with disabilities.

✓ [Analysis of the state of facts](#)

The Mechanical Engineering PhD field within IOSUD-UNITBV benefits from robust research infrastructure, laboratories and centers across the involved faculties and the Research and Development Institute, along with access to bibliographic resources and international scientific databases, and integration of PhD students into national and international research projects. Collaborations with industry are consolidated, and Erasmus+ offers international mobility opportunities. PhD students also have access to support services (career counseling, e-learning platform, accommodation facilities), while the university implements measures to ensure an inclusive academic environment.

[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](#)

The learning outcomes of the Mechanical Engineering PhD program are clearly defined in the [curriculum](#) and target advanced capabilities in research, critical analysis, synthesis, and innovation. During the evaluation period, 16 doctoral theses were defended, demonstrating the program's effectiveness in meeting doctoral training objectives. In the first semester, students complete courses with explicit learning objectives that provide the necessary theoretical and methodological foundation. Subsequently, individualized training with the doctoral supervisor aligns these objectives with each doctoral topic, ensuring that every student acquires practical competencies and independent research skills, applies advanced scientific methods, and actively contributes to research projects. This approach delivers integrated doctoral training tailored to the field's specifics and aligned with international standards.

✓ [Analysis of the state of facts](#)

The analysis indicates that learning outcomes are well defined, relevant to Mechanical Engineering, and accessible to both doctoral students and supervisors. Objectives are clearly linked to research activities and progress assessment, ensuring a transparent, predictable framework for doctoral training. There is, however, room to clarify specific indicators for interdisciplinary competencies gained through projects and industry collaborations. Discussions with the doctoral school showed plans to update and standardize learning outcome descriptions across all courses, align them with skills acquired via research and interdisciplinary projects, and implement continuous feedback mechanisms between students and supervisors to optimize scientific training progress.

[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**

Verification of learning outcomes in the Mechanical Engineering PhD program is conducted through continuous assessment of doctoral progress via annual research reports, seminar and colloquium presentations, and evaluation of PPUA modules. Each course or training module includes specific verification methods—exams, colloquia, or progress presentations—aligned with the student's thesis and research objectives. Evaluation is documented through annual reports, progress sheets, and grades recorded in the university system.

✓ **Analysis of the state of facts**

Continuous assessment enables monitoring of doctoral students' competence development and research progress, identifying strengths and areas needing additional support. The integrated assessment process maintains a direct link between learning objectives and research activities, fostering advanced competencies and academic autonomy. Going forward, the continuous and final evaluation system will be maintained and enhanced by integrating constant feedback and digital tools for progress monitoring, ensuring the achievement of learning objectives and competencies specific to Mechanical Engineering.

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.

✓ **Presentation of the state of facts**

The PhD admission methodology is developed annually for each session. For September 2026, it was drafted by the Interdisciplinary Doctoral School Council (C-SDI), endorsed by the Council for Doctoral University Studies (CSUD), and approved by Senate Decision no. 32 of 25.02.2026. Admission follows the methodology's criteria, evaluating the application file and requiring an interview and/or a research project. Procedures ensure transparency, equal opportunities, and adherence to non-discrimination principles.

✓ **Analysis of the state of facts**

Admission procedures are well defined, documented, and uniformly applied, with candidates receiving clear information on criteria and stages. Recent statistics show steady candidate participation, and consistent rule application ensures transparency, fairness, and accuracy in selection. Future actions will maintain transparency and fairness, updating the methodology as needed in line with legislation and university regulations. The methodology is clearly communicated to candidates to ensure full understanding. Plans also include expanding online information support and digitizing admission stages to improve access and comprehension.

✓ **Aspects that constitute best practice examples**

Clear, formalized, and public admission procedures—aligned with national and institutional regulations—ensure transparent information about the admission competition and its uniform application across the Interdisciplinary Doctoral School.

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 establishment 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**

Admission to the Mechanical Engineering doctoral field upholds equity and equal opportunity. Procedures include support measures for candidates from vulnerable groups in social or educational risk situations, as well as for those with special educational needs or disabilities. In the involved faculties (Mechanical Engineering, Product and Environmental Design, Civil Engineering), candidates benefit from adapted facilities—accessible interviews, assistance with application files, and information materials in adapted formats. Admission files and minutes are centralized at the Doctoral School; doctoral supervisors may retain copies for their own use only. Supporting evidence includes [the annual admission methodology](#), admission committee minutes, [Doctoral School records](#) on facilities for candidates with special needs, and documentation of support measures for vulnerable groups.

✓ **Analysis of the state of facts**

The procedures applied in the Mechanical Engineering PhD field ensure a fair, transparent admission process. Implemented measures support candidates from vulnerable groups and those with special educational needs, facilitating effective participation. Recent years' experience shows these mechanisms function well, ensuring inclusion and equal access to doctoral studies.

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**

The academic trajectory of doctoral students—including evaluation for reallocating state-funded doctoral grants and recognition of studies or internships abroad—is regulated by internal documents available on the institution's website. These include: [Regulations for the Organization and Conduct of Doctoral and Postdoctoral Studies](#); [Doctoral School Instructions](#); [Methodology for Assessing Doctoral Students' Activity for Reallocation of State-Funded Grants](#); [Methodology for Recognizing Periods of Study Abroad](#); and [Regulations on Recognizing Study or Practice Periods under Erasmus+ mobility programs](#). Implementation of these documents and procedures is monitored through quantitative data on doctoral progress—number of enrolled students, annual expulsions, and expulsion rates—reflecting the effectiveness of institutional rules and procedures.

✓ **Analysis of the state of facts**

The applied procedures ensure a clear, transparent academic pathway for doctoral students, facilitating activity evaluation, recognition of studies, and integration of international mobilities.

✓ **Aspects that constitute best practice examples**

A clear, coherent regulatory framework for doctoral students' professional activity—combined with periodic progress monitoring through monthly evaluations and activity reports, active supervisor support and assessment, and thorough communication of students' rights and obligations—represents good practice.

The indicator is: fulfilled.

Criterion B.8. Process internationalization

Standard S.B.8.1. Internationalization

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.
---------------------------------	---

✓ **Presentation of the state of facts**

UNITBV and the Mechanical Engineering doctoral field undertake international cooperation activities that support doctoral and staff mobility and research collaboration. Doctoral students may participate in [international programs](#), internships, and [conferences](#) -via [Erasmus+](#), [international partnerships](#), and [joint research projects](#). Governing documents and evidence for assessing international mobility and collaborations, partnership agreements, mobility plans, participation reports, and collaborative project documentation, are available on the university website and in the Doctoral School archive. These official records are managed by the [International Relations Center](#) and the [Erasmus+ Office](#) and are accessible through dedicated portals and website sections, including those for doctoral students. At the co-supervision level, all active arrangements are national, with a single international co-supervision agreement available for future collaborations.

✓ **Analysis of the state of facts**

Doctoral students' participation in international mobility and joint projects enhances the quality of education and research and supports their integration into the international scientific community. Recent years show consistent involvement in Erasmus+ programs and collaborations with foreign universities and research institutes. International mobility for doctoral students and staff will continue to expand through new partnerships and participation in international projects and conferences. Efforts will also focus on facilitating access to academic collaborations and international research, further strengthening doctoral students' integration into the global scientific community.

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**

Within the Mechanical Engineering doctoral field, students conduct their activities through scientific research, participate in specialized conferences, and contribute as authors or co-authors to scientific papers. Some are involved in national and international [research projects](#), enabling the practical application of advanced methods and techniques and the capitalization of research results in developing the skills and knowledge specific to the doctoral program. These activities are thoroughly documented and reflected in individual research plans, Doctoral School reports, and the scientific publications generated within the program, providing concrete evidence of research integration into the learning process and the achievement of targeted outcomes.

✓ **Analysis of the state of facts**

Research-based learning significantly supports the acquisition of the competencies and outcomes expected in the doctoral program. Doctoral students' participation in conferences and their roles as authors or co-authors enable the integration of research results into the learning process and facilitate their integration into the scientific community. Involvement in research projects, even with limited participation, strengthens practical experience and professional training. Close collaboration between doctoral students and faculty will be encouraged to integrate research results into coursework and to develop research skills to international standards.

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**

Within the Mechanical Engineering doctoral field, each student conducts research under the guidance of a doctoral supervisor, pursuing objectives specific to their topic while aligned with the overall objectives of the doctoral program. Research results are visible nationally and internationally through scientific publications, conference participation, and involvement in relevant research projects. Activities are documented in individual research plans, Doctoral School reports, and records of scientific publications, reflecting both the program's general objectives and each topic's specific goals. The international visibility of [DSUD-IM supervisors](#) is evidenced by publications in journals indexed in Web of Science and other prestigious databases, as well as service on international conference scientific committees and editorial boards.

✓ **Analysis of the state of facts**

Inquiry-based learning enables PhD students to leverage research results to meet both program-level and thesis-specific objectives. Participation in projects, conferences, and publications fosters professional and academic skill development, integrates students into the scientific community, and increases the national and international visibility of research outcomes. Going forward, the focus will be on strengthening individualized research by supporting involvement in competitive projects, publishing in high-impact journals, and participating in international conferences. Close collaboration between doctoral students and faculty will also be encouraged to align each thesis's results with the program's overall objectives and to enhance the field's scientific visibility and impact.

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**

The University's [internal quality assurance system](#) comprises strategies, action plans, regulations, and procedures. Transylvania University of Braşov has a [Quality Assurance Strategy](#) aligned with the European Higher Education Area and ESG Part Ia. [The 2024–2029 objective](#) is to strengthen a quality culture for continual improvement of teaching, research, and administration. Procedures are developed by the Quality Assurance Office with process managers, approved by the Board of Directors, and communicated via Board Decisions. Before approval, drafts are circulated on the intranet by the Vice-Rector for Internationalization and Quality Assessment (also [CEAC-U Coordinator](#)); observations are centralized, analyzed, and implemented by the Quality Assurance Office. The [University Charter](#) includes a [Code of Ethics and Deontology](#) and a [Regulation for the Ethics Commission](#), applied by the Ethics Commission. Within the Mechanical Engineering PhD program, quality strategies and procedures, including ethics/deontology, doctoral student evaluation, student feedback, and employer/stakeholder collaboration, are consistently applied and documented through university regulations, Doctoral School plans, evaluation reports, and feedback records.

✓ **Analysis of the state of facts**

Consistent application of quality assurance strategies and procedures drives the continuous improvement of the doctoral program. Feedback mechanisms identify strengths and areas for optimization, while adherence to academic ethics and deontology safeguards the integrity of education and research. Stakeholder involvement, including employers, facilitates alignment of the program with the real requirements of the professional and scientific environment.

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

At IOSUD-UNITBV/SDI, a doctoral student feedback mechanism on PPUA I has operated since 2017 (also in English since 2022). Anonymous online surveys were run annually: 2022 (31 respondents), 2023 (52), 2024 (46), 2025 (42); 2025–2026 is ongoing. The survey covers: C1: Assessment of the PPUA I transversal competences module across six sub-criteria (content, competence relevance, teaching performance, hours/time budget, assessment, SDI organization), rated 1–5 (1 = inadequate, 5 = adequate); C2: Overall usefulness of PPUA I, rated 1–10 (1 = useless, 10 = very useful). Recommendations/proposals for PPUA I (replacements, additions, other suggestions), per Instruction IS-7 ([form F2](#)). Upon graduation, students are surveyed on the entire doctoral stage; 173 [responses](#) were collected in 2021–2025 for quality improvement and alumni collaboration (<https://chestionare-alumni.unitbv.ro/#/selectare>). Faculty and stakeholders are informed of procedural developments via official communications, and community input informs regulations, procedures, and methodologies. Updated, validated documents are published on the university website. Service evaluation results and doctoral feedback are analyzed in CSUD; improvement proposals are included in the [DSUD-IM self-evaluation report](#) approved by CSUD-UNITBV.

✓ Analysis of the state of fact

Consultation with PhD students, supervisors, and other stakeholders contributes to adapting and streamlining Doctoral School procedures. The feedback collected helps identify areas for optimization and strengthens the quality of education and research in Mechanical Engineering.

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

The [University Ethics Committee \(CEU\)](#) is a deliberative, independent body (without legal personality) responsible for upholding university ethics and deontology under the [Code of University Ethics and Deontology \(part of the University Charter\)](#), the [Organizational Regulations](#), and the committee's rules. CEU examines complaints about ethical violations and issues decisions based on case reports prepared by analysis subcommittees; its decisions are submitted to the Board of Directors and the University Senate. CEU publishes an [annual activity summary](#) on the university website. Within the DSU D-IM Doctoral School, CEU helps ensure fair and transparent evaluation of doctoral candidates by screening all theses for similarity using TURNITIN (via the university e-learning platform) before public defense. All committee procedures and decisions are recorded in reports, minutes, and official registers.

✓ Analysis of the state of facts

At the DSUD-IM Doctoral School, adherence to academic and professional ethics is ensured by the University Ethics Commission (CEU), which operates independently under regulations approved by the UNITBV Senate. To date no complaints of ethical breaches have been recorded, reflecting responsible conduct by doctoral supervisors and candidates. All doctoral theses undergo similarity checks using

TURNITIN via the university e-learning platform prior to public defense; these checks help uphold academic integrity and support ongoing improvement of education and research in Mechanical Engineering.

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

The Mechanical Engineering PhD program follows clear [procedures for initiation, monitoring and periodic review](#), in line with current legislation and university rules. These procedures include annual evaluations of doctoral progress, reporting of thesis results, tracking involvement in research projects and participation in academic mobility. Program reviews are conducted with the Doctoral School Council, supervisors and, when relevant, external stakeholders. [Activities](#) are recorded in doctoral annual reports, Doctoral School minutes, individual research plans and [internal regulations](#). Monitoring and evaluation data inform management analyses at program, field, department and faculty levels and underpin improvement measures documented in the [DSUD-IM Doctoral School's annual self-evaluation report](#).

✓ Analysis of the state of facts

The current procedures establish a transparent framework for tracking doctoral students' progress, enabling prompt identification of potential problems and offering support to align individual activities with the program's overall objectives. Engagement by faculty and other stakeholders enhances the field's relevance and academic quality, and this involvement is documented through official records such as doctoral students' annual reports, individual research plans, and Doctoral School minutes.

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.
--------------------------	---

✓ Presentation of the state of facts

In the Mechanical Engineering PhD program, procedures are implemented with the active participation of the Doctoral School management, doctoral supervisors and, when appropriate, external stakeholders such as employers or research partners. This participation takes the form of periodic consultations and involvement in committees and working groups responsible for program review and for assessing doctoral students' progress.

Supporting documentation includes minutes of Doctoral School meetings, doctoral students' progress reports, individual research plans, and correspondence or collaboration agreements with external partners. [The Doctoral School Regulations](#) and [associated methodologies](#) are available online on the [UNITBV website](#).

✓ Analysis of the state of facts

The involvement of internal and external stakeholders ensures a transparent process, facilitates adapting procedures to the real needs of doctoral students, and enhances the academic and practical relevance of the program. Periodic consultations enable problem identification and create opportunities to adjust procedures, thereby contributing to the quality and efficiency of the educational and research process. Going forward, stakeholder participation will be strengthened by digitizing feedback mechanisms, expanding consultations with employers and research partners, and more actively integrating doctoral students into decision-making on procedures and the assessment of academic progress.

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.
--------------------------	---

✓ Presentation of the state of facts

The evaluation of teaching activity within the Mechanical Engineering doctoral field is conducted semiannually, in accordance with the [Methodology for the periodic evaluation of the professional quality of teaching staff](#). Doctoral students' complete questionnaires addressing the quality of teaching and the support provided during the research process. Evaluation results are centralized and analyzed at the institutional level, and the findings are communicated to the teaching staff involved. The process culminates in the formulation of measures to improve teaching activities, thereby enhancing the quality of the doctoral program. [The evaluation outcomes](#) are available for consultation and serve as the basis for decisions on the development of teaching activities.

✓ Analysis of the state of facts

The analysis of the evaluation results reveals the level of doctoral students' satisfaction with the teaching staff's performance and the support provided during coursework and research. This process serves as an objective feedback mechanism that identifies strengths and areas needing improvement, thereby contributing to the maintenance and enhancement of educational quality. From discussions with Doctoral School representatives, it emerged that they intend to strengthen the evaluation process by fully digitizing the evaluation forms, producing analytical reports that offer personalized feedback to faculty, and integrating evaluation results into professional development plans. They also propose increasing doctoral students' participation in the evaluation process and expanding the evaluated indicators to include research activities and doctoral supervision/counseling.

✓ Recommendations

Encourage doctoral students to participate as fully as possible in the evaluation of teaching staff and doctoral supervisors.

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.
--------------------------	---

✓ Presentation of the state of facts

The University systematically collects, processes and analyzes data on its activities and their quality to continuously enhance the information system through the introduction of information technologies. It has adopted a "[Strategy for Digital Transformation in Education, Research and Administration](#)" developed in alignment with national and European strategic documents on the digitalization of education. Within the Mechanical Engineering PhD program, the Doctoral School gathers and centralizes data on doctoral activity, including thesis progress, participation in conferences and research projects, scientific publications, international mobilities, and feedback from faculty evaluations. These data are stored and managed in internal registers and on the university's electronic platform. Supporting documents include doctoral students' annual and progress reports, records of participation in projects and mobilities, individual research plans, and consolidated reports from semesterly faculty evaluations. The procedures and regulations underlying these practices—such as the [Doctoral School Regulations](#) (CSUD) and [the doctoral thesis defense procedure](#)—are available for consultation online.

✓ **Analysis of the state of facts**

The analysis of the collected data enables evaluation of the quality of both the educational process and doctoral students' research activities, identifying strengths and areas requiring improvement. This evidence-based insight supports informed decision-making on adapting research plans and on providing targeted support to help doctoral candidates achieve their academic and scientific objectives. It is also intended to more actively integrate feedback from doctoral students and supervisors into the decision-making process and to develop additional indicators to monitor international mobility, publications and participation in research projects.

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.
----------------------------------	--

✓ **Presentation of the state of facts**

The university provides information about study programs, diplomas, the organization of the teaching process, student services, and other matters of public interest. Access to public information is governed by current legislation and regulated by the ["Access to Information of Public Interest" procedure](#). Institutional actions ensure transparency of services and their quality, primarily through the university's website. The Mechanical Engineering PhD program ensures transparency by publishing online all relevant information about the PhD program: admission procedures, research plans, Doctoral School regulations, evaluation methodologies, and the criteria for awarding related diplomas and certificates. This information is available on the UNITBV website (<https://www.unitbv.ro/cercetare/studii-doctorale.html>), providing easy access for all stakeholders. Supporting documents include the [Doctoral School/CSUD Regulations](#), [admission methodologies](#), and [guidelines for the academic and research progression of doctoral students](#).

✓ **Analysis of the state of facts**

Transparency of information enables doctoral students, prospective candidates, and external stakeholders to promptly access relevant data, facilitating informed decision-making and enhancing confidence in the quality of the doctoral program. Continuous publication and regular updating of information increase the field's visibility and attractiveness at both national and international levels.

The indicator is: fulfilled.

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

✓ **Presentation of the state of facts**

IOSUD-UNITBV ensures [transparency](#) in decision-making by publishing and communicating the resolutions of its management bodies—especially the [Council for Doctoral University Studies \(CSUD-UNITBV\)](#)—in accordance with procedures set out in [internal regulations](#). Decisions are disseminated to the entire university community via official channels (the university website, online platforms, institutional notice boards and email) and are grounded in consultations with academic staff and doctoral students. These processes govern the organization of the doctoral program, admissions, resource allocation, assessment of academic performance, international mobilities and collaborations, ensuring proper and fair application of the rules. External quality evaluation of education is conducted according to the prescribed methodology and performance indicators, and the resulting reports are published on the institution's [website](#).

✓ **Analysis of the state of facts**

Existing documentation and procedures ensure transparency and accountability in decision-making, giving PhD students and other stakeholders clear access to the criteria and reasoning behind decisions.

This fosters trust in the decision-making process and promotes consistent application of rules across the doctoral field.

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.
--------------------------	---

✓ Presentation of the state of facts

UNITBV conducts external evaluations of university programs and fields of study across all cycles (bachelor, master, doctorate) every five years, in accordance with prevailing regulations and with the approval of the University Senate. The Quality Assurance Office coordinates the process following the schedule approved by the Board of Directors, and external assessments are performed by the Romanian Agency for Quality Assurance in Higher Education (ARACIS). The Mechanical Engineering doctoral field actively participates at every stage by preparing [self-evaluation reports](#) and supplying data on doctoral students' academic progress, teaching staff activity, and research outcomes. [The most recent external evaluation of the Doctoral School took place in 2021.](#) Relevant supporting documents include [annual field reports](#), doctoral students' progress reports, and reports from prior evaluations. Applicable procedures and regulations, such as the [Doctoral School and CSUD regulations and the methodologies](#) for evaluating and monitoring doctoral progress, are available for [consultation online](#).

✓ Analysis of the state of facts

The Mechanical Engineering PhD field maintains a strong organizational culture toward external evaluation, meeting legally mandated deadlines and implementing ARACIS procedures at every stage. Active participation by the field enables the identification of strengths and areas for improvement, thereby enhancing the quality of both education and research and ensuring implementation of recommendations from prior evaluations.

The indicator is: fulfilled.

IV. SWOT Analysis

Strengths:	INTERNAL FACTORS ①	Weaknesses:
✓ The Mechanical Engineering doctoral program benefits from faculty with international expertise and visibility. ✓ Laboratories are modern and well-equipped, providing the necessary infrastructure for research activities. ✓ Doctoral students have access to a stimulating learning environment and maintain close, constructive relationships with their supervisors. ✓ The program provides opportunities for national and international collaboration. ✓ International mobilities and co-tutelle theses are supported, contributing to		✓ Some administrative processes are not yet fully digitalized. ✓ The number of international doctoral students and long-term mobilities can be increased. ✓ Additional funding is needed for experimental activities, especially in the early stages of the doctorate. ✓ Strengthening information and counseling for doctoral students is an important aspect to improve.

the program's internationalization and strengthening doctoral students' research skills.		
SWOT analysis		
Opportunities: ✓ There is potential to expand international collaborations and to attract doctoral candidates from abroad. ✓ Developing co-supervised theses with prestigious foreign universities can enhance the program's internationalization. ✓ Strengthening partnerships with industry can generate applied research topics and create funding opportunities. ✓ Full digitalization of processes and adoption of online platforms can improve transparency and efficiency in managing the doctoral program.	EXTERNAL FACTORS	Threats: ✓ International competitiveness may impact the recruitment and mobility of doctoral candidates and senior faculty. ✓ Financial and infrastructural constraints for experimental projects can hinder research progress. ✓ Preserving admission standards must be balanced with attracting a sufficient pool of qualified doctoral students.

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	-
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	-
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	-

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
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	-
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	Periodic evaluation of associate doctoral supervisors and analysis of the possibility of disaffiliating those who have no active doctoral students, do not serve on guidance committees and fail to meet the CNATDCU minimum requirements in force.
6.	I.P.A.3.1.2 The HEI ensures professional and personal development for its staff.	F	-
7.	I.P.A.3.2.1 Recruitment procedures comply with the provisions of the law, and are established and carried out transparently.	F	-
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	-
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	Periodically update the DSUD-IM documentation package (curriculum and course syllabi) by incorporating recommendations from stakeholders (alumni, doctoral supervisors and doctoral students).
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	-
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	-
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	-
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	-
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	F	-

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
	learning needs, the study domain, the study cycle, and the form of organisation of the study programme.		
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.	F	-
16.	I.P.B.5.1.2 Achievement of the learning outcomes is checked in ongoing examinations and study completion exams.	F	-
17.	I.P.B.7.1.1 The organisational component applies the admission procedures.	F	-
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 establishment of support measures to ensure access of vulnerable groups at social and educational risk, including candidates with special educational needs and/or disabilities.	F	-
19.	I.P.B.7.2.1 The organisational component applies the regulations concerning the students' professional activity.	F	-
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	-
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	-
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	-
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	-
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.	F	-
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	-

No.	Performance Indicator	Extent to which it was fulfilled (F/PF/UF)	Recommendations
26.	I.P.C.3.1.1 The organisational component consistently applies the procedures, and proves their impact on quality assurance.	F	-
27.	I.P.C.3.1.2 Members of its own community and other stakeholders are involved in the procedure implementation process.	F	-
28.	I.P.C.4.1.1 The organisational component analyses the results of the students' biannual evaluation of teachers.	F	Encourage doctoral students to participate as fully as possible in the evaluation of teaching staff and doctoral supervisors.
29.	I.P.C.5.1.1 The organisational component systematically collects and analyses data required for the internal quality assurance process.	F	-
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	-
31.	I.P.C.6.1.2 The organisational component ensures transparent decision-making processes.	F	-
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	-

Summary Table of Performance Indicators – Degree of Fulfillment

Domain Rating	Number of Performance Indicators		
	Fulfilled	Partially fulfilled	Unfulfilled
Domain A. Institutional capacity	8	0	0
Domain B. Educational efficacy	14	0	0
Domain C. Quality management	10	0	0
Total	32	0	0

VI. Conclusions

The main conclusions and recommendations from the periodic evaluation visit of the Mechanical Engineering doctoral program, Interdisciplinary Doctoral School, Transylvania University of Braşov, are as follows:

- ✓ In the period since the last external evaluation, significant progress has been made: teaching courses by international specialists; attracting new international teaching staff and doctoral students; co-tutoring theses; participation of Romanian doctoral students in research internships in international institutions; reducing the expulsion rate from over 30% to 18%; increasing the number of doctoral supervisors with seven new staff.

- ✓ The ARACIS Council issued Decision 147/ 28.12.2021 stating that for IOSUD-UNITBV and the doctoral fields Mechanical Engineering, accreditation is maintained.
- ✓ Based on the analyzed information (CVs, ORCID), the ARACIS external evaluation commission found that DSUD-IM doctoral supervisors meet the legal requirements for the positions in the staffing plan; teaching and research activities are supported by administrative and technical staff, ensuring proper program development.
- ✓ At the on-site visit, 34 doctoral supervisors were active in the Mechanical Engineering doctoral fields (22 tenured and 12 associates). For DSUD-IM supervisors, over 90% of the CNATDCU minimum habilitation standards in force were met.
- ✓ At the on-site visit, 51 doctoral students were enrolled in DSUD-IM: 6 with scholarships, 3 without scholarships, 11 part-time (reduced attendance), 23 full-time fee-paying, 8 part-time fee-paying, and 2 international students.
- ✓ Between 2021 and 2025, 16 doctoral theses were completed in the field of Mechanical Engineering.
- ✓ The Mechanical Engineering PhD program (DSUD-IM), within Interdisciplinary Doctoral School, is designed according to expected learning outcomes; it is organized on ECTS and includes learning, research, and assessment activities leading to EQF Level 8 qualification.
- ✓ DSUD-IM has modern research infrastructure and offers research services.
- ✓ Research centers/laboratories are appropriately developed and equipped for advanced research and training experts in DSUD-IM.

Following the completion of the maintaining accreditation procedure, the decision of the evaluation panel is the following:

Maintaining accreditation (MAC)

VII. Annexes

The external evaluation procedure consisted of analyzing the Internal Evaluation Report and its annexes, followed by a two-day on-site visit to the university. Laboratories and teaching spaces were visited, the provided documents were reviewed, and meetings were held with representatives of stakeholders involved in the educational process.

The Internal Evaluation Report submitted to ARACIS was supplemented with the following annexes:

1. Visit schedule
2. Minutes of the meetings