ROMANIAN AGENCY FOR QUALITY ASSURANCE IN HIGHER EDUCATION
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External evaluation report for the setting up (establishment) of a doctoral study domain

Contents

I.   Introduction[1]

This chapter will contain a brief presentation of:

- the context in which this external evaluation report was drafted (**the type of evaluation, the period of the evaluation visit, the composition of the Experts Panel** etc.);
- details about the doctoral school(s) of which the doctoral domain under review will be part (number of doctoral advisors, number of students, institutional context, short history etc.);
- details about the doctoral study domain under review (institutional context);

The context of this document is the internal evaluation report of the doctoral field Environmental Engineering within the Interdisciplinary Doctoral School (SDI). The period of the evaluation visit was between the 19th of October and the 21st of October, 2022, in Brasov, Romania.

The composition of the Experts Panel is shown in the following table.

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[1] When applicable, gendered information will be presented as well.

Programul de studii	Tip dosar/ Înregistrare ARACIS	Persoana de contact de la universitate	Comisia de vizită
Ingineria mediului (IMED-UTBV/343/_ 20.06.2022) D16	*ACR*		**1. MICLE Valer** **Universitatea Tehnică Cluj-Napoca** **(4 vizite efectuate / 0 vizite)**
			2. VOICU Gheorghe - Universitatea "Politehnica" București (0 vizite)
			3. *evaluator internațional* Alberto Coz Fernandez University of Cantabria Spain
			4. Stud. Ioniță Mădălina-Flavia Universitatea din Petroșani (7 vizite efectuate / 0 vizite)
			Rezerva. Vincent Wertz Catholique de Louvain University Belgium

The doctoral university study programmes are organized and conducted within IOSUD-UNITBV, through the Interdisciplinary Doctoral School (SDI) (https://www.UniTBv.ro/cercetare/doctorat-postdoctorat-si-abilitare/despre-scoala-doctorala/echipa-sdi). The **Interdisciplinary Doctoral School (SDI)** is headed by the Director of the doctoral school and the Council of the Interdisciplinary Doctoral School (C-SDI), SDI being integrated into the structure of the Vice-Rectorate for scientific research and informatization. It has 18 doctoral fields, which fall into 6 fundamental fields and 11 branches of science. The SDI has been operational within IOSUD-UNITBV since the 1st of October 2010, having been established by the Decision of the Senate of Transilvania University of Brașov on July 27, 2010.

The SDI is an intra-institutional structure of the Transilvania University of Braşov, constituted as a distinct entity. However, its operation is determined by the university's overall policy, contributing effectively, actively and efficiently to the achievement of this policy. Integrated into the structure of the Vice-Rectorate for scientific research and informatization (https://www.UniTBv.ro/despre-UniTBv/informatii-de-interes-public/organigrama.html), and working according to the UNITBV current strategy, SDI is one of the three important pillars on which university research is grounded.

The complex activity of the doctoral school is directly and indirectly based on the human resources involved in the high-quality training of PhD students, through the advanced university training programme (PPUA) and the individualized research programme per doctoral student, but also by providing the necessary support activities, from admission and enrolment to completion and public defence of doctoral theses. Thus, the human resource involved includes doctoral supervisors

(https://www.UniTBv.ro/cercetare/doctorat-postdoctorat-si-abilitare/despre-scoala-doctorala/domenii-de-doctorat-si-conducatori), tenured academic teaching staff for the disciples taught within PPUA I, members of the advisory boards and the administrative team of SDI consisting of the SDI secretariat (2 secretaries) and the director of SDI.

The Research infrastructure available to SDI consists mainly of the material base of the Development Research Institute (ICDT) of Transilvania University of Brașov (https://icdt.UniTBv.ro/ro/despre-noi.html), to which the research spaces and infrastructure of the various specialized laboratories in the faculties are part of.

The 11 buildings of the ICDT institute currently house 30 research centres (https://icdt.UniTBv.ro/ro/centre-de-cercetare.html), have high energy autonomy and concentrate a modern and complex research infrastructure consisting of integrated lines of high-tech equipment for advanced research in the field of sustainable development.

Among all doctoral fields, the main objective of the **environmental engineering programme** is the training of specialists at the highest level of education (EQF 8) in the field of Environmental Engineering. The secondary objectives of the PhD field in Environmental Engineering are:

• creating the most advanced and specialized skills and techniques;

• solving critical problems in research and/or innovation;

• developing, expanding and redefining existing knowledge;

• respect for ethics, scientific and professional integrity.

Under the Code of Doctoral Studies (HG 681/29.06.2011), which has been adopted and applied in the institutional regulations, the doctoral programme Environmental Engineering is carried out within the Interdisciplinary Doctoral School, under the coordination of a doctoral supervisor, and includes: (i) a training programme based on advanced university studies PPUA (the year I); (ii) an individual scientific research programme (years II and III for all fields except the field of Medicine, where it takes place in years II, III, IV). The programmes focus on an active learning model, the acquisition of transversal and specialized competencies necessary for the doctoral academic level.

Three PhDs qualified in the field of Environmental Engineering, Prof. Dr Andronic Luminița, Prof. Dr Enesca Alexandru and Prof. Dr Isac Luminița, are affiliated starting on July 24, 2020, to the Interdisciplinary Doctoral School of Transilvania University of Brașov, according to the Senate Decision no. 6/24 July 2020 (https://www.UniTBv.ro/documente/despre-unitbv/regulamente-hotarari/hotarari-senat/HS_nr_6_din_24.07.2020.pdf).

The research activities specific to Environmental Engineering are carried out in Product Design. Mechatronics and Environment Department, as well as in the Research Center "Renewable energy and recycling systems" (https://icdt.UNITBV.ro/ro/centre-de-cercetare/sisteme-de-energii-regenerabile-si-reciclare.html) within the Research-Development Institute (ICDT).

II. Methods used

This chapter will cover the methods and tools used in the external evaluation process before and during the evaluation visit, including at least:

- Review of the Internal evaluation report for the doctoral study domain under review and its annexes;
- Review of the documents provided by the IOSUD in physical format during the evaluation visit (if such documents were requested);
- Review of the documents, data and information available on the website of the IOSUD/the Doctoral School(s), in electronic format;
- Visiting the buildings of the institution, including (an indicative and non-exhaustive list, may change according to the context): classrooms; laboratories; the institution's library; the Career Counselling and Guidance Centre; lecture halls for students; student residences; student cafeteria; sports facilities, etc.;
- Meeting/discussions with members of the management of the Doctoral School where the doctoral study domain under review will operate;
- Meeting/discussions with doctoral advisors in the doctoral study domain under review;
- Meeting/discussions with representatives of the various structures of the IOSUD/Doctoral School where the doctoral study domain under review is operating: the Council of the Doctoral School, the University Senate, the Board of Directors, the Evaluation and Quality Assurance Commission, the Quality Assurance Department, the Ethics Commission (including with the student representatives of these structures); the Career Counselling and Guidance Centre; student organizations; secretariats; various departments / administrative offices (Social/Student residences-Cafeterias etc.), etc.;

In the following table, a summary of the main evaluation is shown. All documents were submitted to the evaluators before the activities, including all annexes and all of the data about the Transylvania University of Brasov, the doctoral school and the environmental engineering programme.

Interval orar Hour	Activitate / *Activity*	Participanți / *Participants*	Observații/ Locație *Observations/ Location*
Miercuri / *Wednesday*, 19.10.2022			
12:00-12:30	**Întâlnire organizatorică a comisiei de experți evaluatori** Organizational meeting of the panel evaluators	- Membrii comisiei de experți evaluatori ARACIS / ARACIS panel members	*Address: Council Room, 1st floor, Rectorat Building, Eroilor No. 29, Brasov.* Participants: - ARACIS panel members
12:30-13:00	**Întâlnirea comisiei de experți evaluatori cu reprezentanții conducerii instituției evaluate și ai CSUD** *Panel evaluators` meeting with representatives of the institution and of the Council for Academic Doctoral Studies (CSUD)*	- Membrii comisiei de experți evaluatori ARACIS / ARACIS panel members - Reprezentanți ai conducerii universității / *Representatives of the University's management* - Reprezentanți ai CSUD și ai școlii doctorale / *Representatives of the CSUD and of the Doctoral School* - Persoana de contact / *The contact person*	*Address: Council Room, 1st floor, Rectorat Building, Eroilor No. 29, Brasov.* Participants: - ARACIS panel members - Prof. Dr. Ing. Lache Simona - Prof. Dr. Ing. Alexandru Catalin - Prof. Dr. Arhire Mona - Prof. Dr. Ing. Jaliu Codruta - Prof. Dr. Andronic Luminita
13:00-14:00	Pauză de prânz / Lunch break		
14:00-15:00	**Întâlnirea comisiei de experți evaluatori cu responsabilul domeniului de studii universitare de doctorat evaluat și cu echipa care a realizat raportul de evaluare internă** *Panel evaluators` meeting with the contact person for the doctoral study domain under review and the team who drafted the internal evaluation report*	- Membrii comisiei de experți evaluatori ARACIS / ARACIS panel members - Reprezentanți ai instituției evaluate / University's representatives	*Address: Univesitatii street, no.1, Room FI12, Building F* Participants: - ARACIS panel members - Prof. Dr. Andronic Luminita - Pof. Dr. Isac Luminita
15:00-17:00	**Vizitarea bazei materiale didactice și de cercetare** *Visiting the educational and research infrastructure*	- Membrii comisiei de experți evaluatori ARACIS / ARACIS panel members - Reprezentanți ai instituției evaluate / University's representatives	Address 1: Univesitatii street, no.1, Building F - educational and research infrastructure Address 2: Institutului street, No. 10, Brasov, Renewable Energy Systems and Recycling Centre - research infrastructure Participants: - ARACIS panel members - Prof. Dr. Andronic Luminita - Prof. Dr. Isac Luminita - Conf. Dr. Cristina Cazan
Joi / *Thursday*, 20.10.2022			
9:00-9:30	**Întâlnire tehnică a comisiei de evaluare** *Panel evaluators` technical meeting*	- Membrii comisiei de experți evaluatori ARACIS / ARACIS panel members	*Address: Univesitatii street, no.1, room FI12, Building F* Participants: - ARACIS panel members
9:30-10:00	**Întâlnirea membrilor comisiei de experți evaluatori cu responsabilul domeniului de studii universitare de doctorat evaluat** *Panel evaluators` meeting with the contact person for the doctoral study domain under review*	- Membrii comisiei de experți evaluatori ARACIS / ARACIS panel members - Reprezentanți ai instituției evaluate / University's representatives	*Address: Univesitatii street, no.1, room FI12, Building F* Participants: - ARACIS panel members - Prof. Dr. Andronic Luminita
10:00-11:00	**Întâlnirea echipei de evaluare cu personalul didactic aferent domeniului evaluat**	- Comisia de evaluare ARACIS / *ARACIS panel members* - Cadre didactice care au calitatea de conducător de	*Address: Univesitatii street, no.1, room FI12, Building F* Participants: - ARACIS panel members

Interval orar Hour	Activitate / *Activity*	Participanți / *Participants*	Observații/ Locație *Observations/ Location*
	Panel evaluators` meeting with the academic staff corresponding to the doctoral study domain	doctorat / *Doctoral coordinators*	- Prof. Dr. Andronic Luminita Prof. Dr. Isac Luminita
11:00 - 12:00	**Întâlnirea echipei de evaluare cu membrii Comisiei pentru Evaluarea și Asigurarea Calității (CEAC) / Departamentul de asigurare a calității** *Panel evaluators` meeting with the Commission for Quality Evaluation and Assurance (CEAC) members / Quality Assurance Department*	- Membrii comisiei de experți evaluatori ARACIS / *ARACIS panel members* - Reprezentanți ai instituției evaluate / *University's representatives*	*Address: Council Room, 1st floor, Rectorat Building, Eroilor No. 29, Brasov* Participants: - ARACIS panel members - Prof. Dr. Ing. Scutaru Luminita
12:00 - 13:00	**Întâlnirea echipei de evaluare cu membrii Consiliului școlii doctorale în cadrul căreia va funcționa domeniul evaluat** *Panel evaluators` meeting with Doctoral Schools Council (CSD) members*	- Membrii comisiei de experți evaluatori ARACIS / *ARACIS panel members* - Membrii CSD / *CSD's members*	*Address: Council Room, 1st floor, Rectorat Building, Eroilor No. 29, Brasov* Participants: - ARACIS panel members - Prof. Dr. Arhire Mona - 2-3 CSD members
13:00- 14:00	Pauză de prânz / Lunch break		
14:00- 15:00	**Întâlnirea echipei de evaluare cu membrii Comisiei de Etică a instituției de învățământ superior** *Panel evaluators` meeting with the members of the Ethics Commission*	- Membrii comisiei de experți evaluatori ARACIS / *ARACIS panel members* - Membrii Comisiei de Etică / *Ethics Commission members*	*Address: Univesitatii street, no.1, room FI12, Building F* Participants: - ARACIS panel members - Conf. Dr. Cristian Teresneu
15:00- 16:00	**Întâlnirea echipei de evaluare cu directorii/ responsabilii centrelor/ laboratoarelor de cercetare aferente domeniului de studii universitare de doctorat evaluat** *Panel evaluators` meeting with the Directors/ persons in charge of the research centers/laboratories within the doctoral study domain*	- Membrii comisiei de experți evaluatori ARACIS / *ARACIS panel members* -Directorii centrelor / laboratoarelor de cercetare / *Directors of research centers/laboratories*	*Address: Univesitatii street, no.1, room FI12, Building F* Participants: - ARACIS panel members - Prof. Dr. Andronic Luminita - Pof. Dr. Isac Luminita - Prof. Dr. Ing. Anca Duta
16:00- 18:00	Derularea activităților specifice comisiei de experți evaluatori și efectuarea de consemnări în proiectul raportului de evaluare externă. *Carrying out the specific activities of the panel evaluators and making entries in the draft of the external evaluation report.* Dacă se consideră necesare, pot avea loc întâlniri suplimentare, spre exemplu cu / *If deemed necessary, additional meetings may be held, for example with:* • reprezentanți din Senatul universitar (inclusiv studenți); / *representatives from the University Senate (including students);* • reprezentanții organizației / organizațiilor studențești; / *representatives of the student organization / organizations;* • reprezentanți ai Centrului de Consiliere și Orientare în Carieră (CCOC); / *representatives of the Career Counseling and Guidance Center (CCOC);* • reprezentanți ai bibliotecii instituției de învățământ superior; / *representatives of the library of the higher education institution;*	- Membrii comisiei de experți evaluatori ARACIS / *ARACIS panel members* - Reprezentanți ai instituției evaluate / *University's representatives*	*Address: Univesitatii street, no.1, room FI12, Building F* Participants: - ARACIS panel members

Interval orar Hour	Activitate / *Activity*	Participanți / *Participants*	Observații/ Locație *Observations/ Location*
	• reprezentanți ai centrelor/laboratoarelor de cercetare din domeniul școlii / școlilor doctorale sau din domeniul evaluat; / *representatives of research centers / laboratories in the field of the doctoral school / schools or in the evaluated field;* • reprezentanți ai direcției cămine-cantine (sau echivalentă) / *representatives of the dormitory-canteen department (or equivalent).*		
	Vineri / *Friday*, 21.10.2022		
09:00-10:00	**Întâlnirea membrilor comisiei de experți evaluatori cu responsabilul domeniului de studii universitare de doctorat evaluat** *Panel evaluators` meeting with the contact person for the doctoral study domain under review*	- Membrii comisiei de experți evaluatori ARACIS / *ARACIS panel members* - Reprezentanți ai instituției evaluate / *University's representatives*	*Address: Univesitatii street, no.1, room FI12, Building F* Participants: - ARACIS panel members - Prof. Dr. Andronic Luminita
10:00 - 12:00	Derularea activității comisiei de experți evaluatori (inclusiv continuarea anumitor activități începute/stabilite în ziua precedentă, analiza documentelor suplimentare puse la dispoziție de reprezentanții instituției supuse evaluării, efectuarea de consemnări în proiectul raportului de evaluare externă sau derularea unor întâlniri cu reprezentanți ai instituției supuse evaluării). / *Carrying out the work of the panel evaluators (including the continuation of certain activities started / established in the previous day, analysis of additional documents provided by the representatives of the institution under evaluation, making notes in the draft external evaluation report or holding meetings with representatives of the institution under evaluation)* . Discuții referitoare la elaborarea raportului de evaluare externă al comisiei de experți evaluatori. / *Discussions on the preparation of the external evaluation report of the panel evaluators.*	- Membrii comisiei de experți evaluatori ARACIS / *ARACIS' panel members* - Reprezentanți ai instituției evaluate / *University's representatives*	*Address: Univesitatii street, no.1, room FI12, Building F* Participants: - ARACIS panel members
12:00-13:00	Întâlnirea membrilor comisiei de experți evaluatori cu reprezentanții instituției evaluate pentru comunicarea concluziilor procesului de evaluare *Panel evaluators` meeting with representatives of the institution under review to discuss on the conclusions of the evaluation process.*	- Membrii comisiei de experți evaluatori ARACIS / *ARACIS panel members* - Reprezentanți ai instituției evaluate / *University's representatives*	*Address: Univesitatii street, no.1, room FI12, Building F* Participants: - ARACIS panel members - Prof. Dr. Andronic Luminita - Pof. Dr. Isac Luminita - Prof. Dr. Ing. Jaliu Codruta

III. Analysis of ARACIS's performance indicators

Domain A. INSTITUTIONAL CAPACITY

Transilvania University of Braşov (UNITBV) organizes doctoral studies within the Institution Organizing Doctoral Studies – Transilvania University of Braşov (IOSUD-UNITBV). The doctoral university study programmes are organized and conducted within IOSUD-UNITBV through the Interdisciplinary Doctoral School (SDI). The organization and operation of SDI, as well as the principles of organization, development and completion of doctoral studies at IOSUD-UNITBV, are established through the Regulations of the Interdisciplinary Doctoral School.

The organization and operation of the administrative structures at IOSUD-UNITBV (Council for Doctoral University Studies - CSUD and the Council of the Interdisciplinary Doctoral School – C-SDI), including their structure, are regulated through the Regulations on the organization and conduct of doctoral and postdoctoral studies. The members of CSUD and C-SDI, doctoral supervisors, must meet the minimum and mandatory standards for the award of the habilitation degree, specific to the field in which they have the right to supervise doctorates, in force on the date of their election or designation as members of CSUD / C-SDI. In IOSUD-UNITBV, the director of the Council of the Interdisciplinary Doctoral School (C-SDI) is appointed to comply with Art. 14 par. (9) of the Code of Doctoral Studies, approved by the Government Decision (HG) no. 681/2011. The other members of C-SDI, PhD supervisors and PhD students, are elected based on the Methodology of electing the members of the Council of the Interdisciplinary Doctoral School.

The Methodology for the admission to doctoral studies is drafted every year for each admission session. For the academic year 2022-2023, the admission methodology was proposed by C-SDI, endorsed by CSUD through the Decision no. 114 of 29.03.2022 and approved by the Senate through the Decision no. 34 of 20.04.2022, being available for consultation on the webpage of IOSUD-UNITBV (https://www.unitbv.ro/documente/despre-unitbv/regulamente-hotarari/regulamentele-universitatii/studenti/Metodologie_admitere_doctorat_20.04.2022.pdf).

According to the legal requirements, IOSUD-UNITBV has developed mechanisms for recognizing the quality of doctoral supervisor and equivalence of the Doctorate obtained in other states.

Criterion A.1. Administrative and managerial institutional structures, and financial resources

Standard A.1.1. The institution organising doctoral studies (IOSUD) has implemented the effective functioning mechanisms provided for in the specific legislation on the organisation of doctoral studies.

The methodologies are available for consultation on the webpage of IOSUD-UNITBV (https://www.unitbv.ro/documente/despre-unitbv/regulamente-hotarari/regulamentele-universitatii/angajati/Metodologie_recunoastere_calitate_conducator_doctorat_20.04.2022.pdf, respectively https://www.UniTBv.ro/documente/despre-UniTBv/regulamente-hotarari/regulamentele-universitatii/angajati/Metodologia_recunoastere_titlu_de_doctor_15.02.2017.pdf). The management structures of IOSUD-UNITBV and of the Interdisciplinary Doctoral School operate according to the Regulations on the organization and conduct of doctoral and postdoctoral studies, being constituted according to the legal provisions in force. The current mandate of CSUD corresponds to the period 2020-2024 (4 years), while the C-SDI mandate in the office is for the period 2021-2026 (5 years).

The Council of the Interdisciplinary Doctoral School (C-SDI) has the structure of the web page (https://www.UniTBv.ro/cercetare/doctorat-postdoctorat-si-abilitare/despre-scoala-doctorala/echipa-sdi). The contract of doctoral study and other documents are available for consultation on the webpage of IOSUD-UNITBV (https://www.UniTBv.ro/cercetare/doctorat-postdoctorat-si-abilitare/despre-scoala-doctorala/metodologii-contracte-si-rapoarte/contracte). Proposals of the subjects for training programmes based on advanced academic studies (PPUA) are analysed and approved is regulated by the Specific Instruction IS-7 of the SDI Regulations.

Performance indicator A.1.1.1. The existence of specific regulations and their application at the level of the doctoral school that the doctoral domain is a part of:
a) the internal regulations of the doctoral school;
b) the methodology for conducting elections for the position of director of the Council of doctoral school (CSD), as well as elections by the students of their representative in the CSD, and evidence that such elections were conducted;
c) methodologies for organising and conducting doctoral studies (admission of doctoral students, completion of doctoral studies);
d) existence of mechanisms for recognising the status of a doctoral advisor and the equivalence of a doctoral degree obtained abroad;
e) functional management structures (Council of the doctoral school), including proof of the regular frequency of convening their meetings;
f) the contract for doctoral studies;
g) internal procedures for the analysis and approval of proposals regarding the training for doctoral study programmes based on advanced academic studies.

The indicator is fulfilled. There are enough regulations and mechanisms in the doctoral school for carrying out the environmental engineering domain.
Recommendations: 1. Specific regultations to take into account not only scientific papers for the final thesis but also patents with industry in order to reinforce the research, development and innovation with the industry.

Performance indicator A.1.1.2. The doctoral school's Regulations include mandatory criteria, procedures and standards concerning the aspects specified in art. 17, para. (5) of Government Decision no. 681/2011 on the approval of the Code of Doctoral Studies, as further amended and supplemented.

In IOSUD-UNITBV, the requirements indicated in Art. 17 par. (5) of the Code of doctoral studies are regulated by a set of specific instructions, made by C-SDI and approved by CSUD, which are included in the Appendix to the Regulations of the Interdisciplinary Doctoral School. The instructions in the SDI Regulations are included in the quality management system at the Transilvania University of Brașov, being available on the webpage of IOSUD-UNITBV (https://www.UniTBv.ro/cercetare/doctorat-postdoctorat-si-abilitare/despre-scoala-doctorala/metodologii-contracte-si-rapoarte/metodologii). The main instructions are related to:

- Instruction IS-1/2 on revoking the doctoral supervisors' affiliation to SDI
- Instruction IS-2 on changing the doctoral supervisor
- Instruction IS-3 on the mediation and settlement of the conflicts related to the doctoral activity
- Instruction IS-4 on the equivalence/recognition of the advanced university training programme and of the scientific research programme
- Instruction IS-5 on conducting the PhD students' activity
- Instruction IS-6 on the interruption, extension of doctoral studies and on granting the period of grace
- Instruction IS-7 on decision-making regarding the structure and content of PPUA
- Instruction IS-8 on the completion and public defence of doctoral theses
- Prevention of fraud in scientific research, including of plagiarism

The indicator is fulfilled.
I do not have any recommendation

Standard A.1.2. The IOSUD has the necessary logistic resources to carry out the mission of the doctoral studies.

Since 2005, the doctoral students and their academic career have been electronically recorded in an Excel databases by years of enrolment.

Performance indicator A.1.2.1. The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic background.

Each excel database (file), corresponding to one year of enrolment, comprises generically named separate sheets that include the candidates registered for admission, the admitted candidates, the enrolled doctoral students, the grades obtained within PPUA, the doctoral students in the training stage, the thesis defences, the expelled doctoral students. The last 3 lists (the doctoral students in the training stage, the thesis defences, the expelled doctoral students) are dynamic and are subject to changes in time according to the list of enrolled doctoral students, depending on their academic route.

A dedicated computer system of the online electronic platform type is currently being implemented in order to modernize and streamline the record system of doctoral students and their route, while ensuring the possibility of direct access to information regarding the personal situation for doctoral candidates and doctoral supervisors, without jeopardizing the security of the stored data or breaching the regulations on the protection of personal data and ensuring confidentiality. This platform dedicated to the record of doctoral students can be seen here: http://doctorat.UniTBv.ro/. The platform is designed with 3 levels of password access and has at least two benefits: (i) quick and direct access to information for doctoral students and doctoral supervisors (relieving tasks and optimizing the SDI secretariat's time) and (ii) data verification by the doctoral students themselves, respectively avoidance / quick correction of possible material inconsistencies / errors.

The indicator is fulfilled. There is an on-line electronic platform system for all of the academic part of the PhD students.
Recommendations: 1. **To include more English language in the system.**

Performance indicator A.1.2.2. The existence and use of an appropriate software and evidence of its use to verify the percentage of similarity in all doctoral theses.

There are two ways to verify the percentage of similarity in all doctoral theses:
- Sistemantiplagiat.ro (https://sistemantiplagiat.ro/) - in the period July 2016 – to June 2019
- Turnitin software (https://www.turnitin.com/) has been accessible through the university's e-learning platform (https://elearning.UniTBv.ro/) – from July 2019 to date. In addition, there is any statistical data regarding the analysis of doctoral theses during the reporting period. Between July 2016 and July 2019, 127 doctoral theses from the actively managed doctoral fields were analysed by SDI with sistemantiplagiat.ro software, and Between July 2019 and 31.12.2020, 68 doctoral theses publicly defended during the reporting period (until 31.12.2020) were analysed by SDI with Turnitin software. For all the analysed theses (with both software applications), based on the calculated coefficients and on the thorough analysis of the identified similar fragments, the doctoral supervisors' resolutions certified the originality of those theses. In a small number of cases (less than 5%) the doctoral supervisors requested the doctoral students to revise the text in order to correct some aspects related to properly marking citations and indicating the bibliographic sources; however, these observations were not related to suspicions of plagiarism.

The indicator is fulfilled. There are different software (Sistemantiplagiat.ro, Turnitin) to verify similarities and statistical data of the analysis of the thesis
Recommendations: 1. **To include more English language in the software.**

Criterion A.2. Research infrastructure
Standard A.2.1. The IOSUD has a modern research infrastructure to support the performance of specific doctoral study activities.

All research infrastructure is based not only on the Transilvania University of Brasov facilities but also in the researach center.

Performance indicator A.2.1.1. The venues and the material equipment available to the doctoral school enable the research activities in the evaluated domain to be carried out, in line with the assumed mission and objectives (computers, specific software, equipment, laboratory equipment, library, access to international databases etc.). The research infrastructure and the provision of research services are presented to the public through a specific platform. The research infrastructure described above, which was purchased and developed within the past 5 years will be presented distinctly.

The research activities specific to the PhD in Environmental Engineering are in accordance with the mission and objectives assumed and are based on the research infrastructure offered by the Product Design, Mechatronics and Environment Department and the Research Center "Renewable Energy Systems and Recycling" ([https://icdt.unitbv.ro/ro/centre-de-cercetare/sisteme-de-energii- regenerabile-si-reciclare.html](https://icdt.unitbv.ro/ro/centre-de-cercetare/sisteme-de-energii-regenerabile-si-reciclare.html)) within the Research-Development Institute (ICDT). The research activity will be carried out in laboratories equipped with a modern infrastructure consisting of integrated lines of equipment for advanced research in Environmental Engineering. PhD students have access both to the infrastructures of the ICDT research centre https://icdt.unitbv.ro/ro/centre-de-cercetare/sisteme-de-energii-regenerabile-si-reciclare/infrastructură.html, and of the Product Design, Mechatronics and Environment Department acquired in the last 5 years from the funds of research projects coordinated by PhD supervisors in the field of Environmental Engineering. In addition, PhD students have access to the documentation resources offered by the Faculty of Product and Environmental Design and the library of the Transilvania University of Brașov (https://www.unitbv.ro/biblioteca.html), including national and international databases. The research infrastructure and the offer of research services are presented publicly through the ICDT website for each research centre (https://icdt.unitbv.ro/ro/) and through the EERIS platform (https://erris.gov.ro/RD-Institute-of-the-Transilv).

The indicator is totally fulfilled. The infrastructure of the environmental engineering PhD domain is more than enough for the research in all of the areas within the laboratories of the University and the Research Centre "Renewable Energy Systems and Recycling". All information is on the web site.

Recommenda tions:
1. **Try to increase the use of all of the infrastructure in order to do some external analysis apart from the research and teaching activities. This can be useful to increase the possibilities of collaboration with the industry in the main areas of the programme.**
2. **Try to increase at institutional level, the funding for the mantenance of all of the infrastructure.**

Criterion A.3. Quality of human resources
Standard A.3.1. For each domain, there is qualified staff having the experience required for carrying out the doctoral program.

The scientific research programme for the Environmental Engineering doctoral field is carried out under the coordination of 3 doctoral/PhD supervisors with mor than enough experience and criteria. In addition, other supervisors participate in the PhD programme.

Performance indicator A.3.1.1. Minimum three doctoral thesis advisors work within thatdoctoral domain, and at least 50% of them (but no less than three) meet the minimum standards of the National Council for Attestation of University Degrees,

Diplomas and Certificates (CNATDCU) in force at the time when the evaluation is carried out, which standards are required and mandatory for obtaining the enabling certification.

All three PhD coordinators received habilitation in the Environmental Engineering field. Prof. Dr Chem. Luminița ANDRONIC and Prof. Dr. Chem. Alexandru ENEȘCA are members of the Environmental Engineering of the National Council for Attestation of University Degrees, Diplomas and Certificates (CNATDCU) for the period 2020-2024. All three doctoral supervisors meet the minimum standards of compliance and are mandatory for obtaining the certificate of habilitation.

The indicator is totally fulfilled. There are threeso many coordinators with the minimum standars of the National Council for Attestation of University Degrees, Diplomas and Certificates and the majority of them are teachers in the faculties related to the programme.

Recommenda tions:
1. **Try to use more different criteria apart from the scientific research related to patents and other knowledge transfer for the minimum standards of the National Council for Attestation of University Degrees, Diplomas and Certificates in order to reinforce the collaborations with different institutions in the research and to increase the innovation.**

Performance indicator* A.3.1.2. At least 50% of the doctoral advisors in the doctoral domain under review are tenured professors within the IOSUD and have a full-time employment contract for an indefinite period.

The three titular doctoral supervisors in the Environmental Engineering doctoral field carry out their activity within the IOSUD-Transilvania University of Brașov, representing 100%.

The indicator is totally fulfilled. 100% of all doctoral coordinators have full-time employment contract at the University.

Recommendations:
I do not have any recommendation.

Performance indicator A.3.1.3. The study subjects in the education programme based on advanced higher education studies pertaining to the doctoral domain are taught by teaching staff or researchers who are doctoral thesis advisors / certified

doctoral thesis advisors, professors / CS I or associate professors / CS II, with proved expertise in the field of the study subjects they teach, or other specialists in the field who meet the standards established by the institution in relation with the aforementioned teaching and research functions, as provided by the law.

The disciplines included in the training programme of PhD students in the Environmental Engineering field are supported based on the SDI offer by 8 teachers, of which 6 are professors and 2 are associate professors. All 8 teachers have proven expertise in the field of subjects taught, 6 teachers are PhD supervisors and are tenured at the Transilvania University of Brașov. Of the 8 teachers, 7 have individual employment contracts for an indefinite academic appointment and 1 in an hourly payment regime.

The indicator is totally fulfilled. There are 8 teachers in the fields of the environmental engineering domain and 6 of them are Professors.
Recommenda tions: 1. **Try to increase the co-tutelage with specialists in industries related to the environmental engineering topics.** 2. **Try to increase the co-tutelage with more international researchers.**

Standard A.3.2. The doctoral advisors within the doctoral domain are carrying out a scientific activity that is visible at international level.

All doctoral advisors have activities at international level.

Performance indicator A.3.2.1. At least 50% of the doctoral thesis advisors in the evaluated domain have at least 5 Web of Science- or ERIH-indexed publications in magazines of impact, or other achievements of relevant significance for that domain, including international-level contributions that indicate progress in scientific research - development - innovation for the evaluated domain. The aforementioned doctoral thesis advisors enjoy international visibility within the past 5 years, consisting of: membership on scientific boards of international publications and conferences; membership on boards of international professional associations; guests in conferences or expert groups working abroad, or membership on doctoral commissions at universities abroad or co-leading with universities abroad. For Arts and Sports and Physical Education Sciences, doctoral thesis advisors shall prove their international visibility within the past 5 years by their membership on the boards of professional associations, membership in organising committees of arts events and international competitions, membership on juries or umpire teams in artistic events or international competitions.

Out of the total of 3 PhD supervisors affiliated to SDI at the time of preparing the self-evaluation report in the field of Environmental Engineering (according to Table A.3.1.1), all PhD supervisors meet at least one of the two subcomponents/requirements of the indicator: (i) minimum 5 publications indexed Web of Science or ERIH in journals with impact factor or other achievements with relevant significance, depending on the specifics of the doctoral field; and (ii) international visibility in the last 5 years.

The indicator is totally fulfilled. There are 3 coordinators with more than enough scientific publications, projects, international conferences and so on.
Recommenda tions: 1. **Try to increase the Social Media of the research group in order to increase the visibility at all levels.**   2. **Try to increase the possibilities to have double-degree PhD programmes with other Universities from Romania and abroad**

Performance indicator * A.3.2.2. At least 50% of the doctoral thesis advisors in a specific doctoral study domain continue to be active in their scientific field, and acquire at least 25% of the score requested by the minimal CNATDCU standards in force at the time of the evaluation, which are required and mandatory for acquiring their enabling certificate, based on their scientific results within the past 5 years.

Based on the scientific results of the last 5 years, all doctoral supervisors meet the required score for this criterion.

The indicator is totally fulfilled. The advisors are continuosly being active in research and innovation in the topics of the environmental engineering domain.
Recommenda tions: 1. **Try to reinforce the collabroation with industry.**   2. **Try to increase the courses and units at the University related to international projects in order to increase the training of the personnel at the University in the preparation of proposals.**   3. **Try to increase the possibilities to have double-degree PhD programmes with other Universities from Romania and abroad**

Domain B. EDUCATIONAL EFFECTIVENESS.

Among all doctoral fields, the main objective of the environmental engineering programme is the training of specialists at the highest level of education (EQF 8) in the field of Environmental Engineering. The secondary objectives of the PhD field in Environmental Engineering are:
• creating the most advanced and specialized skills and techniques;
• solving critical problems in research and/or innovation;
• developing, expanding and redefining existing knowledge;
• respect for ethics, scientific and professional integrity.

Criterion B.1. The number, quality and diversity of the candidates enrolled for the admission contest

Standard B.1.2. Candidates admitted to doctoral studies demonstrate academic, research and professional performance.

Admission to doctoral studies is based on competition, according to the Admission Methodology updated annually and approved by the Senate (https://www.UniTBv.ro/documente/cercetare/doctorat-postdoctorat/metodologii-rapoarte/Metodologia_de_admitere_la_doctorat_2021.pdf).

Performance indicator* B.1.2.1. Admission in the doctoral study programmes is based on selection criteria including the academic, research and professional performance of the candidates; their interest for scientific or artistic/sports research; publications in the domain, and a proposal of a research subject. Interviewing the candidate is mandatory as part of the admission procedure.

Information on the competition themes and on the conduct of the competition is published on the website to inform the candidates (https://www.UniTBv.ro/cercetare/doctorat-postdoctorat-si-abilitare/admitere/tematica-admitere.html). At the specialized examination, each member of the competition committee assesses the candidate's level of knowledge with grades from 1 to 10 (based on the consultation of the specialized literature) of the relevant issues for that specialization, as well as the candidate's level of knowledge of recent research related to the theme of the doctoral thesis. In addition, the interview also aims to assess the candidate's ability to take theoretical, experimental and methodological initiatives on the proposed research (Art.23) and his/her previous experience in research. The average admission grade to the doctorate is obtained as the arithmetic mean between: (i) the average grade obtained in the specialized exam (the arithmetic mean of the grades given by the admission committee members); (ii)

the average grade obtained in the dissertation examination (where applicable) and (iii) the average grade obtained in the bachelor's final exam (Art.28). According to specific criteria, the average admission grade is a criterion for the candidates' admission and ranking in the distribution of places put up for competition (budgeted and paid) and doctoral scholarships. Candidates who obtain an average grade lower than 8 (eight) in the specialized exam are rejected (Art.29). The admission criteria ensure the selection of the best candidates for all doctoral fields and fair competition for their access to budgeted places and scholarships. The results of the doctoral admission competition are published on the website (https://www.UniTBv.ro/cercetare/doctorat-postdoctorat-si-abilitare/admitere/rezultate-admitere.html).

The indicator is fulfilled. The admission fulfills all of the criteria given in the indicator and the competition is published on the website.
Recommenda tions: 1. **Try to increase the possibilities of PhD students working in companies relate to the field of environmental engineering.**

Criterion B.2. The content of the doctoral programs
Standard B.2.1. The training program based on advanced academic studies is appropriate to improve the doctoral students' research skills and strengthen ethical behaviour in science.

The training programme based on advanced university studies comprises two distinct modules (parts) intended for the formation of transversal competencies useful in the successful completion of the doctoral program in the field of Environmental Engineering (module PPUA 1), respectively for acquiring specialized knowledge and training skills in direct correlation with the doctoral topic approached by each PhD student within the doctoral field and established together with the supervising commission (module PPUA 2).

Performance indicator B.2.1.1. The training programme based on advanced academic studies includes at least 3 disciplines relevant for the scientific research training of doctoral students, out of which at least one discipline focuses on the in-depth study of research methodology and/or statistical data processing.

The Advanced University Training Program (PPUA 1) in the Environmental Engineering field includes six general disciplines for the Engineering Fields provided in the Curriculum, relevant for the scientific research training of PhD students. Among

the compulsory disciplines, 3 are general for engineering fields: Management and resources in research projects, Research results recovery, Ethics and academic integrity. The curriculum also contains two packages of two optional disciplines: Package I, which is intended for statistical data processing Statistics in research or Acquisition and processing of experimental data, and Package II, Creativity and Inventiveness or Intellectual Property. The Curriculum also provides a common discipline for Engineering Fields, English language in science for beginners, intermediate and advanced levels. For the Environmental Engineering doctoral field, the curriculum contains at least three disciplines relevant for the training in scientific research of PhD students, of which one discipline is intended for statistical data processing.

The indicator is fulfilled. The indicator is fulfilled. The PhD students have 2 modules, one of them with obligatory subjects and the other one with optional courses.
Recommenda tions: 1. **Try to increase the number of optional in the PhD programme, especially in subjects related to outreaching.** 2. **Try to increase the on-line courses with International teachers.**

Performance indicator B.2.1.2. At least one discipline is dedicated to ethics in scientific research and intellectual property, or there are well-defined topics on these subjects within a discipline taught in the doctoral program.

In the Curriculum, there is the discipline Ethics and academic integrity, which specifies the competencies, skills and abilities acquired by PhD students after completing the discipline within the doctoral programme.

The indicator is fulfilled. The subject "Ethics and academic integrity" is included in the programme.
I do not have any-recommendation in this indicator

Performance indicator B.2.1.3. The IOSUD has the mechanisms in place to ensure that the academic training program based on advanced higher education studies related to the evaluated domain addresses the "learning outcomes", specifying the

knowledge, skills, and the responsibility and autonomy that doctoral students should acquire after completing each discipline or through the research activities[2].

The subject sheets contain specific references to the doctoral students' knowledge, skills/abilities, competencies, responsibility, and autonomy after completing the training programme. These can be found under the headings Specific skills (professional and transversal) accumulated, General and specific objectives of the discipline, Learning outcomes. In addition, at the level of each faculty, there is an internal quality assurance mechanism (Commission for evaluation and quality assurance – CEAC, (https://sim.UniTBv.ro/images/documente/echipa-de-conducere/Organigrama_SIM_16.pdf).

In addition to the subject sheets, in October 2018, the Synthetic Discipline Sheet model was created and implemented. The synthetic presentation sheets of the disciplines are internal SDI documents meant to briefly illustrate to the doctoral students the objectives, the content of each discipline, competencies formed and the learning outcomes. In addition, the document is intended for doctoral students to guide them in compiling the individual doctoral programme, respectively:

• choice of optional subjects (where available);

• implementation of the facility to obtain 10 credits from other courses/internships (outside IOSUD) - generically called disciplines of choice, which form the transversal skills necessary for the field, provided the formation of useful transversal skills.

The synthetic files of the disciplines can be consulted by doctoral students in the intranet network of the university: https://intranet.UniTBv.ro/Cercetare/Scoala-Doctorala-Interdisciplinara/Doctorat/Program-individual-doctorat.

The indicator is fulfilled. The IOSUD has enough mechanisms. The academic training is not very complicated in this case, so it is easy to fulfill it.
Recommenda tions: 1. The recommendations in this case are more related to the increase of courses and all of them where explained in the *Indicator B.2.1.1.*

DOMAIN C. QUALITY MANAGEMENT
The following criteria are related to the quality management of the programme.

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[2] Or by what the graduate should know, understand and be able to do, according to the provisions of the Methodology for the listing and registration of higher education qualifications in the National Register of Qualifications in Higher Education (RNCIS) approved by the Order of the Minister of National Education no.3475/2017 with subsequent amendments and additions.

Criterion C.1. Existence and periodic implementation of the internal quality assurance system

Standard C.1.1. The institutional framework is in place, and policies and procedures are applied for the internal assurance of the relevant quality.

For the purpose of internal evaluation and monitoring the evolution of the Interdisciplinary Doctoral School (SDI) and of the doctoral fields operating within SDI, the following methodologies were developed and implemented (covering the criteria / aspects mentioned in this indicator - the doctoral supervisors' scientific activity, the infrastructure and logistics necessary to carry out the research activity, the procedures and the subsequent rules for the organization of doctoral studies):
1. Methodology on the internal evaluation of the Interdisciplinary Doctoral School within IOSUD-UNITBV (made and applied in 2016);
2. Methodology for periodic internal evaluation of the doctoral supervisors' activity (made and applied in 2018).

Performance indicator C.1.1.1. The doctoral school to which the doctoral study domain belongs demonstrates that the internal evaluation and quality assurance process of the study domain is carried out constantly, according to a procedure developed and applied at the level of the IOSUD, including an evaluation of the following mandatory criteria:
a) the scientific work of doctoral advisors;
b) the infrastructure and logistics needed for carrying out the research activity;
c) the regulations and procedures based on which doctoral studies are organised;
d) the scientific activity of doctoral students;
e) the training program based on advanced higher education studies of doctoral students;
f) social and academic support services (including for participation in various events, publishing papers, etc.) and counselling services available for the doctoral students.

The Methodology on the internal evaluation of the Interdisciplinary Doctoral School was drafted by the Council for Doctoral University Studies (CSUD), being approved by the CSUD Decision no. 5 of 6.06.2016. The methodology is available for consultation on the webpage of IOSUD-UNITBV (https://www.UniTBv.ro/documente/cercetare/doctorat-postdoctorat/metodologii-rapoarte/Metodologie_evaluare_interna_SDI.pdf). Based on this methodology, the internal evaluation process took place in June 2016, with the evaluation committee proposed by CSUD Decision no. 5 of 6.06.2016 and appointed by the Order of the Rector of Transilvania University of Braşov no. 7996 of 8.06.2016.

The internal evaluation process focused on the following aspects: the institutional capacity of IOSUD-UNITBV; the statistical situation of doctoral supervisors, PhD

students and doctoral theses (defended and in progress); quality of the scientific research outcomes/ artistic creation of SDI members (articles, patents, other significant achievements specific to the doctoral fields); provision of the necessary resources for the scientific research / artistic creation activity (projects financed by institutions in the country / abroad, as coordinator or partner); structure of the curricula for the advanced university training programme; carrying out the management-administration process at SDI through specific documents for conducting doctoral studies, in accordance with the legislation in force; observance of the regulatory provisions regarding the organization of the admission contest and the completion of the doctoral university studies; the framework for compliance with ethical norms in scientific research; provision of public access to SDI documents (regulations, methodologies, specific instructions).

The methodology for periodic internal evaluation of the doctoral supervisors' activity was adopted by the Council for Doctoral University Studies (CSUD) by CSUD Decision no. 31 of 7.03.2018, and subsequently approved by the University Senate by Decision no. 22 of 09.05.2018. The methodology is available for consultation on the website of IOSUD-UNITBV (https://UniTBv.ro/documente/despre-UniTBv/regulamente-hotarari/regulamentele-universitatii/angajati/Metodologie_evaluare_activ_cond_doct.pdf).

According to both evaluations, the following issues were studied:

- The PhD students' activity
- The PhD students' training programme based on advanced academic studies (PPUA)
- The periodic evaluation of support services for PhD students

The indicator is fulfilled. The doctoral school demonstrate all of the criteria during the process and there are enough rules and personnel to fulfil all of the quality assurance of the programme and to do periodic evaluation reports. In addition, it is a interdisciplinary doctoral school, giving more opportunities to collaborate in different fields.
Recommendations: 1. **Try to increase the social activities among all PhD students from the University.** 2. **Try to add a unit or a department related to the psicological help of the students, an Ombudsperson for all University, and a specific unit for gender equality.** 3. **Try to add more publicity (using different Social Media options) in all of the possibilities the PhD students have during the doctorate.** 4. **Try to increase the possibilities to have double-degree PhD programmes with other Universities from Romania and abroad**

Performance indicator* C.1.1.2. Mechanisms are implemented during the doctoral study program to enable identification of the doctoral students' needs, as well as their overall level of satisfaction with the doctoral study program in order to ensure continuous improvement of the academic and administrative processes. Following the analysis of the results, there is evidence that an action plan was drafted and implemented.

SDI has created appropriate mechanisms to collect the feedback of the doctoral students on their needs and level of satisfaction with the doctoral study programme.

The doctoral students' consultation covers 3 aspects (criteria):

- The assessment of the transversal skills module PPUA 1- with 6 sub-criteria (1.1-1.6) regarding the content of the disciplines, the relevance of the trained skills, the professors' performance, the number of hours- the time budget, the form of evaluation and the organization of the activity by SDI, in a grading system from 1 to 5, in which 1 means inadequate, and 5 – adequate;

- Global assessment of the usefulness of the transversal skills module PPUA 1, on a scale from 1 to 10, from 1 – useless to 10 – very useful.

- Recommendations/proposals on PPUA 1 disciplines: disciplines that should be replaced, disciplines that should be introduced, other suggestions.

Consultation of the doctoral students and also of the graduates with validated PhD titles is a useful mechanism and valuable tool to be further periodically implemented to identify adequate solutions to continuously improve the academic and administrative processes within the doctoral school, to ensure the learning outcomes and development of useful skills and competencies corresponding to level 8 of qualification according to the National Qualifications Framework.

The indicator is fulfilled. The doctoral school has different mechanisms to identify the curricula of the PhD students during the first years, and the reports of the results of the thesis of the rest of years.
<u>**Recommendations:**</u> 1. **Try to increase the presentations of the students in seminars within all programme to other PhD students.** 2. **Try to increase the quantity of PhD students in the field of environmental engineering.**

Criterion C.2. Transparency of information and accessibility of learning resources

The website of IOSUD-Transilvania University of Brașov also includes a section dedicated to the Interdisciplinary Doctoral School.

Standard C.2.1. Information of interest to doctoral students, future candidates, and information of public relevance is available for consultation in electronic format.

The website of IOSUD-Transilvania University of Brașov (https://www.UniTBv.ro) also includes a section dedicated to the Interdisciplinary Doctoral School (https://www.UniTBv.ro/cercetare/doctorat-postdoctorat-si-abilitare.html), as well as on the intranet platform of the University – section Doctorate (https://intranet.UniTBv.ro/Cercetare/Scoala-Doctorala-Interdisciplinara/Doctorat).

Performance indicator C.2.1.1. Subject to compliance with the data protection regulations in force, the IOSUD publishes the following types of information on the website of the higher education institution:

a) the regulations of the doctoral school;

b) the admission regulations;

c) the doctoral study contract;

d) the study completion regulation including the procedure for the public presentation of the thesis;

e) the content of the training programs based on advanced academic studies;

f) the academic and scientific profile, thematic areas/research themes of the doctoral advisors within the domain, as well as their institutional contact data;

g) the list of doctoral students in the domain concerned, with basic information (year of enrolment; advisor);

h) information on the standards for developing the doctoral thesis;

i) links to the summaries of the doctoral theses to be presented publicly, as well as the day, time and place where they will be presented, at least 20 days before the presentation.

Specific regulations are added on the web sites, especially the following:

-https://UniTBv.ro/documente/despre-UniTBv/regulamente-hotarari/regulamentele-universitatii/studenti/Regulament_ul_scolii_doctorale_19.07.2017.pdf

-https://www.unitbv.ro/documente/despre-unitbv/regulamente-hotarari/regulamentele-universitatii/studenti/Metodologie_admitere_doctorat_20.04.2022.pdf

-https://www.unitbv.ro/documente/cercetare/doctorat-postdoctorat/contracte/Contract_studii_doctorale_2021_cu_acord_publicare.pdf

-https://UniTBv.ro/documente/cercetare/doctorat-postdoctorat/metodologii-rapoarte/v2/2020-IS-8-Finalizare_si_sustinere_teze-v6-aprobata_CSUD.pdf

-https://intranet.UniTBv.ro/Cercetare/Scoala-Doctorala-Interdisciplinara/Doctorat/Program-individual-doctorat

-https://www.UniTBv.ro/cercetare/doctorat-postdoctorat-si-abilitare/despre-scoala-doctorala/domenii-de-doctorat-si-conducatori
-https://www.UniTBv.ro/cercetare/doctorat-postdoctorat-si-abilitare/admitere/tematica-admitere.html
-https://www.UniTBv.ro/cercetare/doctorat-postdoctorat-si-abilitare/doctorat-si-postdoctorat.html
-https://intranet.UniTBv.ro/Cercetare/Scoala-Doctorala-Interdisciplinara/Doctorat/Doctoranzi-in-stagiu
- https://www.UniTBv.ro/documente/cercetare/doctorat-postdoctorat/anunturi/Ghid_elaborare_teza.pdf
- https://www.UniTBv.ro/cercetare/doctorat-postdoctorat-si-abilitare/doctoranzi/sustinere-teza.html

The indicator is fulfilled. The websites of IOSUD and the website of the University have all of this information.
<u>Recommendations:</u> 1. **Try to use also English language in all of the information data.** 2. **Try to increase some items related to science outreaching activities of the PhD students in order to give more publicity and importance to this kind of activities.** 3. **Try to give more publicity of this information to all PhD students in different media.**

Standard C.2.2. The IOSUD / Doctoral School provides doctoral students with access to the resources needed for conducting doctoral studies.

The programme has access to a list of relevant academic databases, with free access by all doctoral students, for the entire reporting period and the details about the contracting and implementation of this service carried out through the Library of the Transilvania University of Brașov.

Performance indicator C.2.2.1. All doctoral students have free access to one platform providing academic databases relevant to the doctoral studies domain of their thesis.

Starting with 2009, the implementation of the project "National Electronic Access to Scientific Research Literature (ANELiS)" started at Transilvania University of Brașov / IOSUD-UNITBV. It is a project financed by European funds, which unfolded between 11 May 2009 - 10 October 2012. Subsequently, between November 2012 and January 2013, the access to electronic scientific resources was ensured by a project of the National Authority for Scientific Research (ANCS) - Executive Unit for Funding Education Higher Education, Research and Development (UEFISCDI). Within the project, Transilvania University of Brașov / IOSUD-UNITBV benefited from permanent IP-based access and mobile access to electronic scientific information and documentation resources. Between May 2013 and December 2015, the national electronic access to scientific literature was ensured through the project "Continuing the national electronic access to scientific literature and new ways to support and promote the research system in Romania - ANELIS PLUS", funded by the Executive Unit for Financing of Higher Education, Research, Development and Innovation (UEFISCDI) through the Capacities Program, contract no. CT 266/10 May 2013. The project granted Transilvania University of Brașov / IOSUD-UNITBV permanent access

based on IP, and mobile access to electronic scientific information and documentation resources. Transilvania University of Brașov / IOSUD-UNITBV is a Contributing Member to the project with SMIS code 102839 "National electronic access to the scientific literature to support the research and education system in Romania – ANELIS PLUS 2020", which is enforced between 18.07.2017 – 17.07.2022 (http://anelisplus2020.anelisplus.ro/). Hereby, Transilvania University of Brașov/ IOSUD-UNITBV benefits from permanent access based on IP and mobile access to electronic scientific information and documentation resources.

The indicator is fulfilled. The doctoral students have free access to different academic databases
Recommendations: 1. **Try to add a repository of papers from all of the Institution.** 2. **Try to give more publicity of the platforms about academic database to all PhD students in different media.**

Performance indicator C.2.2.2. Each doctoral student, upon request, has access to an electronic system for verifying the degree of similarity with other existing scientific or artistic works.

For the consolidation of the educational activities at the Transilvania University of Brașov, software services were purchased to verify the originality of the studies through Turnitin software, starting on 1.09.2018 for 6 years, until 31.08.2024. Access to the Turnitin computer system is ensured for all academic teaching staff members of the university, respectively all doctoral supervisors (including outsiders and retirees), all doctoral students of the university, as well as partly for bachelor's and master's degree students at the university. Turnitin software (https://www.turnitin.com/) is ranked among the top 5 software solutions worldwide for plagiarism prevention, being purchased/implemented by numerous universities, as well as by prestigious journals.

The indicator is fulfilled. The PhD students have access to the Turnitin software to verify similarities
I do not have any recommendation in this indicator.

Performance indicator C.2.2.3. All doctoral students have access to scientific research laboratories or other facilities depending on the specific domain / domains within the doctoral school, according to a set of internal regulations.

PhD students have access to the equipment in the endowment of the Research-Development Institute of UniTBv

> The indicator is totally fulfilled. The PhD students have access to the Research-Development Institute. In addition, it is a interdisciplinary research centre, giving more opportunities to collaborate in different fields.

> **Recommenda tions:**
> 1. Try to increase at institutional level, the funding for the mantenance of all of the infrastructure.

SWOT analysis

Strengths:	Weaknesses:
- the strengths identified throughout the report within the analysis per indicators will be resumed here. Other general strengths that do not fall under a specific indicator may be formulated as well.	- the weaknesses identified throughout the entire report within the analysis per indicators will be resumed here. Other general weaknesses that do not fall under a specific indicator may be formulated as well.
• The interdisciplinarity and collaboration, including not only science and engineering areas but also social areas, and not only in the doctoral school but also in the research Institute.	• Try to increase the possibilities to have double-degree PhD programmes with other Universities from Romania and abroad and increase the collaboration of International Professors to teach on-line courses for the PhD students.
• The inter-sectorial and international exchange of knowledge with industry and other institutions abroad, within the increasing of personnel in Master degree, the mobility programmes, international students, and international projects. Nowadays, applying for joining a European Campus.	• Try to increase the possibilities of collaboration with SMEs in research and applying different mechanisms and methodologies to accept people working in the industry and doing the PhD at the same time.
• The high infrastructure to complete all of the experiments and needs during the thesis, the courses, necessities for the PhD students during the life of the thesis, and co-tutelage with other supervisors.	• Try to increase the social impact within the University with more social activities, more help to solve conflicts with a person in charge (Ombudsperson), and a specific unit for gender equality.

• **The high quantity of regulations, instructions and infrastructure of Data Bases and computers.** • **The high knowledge, motivation and interest of the people in research, development and innovation (advisors, teachers, post-doctoral and PhD students).** • **The flexibility of the courses, necessities for the PhD students during the life of the thesis, and co-tutelage with other supervisors.**	• **Try to increase the possibilities to learn English language and to add all procedures and methodologies in English in all websites and documents.**
Opportunities: possible lines of action for the development of the institution under review will be identified here; examples of opportunities: a favourable economic environment in the proximity of the evaluated institution; the uniqueness of the study programs, and their relevance for the local/national market; the overall attractiveness of the study program etc. • **Good opportunities in collaborations with other areas of the University, other institutions and industry at national and international levels.** • **Increase the bilateral programmes for mobility and research.**	Threats: the possible causes of the deficient aspects (the causes of the identified weaknesses) will be identified here, which are actually the threats to the proper functioning of the institution; in addition, external threats may be present as well, such as an inadequate economic environment in the proximity of the evaluated institution; the delivery of study programmes that have low attractiveness both for the candidates and for the labour market etc. • **Try to increase the quantity of PhD students in the field of environmental engineering and the quantity of advisors.** • **Try to increase the social impact and visibility to all Society by means of Social Media and events of science outreaching.**

Overview of judgments awarded and of the recommendations

No.	Type of indicator (PI, PI*, CPI)	Performance indicator	Judgment	Recommendations

1.	PI	**A.1.1.1.** The existence of specific regulations and their application at the level of the doctoral school that the doctoral domain is a part of:
		  a) the internal regulations of the doctoral school;
		  b) the methodology for conducting elections for the position of director of the Council of doctoral school (CSD), as well as elections by the students of their representative in the CSD, and evidence that such elections were conducted;
		  c) methodologies for organising and conducting doctoral studies (admission of doctoral students, completion of doctoral studies);
		  d) existence of mechanisms for recognising the status of a doctoral advisor and the equivalence of a doctoral degree obtained abroad;
		  e) functional management structures (Council of the doctoral school), including proof of the regular frequency of convening their meetings;
		  f) the contract for doctoral studies;
		  g) internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs based on advanced academic studies.
				Specific regultations to take into account not only scientific papers for the final thesis but also patents with industry in order to reinforce the research, development and innovation with the industry.

2.	PI	**A.1.1.2.** The doctoral school's Regulations include mandatory criteria, procedures and standards concerning the aspects specified in art. 17, para. (5) of Government Decision no. 681/2011, as further amended and supplemented.		**I do not have any recommendation**
3.	PI	**A.1.2.1.** The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic background.		**To include more English language in the system.**
4.	PI	**A.1.2.2.** The existence and use of an appropriate software and evidence of its use to verify the percentage of similarity in all doctoral theses.		**To include more English language in the software.**

No.	Type of indicator (PI, PI*, CPI)	Performance indicator	Judgment	Recommendations
5.	CPI	**A.2.1.1.** The venues and the material equipment available to the IOSUD/the doctoral school enable the research activities in the evaluated domain to be carried out, in line with the assumed mission and objectives (computers, specific software, equipment, laboratory equipment, library, access to international databases, etc.). The research infrastructure and the provision of research services are presented to the public through a specific platform. The research infrastructure described above, which was purchased and developed within the past 5 years will be presented distinctly.		• **Try to increase the use of all of the infrastructure in order to do some external analysis aprt from the research and teaching activities. This can be useful to increase the possilities of collaboration with the industry in the main areas of the programme.** • **Try to increase at institutional level, the funding for the mantenance of all of the infrastructure.**
6.	CPI	**A.3.1.1.** Minimum three doctoral thesis advisors work within that doctoral domain, and at least 50% of them (but no less than three) meet the minimum standards of the National Council for Attestation of University Degrees, Diplomas and Certificates (CNATDCU) in force at the time when the evaluation is carried out, which standards are required and mandatory for obtaining the enabling certification.		**Try to use more different criteria apart from the scientific research related to patents and other knowledge transfer for the minimum standards of the National Council for Attestation of University Degrees, Diplomas and Certificates in order to reinforce the collaborations with different institutions in the research and to increase the innovation.**
7.	PI *	**A.3.1.2.** At least 50% of the doctoral advisors in the doctoral domain under review are tenured professors within the IOSUD and have a full-time employment contract for an indefinite period.		**I do not have any recommendation**
8.	PI	**A.3.1.3.** The study subjects in the education programme based on advanced higher education studies pertaining to the doctoral domain are taught by teaching staff or researchers who are doctoral thesis advisors / certified doctoral thesis advisors, professors / CS I or associate professors / CS II, with proved expertise in the field of the study subjects they teach, or other specialists in the field who meet the standards established by the institution in relation with the aforementioned teaching and research functions, as provided by the law.		• **Try to increase the co-tutelage with specialists in industries related to the environmental engineering topics.** • **Try to increase the co-tutelage with more international researchers.**

No.	Type of indicator (PI, PI*, CPI)	Performance indicator	Judgment	Recommendations
9.	CPI	**A.3.2.1.** At least 50% of the doctoral thesis advisors in the evaluated domain have at least 5 Web of Science- or ERIH-indexed publications in magazines of impact, or other achievements of relevant significance for that domain, including international-level contributions that indicate progress in scientific research - development - innovation for the evaluated domain. The aforementioned doctoral thesis advisors enjoy international awareness within the past five years, consisting of: membership on scientific boards of international publications and conferences; membership on boards of international professional associations; guests in conferences or expert groups working abroad, or membership on doctoral commissions at universities abroad or co-leading with universities abroad. For Arts and Sports and Physical Education Sciences, doctoral thesis advisors shall prove their international visibility within the past five years by their membership on the boards of professional associations, membership in organising committees of arts events and international competitions, membership on juries or umpire teams in artistic events or international competitions.		• **Try to increase the Social Media of the research group in order to increase the visibility at all levels.** • **Try to increase the possibilities to have double-degree PhD programmes with other Universities from Romania and abroad**
10.	PI *	**A.3.2.2.** At least 50% of the doctoral thesis advisors in a specific doctoral study domain continue to be active in their scientific field, and acquire at least 25% of the score requested by the minimal CNATDCU standards in force at the time of the evaluation, which are required and mandatory for acquiring their enabling certificate, based on their scientific results within the past five years.		• **Try to reinforce the collabroation with industry.** • **Try to increase the courses and units at the University related to international projects in order to increase the training of the personnel at the University in the preparation of proposals.** • **Try to increase the possibilities to have double-degree PhD programmes with other Universities from Romania and abroad**
11.	PI *	**B.1.2.1.** Admission in the doctoral study programmes is based on selection criteria including the academic, research and professional performance of the candidates; their interest for scientific or artistic/sports research; publications in the domain, and a proposal of a research subject. Interviewing the candidate is mandatory as part of the admission procedure.		**Try to increase the possibilities of PhD students working in companies relate to the field of environmental engineering.**

No.	Type of indicator (PI, PI*, CPI)	Performance indicator	Judgment	Recommendations
12.	PI	**B.2.1.1.** The training program based on advanced academic studies includes at least 3 disciplines relevant for the scientific research training of doctoral students, out of which at least one discipline focuses on the in-depth study of research methodology and/or statistical data processing.		• **Try to increase the number of optional in the PhD programme, especially in subjects related to outreaching.** • **Try to increase the on-line courses with International teachers.**
13.	PI	**B.2.1.2.** At least one discipline is dedicated to ethics and intellectual property in scientific research, or there are well-defined topics on these subjects within a discipline taught in the doctoral program.		**I do not have any recommendation**
14.	PI	**B.2.1.3.** The IOSUD has the mechanisms in place to ensure that the academic training program based on advanced higher education studies related to the evaluated domain addresses the "learning outcomes", specifying the knowledge, skills, and the responsibility and autonomy that doctoral students should acquire after completing each discipline or through the research activities.		**The recommendations in this case are more related to the increase of courses and all of them where explained in the** *Indicator B.2.1.1.*
15.	PI	**C.1.1.1.** The doctoral school to which the doctoral study domain belongs demonstrates that the internal evaluation and quality assurance process of the study domain is carried out constantly, according to a procedure developed and applied at the level of the IOSUD, including an evaluation of the following mandatory criteria: a) the scientific work of doctoral advisors; b) the infrastructure and logistics needed for carrying out the research activity; c) the regulations and procedures based on which doctoral studies are organised; d) the scientific activity of doctoral students; e) the training program based on advanced higher education studies of doctoral students; f) social and academic support services (including for participation in various events, publishing papers, etc.) and counselling services available for the doctoral students.		• **Try to increase the social activities among all PhD students from the University.** • **Try to add a unit or a department related to the psicological help of the students, an Ombudsperson for all University, and a specific unit for gender equality.** • **Try to add more publicity (using different Social Media options) in all of the possibilities the PhD students have during the doctorate.** • **Try to increase the possibilities to have double-degree PhD programmes with other Universities from Romania and abroad**

No.	Type of indicator (PI, PI*, CPI)	Performance indicator	Judgment	Recommendations
16.	PI *	**C.1.1.2.** Mechanisms are implemented during the doctoral study program to enable identification of the doctoral students' needs, as well as their overall level of satisfaction with the doctoral study program in order to ensure continuous improvement of the academic and administrative processes. Following the analysis of the results, there is evidence that an action plan was drafted and implemented.		• **Try to increase the presentations of the students in seminars within all programme to other PhD students.** • **Try to increase the quantity of PhD students in the field of environmental engineering.**
17.	**CPI**	**C.2.1.1.** Subject to compliance with the data protection regulations in force, the IOSUD publishes the following types of information on the website of the higher education institution: a) the internal regulations of the doctoral school; b) the admission regulations; c) the doctoral study contract; d) the study completion regulation including the procedure for the public presentation of the thesis; e) the content of the training programs based on advanced academic studies; f) the academic and scientific profile, thematic areas/research themes of the doctoral advisors within the domain, as well as their institutional contact data; g) the list of doctoral students in the domain concerned, with basic information (year of enrolment; advisor); h) information on the standards for developing the doctoral thesis; i) links to the summaries of the doctoral theses to be presented publicly, as well as the day, time and place where they will be presented, at least 20 days before the presentation.		• **Try to use also English language in all of the information data.** • **Try to increase some items related to science outreaching activities of the PhD students in order to give more publicity and importance to this kind of activities.** • **Try to give more publicity of this information to all PhD students in different media.**
18.	PI	**C.2.2.1.** All doctoral students have free access to one platform providing academic databases relevant to the doctoral studies domain of their thesis.		• **Try to add a repository of papers from all of the Institution.** • **Try to give more publicity of the platforms about academic database to all PhD students in different media.**
19.	PI	**C.2.2.2.** Each doctoral student, upon request, has access to an electronic system for verifying the degree of similarity with other existing scientific or artistic works.		**I do not have any recommendation**

No.	Type of indicator (PI, PI*, CPI)	Performance indicator	Judgment	Recommendations
20.	PI	**C.2.2.3.** All doctoral students have access to the scientific research laboratories or to other facilities depending on the specific domain / domains within the doctoral school, according to a set of internal regulations.		**Try to increase at institutional level, the funding for the mantenance of all of the infrastructure.**

Conclusions and general recommendations

In order to improve the programme, the following reccomendations are given:

1. **Try to increase the quantity of PhD students in the field of environmental engineering.**
2. **Try to increase the use of all of the infrastructure in order to do some external analysis aprt from the research and teaching activities. This can be useful to increase the possibilities of collaboration with the industry in the main areas of the programme.**
3. **Try to increase at institutional level, the funding for the mantenance of all of the infrastructure.**
4. **Try to use more different criteria apart from the scientific research related to patents and other knowledge transfer for the minimum standards of the National Council for Attestation of University Degrees, Diplomas and Certificates in order to reinforce the collaborations with different institutions in the research and to increase the innovation.**
5. **Try to increase the co-tutelage with specialists in industries and international researchers related to the environmental engineering topics.**
6. **Try to increase the possibilities to have double-degree PhD programmes with other Universities from Romania and abroad**
7. **Try to increase the Social Media of the research group in order to increase the visibility at all levels.**
8. **Try to increase the possibilities of PhD students working in companies relate to the field of environmental engineering.**
9. **Try to increase the number of optional in the PhD programme, especially in subjects related to outreaching and try to increase the on-line courses with International teachers.**
10. **Try to increase the social activities among all PhD students from the University.**

11. Try to add a unit or a department related to the psicological help of the students, an Ombudsperson for all University, and a specific unit for gender equality.
12. Try to add more publicity (using different Social Media options) in all of the possibilities the PhD students have during the doctorate.
13. Try to increase the English language in all of the information data and courses.
14. Try to increase some items related to science outreaching activities of the PhD students in order to give more publicity and importance to this kind of activities.
15. Try to give more publicity of this information to all PhD students in different media.

In relation to these recommendations, the following weaknesses and threats are identified:

1. Try to increase the possibilities to have double-degree PhD programmes with other Universities from Romania and abroad and increase the collaboration of International Professors to teach on-line courses for the PhD students.
2. Try to increase the possibilities of collaboration with SMEs in research and applying different mechanisms and methodologies to accept people working in the industry and doing the PhD at the same time.
3. Try to increase the social impact within the University with more social activities, more help to solve conflicts with a person in charge (Ombudsperson), and a specific unit for gender equality.
4. Try to increase the possibilities to learn English language and to add all procedures and methodologies in English in all websites and documents.
5. Try to increase the quantity of PhD students in the field of environmental engineering and the quantity of advisors.
6. Try to increase the social impact and visibility to all Society by means of Social Media and events of science outreaching.