

External evaluation report for the setting up (establishment) of a doctoral study domain

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I. Introduction¹

The present report was created on the basis of the periodic evaluation visit of the Doctoral field - Environmental Engineering, at the IOSUD-Politehnica University Timișoara (IOSUD-PUT).

According to the agenda, the evaluation visit took place between 02-04 April 2025.

The evaluation commission appointed by ARACIS had the following composition:

- Professor Florentina-Daniela Munteanu, PhD supervisor in the field of Environmental Engineering at the “Aurel Vlaicu” University of Arad and member of the Permanent Commission of Engineering Sciences 2 of ARACIS;
- Professor Alberto Coz Fernandez - University of Cantabria - Spain;
- Ana Maria Lupu, PhD student in the field of Environmental Engineering at the Universitatea Tehnică "Gheorghe Asachi" Iași

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



The specific activities of the evaluation visit of the doctoral field were scheduled between 02-04 April – all face-to-face meetings.

II. Methods used

The main objective of the Doctoral School of Engineering Studies of IOSUD-UPT and of the doctoral fields coordinated by it is the preparation of the human resource, within the third cycle of university studies, for the qualification of independent scientific researcher certified by granting the title of doctor to the doctoral student, after defending the doctoral thesis and following the completion of the doctoral program composed of (a) the training program based on advanced university studies (with duration of 1 year) respectively (b) individual doctoral scientific research program (with a minimum duration of 3 years).

The mission of the Doctoral School of Engineering Studies of IOSUD-UPT is to coordinate, in a unitary manner (with unitary academic performance criteria and standards) all the doctoral fields accredited for operation in IOSUD-UPT. The Doctoral School provides the optimal organizational framework for the development of training programs based on advanced university studies, respectively individual doctoral scientific research programs, and for the completion and public defense of doctoral theses. Also, the Doctoral School provides the organizational framework for the public defense of the habilitation and sustainable development theses of the body of doctoral supervisors affiliated to IOSUD-UPT. The Doctoral School provides, for all doctoral students of IOSUD-UPT, transversal courses within the training program based on advanced university studies, which provide doctoral students with the necessary knowledge and cultivate the appropriate skills and attitudes for scientific research in compliance with the academic standards of performance, originality, compliance with the norms of ethics and deontology of research.

Within the field of Environmental Engineering, there are 3 doctoral supervisors who are to be affiliated to IOSUD UPT. All of them are tenured professors at the Polytechnic University of Timișoara. The evolution of the number of doctoral students and the number of doctors in the last 5 years cannot be presented because the doctoral field Environmental Engineering is a field that is intended to be established in UPT and no doctoral students in Environmental Engineering have been enrolled.

The internal evaluation report of the evaluated doctoral university study area was made available to the members of the evaluation team, where they could be consulted and analyzed. The report is prepared in accordance with the recommendations of the Guide developed by ARACIS. The report is accompanied by annexes that contain all the information necessary for the evaluation of the doctoral field.



During the evaluation visit, activities were organized according to the visit agenda.

III. Analysis of ARACIS's performance indicators

Domain A. INSTITUTIONAL CAPACITY

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.

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 programs 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. There are only one doctoral school but I think this is much better in the case of having an Environmental Engineering field because this field is very transversal and it can collaborate with the rest of PhD programs, including not only engineering but also management and communication.



Recommendations:

- 1. To include more English language in the documents, at least for international students (the university has about 10%) and co-supervisors.**

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.

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

The indicator is fulfilled.

Recommendations:

- 1. To include more English language in the documents, at least for international students (the university has about 10%) and co-supervisors.**

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.

The indicator is fulfilled. There is an IT system for all of the academic part of the PhD students.

Recommendations:

- 1. To include more English language, at least for international students.**

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.

The indicator is fulfilled. There is a software from October 2017 to verify all thesis and it can be used for Environmental Engineering field: iThenticate (acquired by UPT). Before that date, they used Plagiat.pl and SemPlag.

There are no recommendations in this indicator.

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.

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 indicator is totally fulfilled. The infrastructure of the labs in Environmental Engineering PhD domain is more than enough for the research in all of the areas of the environmental engineering, and they have a lot of new pieces of equipment and a new building with new laboratories to improve the research in the doctoral field. They can use not only the infrastructure of the labs in the faculty but also the infrastructure of the research centers (Research Center of Environmental Science and Engineering, and Research Center of Material Science and Renewal Energy) A summary of the main pieces of equipment and software is the following: UV-VIS Spectrophotometers, automatic filtration systems, electrooxidation cells, automated chemical analyzers, Automated electrochemical filtering systems, pilot-scale modular stations for water treatment, analytical balances, pH meters and conductometers, ultrasonic processors, Total Organic Carbon analyzer, MultiMeter, incubators, rotating disk electrode motor controller autolab, ion chromatography systems, zeta potential analyzer, photocatalytic reactors, NMR spectrometer, FT-IR spectrophotometers, SECM (Scanning Electrochemical Microscopy), Autolab 302N – EQCM (Electrochemical Quarz Crystal Microbalance), X-Ray Diffractometer, thermal analysis, several potentiostat/galvanostat autolabs, biologic potentiostat/galvanostat EC-Lab® software for electrochemical measurements, ProH+ PEM water electrolyzer test cell with hydraulic compression, H-tec energy conversion PEM electrolyzer / PEM fuel cell, and Aspen software.

Apart from the main infrastructure in the laboratories, the library is very modern and it has so many different services for working alone or in groups. They have also access to international data bases related to the journals in Environmental Engineering (Elsevier, Springer...).

Recommendations:

- 1. Try to increase the use of all of the infrastructure in order to do more external analysis apart from the research and teaching activities. They do, but they can increase this for increasing the possibilities of collaboration with the industry in the main areas of the program.**
- 2. Try to increase at institutional level, the funding for the maintenance 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.

Performance indicator 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.

The indicator is fulfilled. There are 3 coordinators with the minimum standards of the National Council for Attestation of University Degrees, Diplomas and Certificates.

Recommendations:

- 1. Try to increase the number of coordinators in the future.**
- 2. 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 indicator is totally fulfilled. 100% of all doctoral coordinators have full-time employment contract at the University.

Recommendations:

- 1. The recommendations in this indicator are related to the previous one (see Indicator A.3.1.1). Try to increase the number of coordinators in the future.**

Performance indicator A.3.1.3. The study subjects in the education program 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 indicator is fulfilled. The coordinators of the doctoral theses have a high expertise in Environmental Engineering field, pointing out not only the expertise in master but also in transversal disciplines.

Recommendations:

- 1. Try to increase the co-tutelage with specialists in industries related to the Environmental Engineering topics.**
- 2. Try to increase the courses for coordinators and other teachers.**
- 3. 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.

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.

The indicator is totally fulfilled. The 3 coordinators meet this indicator.

Recommendations:

- 1. Try to use more different criteria apart from the scientific research related to patents and other knowledge in order to reinforce the collaborations with different institutions in the research and to increase the innovation.**

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.



The indicator is fulfilled. The advisors are continuously being active in research and innovation in the topics of the Environmental Engineering domain and they have more than enough scientific publications, projects, international conferences and so on.

Recommendations:

- 1. Try to reinforce the collaboration with industry and to establish some grants in industries related to Environmental Engineering domains.**
- 2. Try to increase the possibilities of funding for post-doctoral research projects.**
- 3. Try to increase the courses and units at the UPT related to international projects in order to increase the training of the personnel at the UPT in the preparation of proposals.**

Domain B. EDUCATIONAL EFFECTIVENESS.

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.

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.

The indicator is fulfilled. All PhD students have an admission procedure related to the previous experience, the grades, and an interview.

On the other hand, the UPT has doctoral students from neighboring countries, offering them many facilities such as scholarships, accommodation, etc.

Recommendations:

- 1. Try to increase the possibilities of having PhD students working in companies relate to the field of Environmental Engineering.**
- 2. Due to the UPT has a program related to communication, in order to increase the number of PhD students in the future of the Environmental Engineering field, some publicity about the importance of this field in social media and the own TV channel can be done.**



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.

Performance indicator 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.

The indicator is fulfilled. The PhD students have some mandatory courses during the PhD degree, including one transversal course, one tutorial course and other courses related to master degrees; however, because of the different possibilities and futures of the PhD students, the courses can be increased, especially in subjects related to research, innovation, outreaching and entrepreneurship.

Recommendations:

- 1. Try to increase the number of courses (they can be optional) in the PhD program, especially in subjects related to research, innovation, outreaching and entrepreneurship.**
- 2. Try to increase the possibilities to do other courses from abroad or from other universities, volunteering and/or some on-line courses and they can be included in the 30 credits they need.**
- 3. Try to increase the use of mobility programs even for 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.

The indicator is fulfilled. The course about ethics is very interesting, but this is during the second semester.

Recommendations:

- 1. Try to do the course in both semester or at least in the first semester because of the importance of this topic for preparing the rest of courses and the research program.**

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 activities².

The indicator is fulfilled. The IOSUD has enough mechanisms. The academic training is not very complicated in this case, so it is easy to fulfil it.

Recommendations:

- 1. The recommendations in this case are more related to the increase of courses and all of them were explained in the *Indicator B.2.1.1*.**

DOMAIN C. QUALITY MANAGEMENT

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.

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 indicator is fulfilled. The doctoral school demonstrate all of the criteria during the process and there are enough rules and personnel to fulfill all of the quality assurance of the program. In addition, they are continuing updating all of the documents, results and harmonization mechanisms.

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.



Recommendations:

- 1. Try to increase the social activities among all PhD students from the UPT.**
- 2. Try to add more publicity (using different media options) in all of the possibilities the PhD students have during the doctorate. The students are more focused on the doctoral thesis and sometimes they do not know the possibilities they have apart from the doctoral thesis.**

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.

The indicator is fulfilled. There is an implemented customer satisfaction assessment procedure which is also applicable to PhD students. As a result of its implementation, doctoral students are given an anonymous questionnaire through which they can make recommendations to improve the quality of academic and administrative services offered.

In addition, the UPT has high percentage of grants and budget not only for the salary but also for the publications, open access and conferences, and the possibility to accommodate in the residences of the University.

Recommendations:

- 1. Try to increase the presentations of the students in seminars within all program to other PhD students. They do only during the first year.**
- 2. Try to increase the social activities for PhD students.**

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

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

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.

The indicator is fulfilled. All of the documents are published on the website.

Recommendations:

- 1. Try to use more English language in 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 and the TV channel.**

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

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.

The indicator is fulfilled. All doctoral students have free access, from any computer with IP belonging to the UPT campus, to the electronic resources and databases of the UPT Central Library. In addition, the UPT has some databases for specific journals in Environmental Engineering field and they can access also at home.

Recommendations:

- 1. 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.

The indicator is totally fulfilled. The UPT acquired iThenticate software in 2017.

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.

The indicator is totally fulfilled. The students have not only access to all infrastructure of the Environmental Engineering PhD domain, but also some infrastructure of other laboratories and institutions, including the researchers centers.

Recommendations:

- 1. Try to increase at institutional level, the funding for the maintenance of all of the infrastructure.**

SWOT analysis

<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - To fulfill all of the indicators. - The high expertise on the field of environmental engineering, in teaching and researching. - The new building, laboratories and high and new infrastructure to complete all of the experiments and needs during the thesis. - The library as a modern and social instrument for the PhD students. - The open-mind to use all of the pieces of equipment not only from the faculty but also from the research centres. - The high experience on managing PhD programs of the doctoral school. - The high percentage of grants and budget not only for the salary but also for the publications, open access and conferences. In addition, the possibility for all of the PhD students to stay in the cheap residences. 	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Industrial collaborations. They are open but they need to increase the importance of doing other kinds of results (patents and other knowledge transfer activities) and it can be converted in opportunities. - Try to increase the social impact within the University with more social activities. - Science outreaching activities. Increase the activities related to the popularization of the research to all of the Society. - Try to add English language in all of the documents and website for international students and co-supervisors.
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Opportunities:

- The possibilities to ask for more projects and collaborations with industry and international institutions.
- The possibilities to have more interdisciplinarity and collaboration of different areas, including not only engineering areas but also social areas and courses from all of the degrees.
- Try to do more external analysis for companies with the infrastructure they have and increasing the possibilities to collaborate with the industry.
- Try to use more the mobility programs for students and teachers.
- Try to use more the courses about writing papers for PhD students and teachers.
- The increase of doctoral students from neighboring countries, offering them many facilities such as scholarships, accommodation, etc.
- The use of the communication faculty to publish in the TV channel and the social media all of the possibilities there are in the University and trying to have a lot of PhD students applying in the future.

Threats:

- No registered PhD student at the moment, but it can be an opportunity to try to have an enough quantity of PhD students and trying to increase the quantity of coordinators.
- Training courses. Increase the possibilities for future competences of the PhD students and also the possibilities for coordinators and advisors.
- Increase the funding of the institution for maintenance and other resources for helping the research.



Overview of judgments awarded and of the recommendations

No.	Type of indicator (PI, PI*, CPI)	Performance indicator	Judgment	Recommendations
1.	PI	<p>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:</p> <ul style="list-style-type: none"> 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. 	Fulfilled	<ol style="list-style-type: none"> 1. To include more English language in the documents, at least for international students (the university has about 10%) and co-supervisors.
2.	PI	<p>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.</p>	Fulfilled	<ol style="list-style-type: none"> 1. To include more English language in the documents, at least for international students (the university has about 10%) and co-supervisors.
3.	PI	<p>A.1.2.1. The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic background.</p>	Fulfilled	<ol style="list-style-type: none"> 1. To include more English language, at least for international students.
4.	PI	<p>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.</p>	Fulfilled	<ul style="list-style-type: none"> - There are no recommendations in this indicator.



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.	Totally Fulfilled	<ol style="list-style-type: none"> 1. Try to increase the use of all of the infrastructure in order to do more external analysis apart from the research and teaching activities. They do, but they can increase this for increasing the possibilities of collaboration with the industry in the main areas of the program. 2. Try to increase at institutional level, the funding for the maintenance 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.	Fulfilled	<ol style="list-style-type: none"> 1. Try to increase the number of coordinators in the future. 2. 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.	Fulfilled	<ol style="list-style-type: none"> 1. The recommendations in this indicator are related to the previous one (see Indicator A.3.1.1). Try to increase the number of coordinators in the future.
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.	Fulfilled	<ol style="list-style-type: none"> 1. Try to increase the co-tutelage with specialists in industries related to the Environmental Engineering topics. 2. Try to increase the courses for coordinators and other teachers. 3. Try to increase the co-tutelage with more international researchers.



No.	Type of indicator (PI, PI*, CPI)	Performance indicator	Judgment	Recommendations
9.	CPI	<p>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.</p>	Totally fulfilled	<ol style="list-style-type: none"> 1. Try to use more different criteria apart from the scientific research related to patents and other knowledge in order to reinforce the collaborations with different institutions in the research and to increase the innovation.
10.	PI *	<p>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.</p>	Fulfilled	<ol style="list-style-type: none"> 1. Try to reinforce the collaboration with industry and to establish some grants in industries related to Environmental Engineering domains. 2. Try to increase the possibilities of funding for post-doctoral research projects. 3. Try to increase the courses and units at the UPT related to international projects in order to increase the training of the personnel at the UPT in the preparation of proposals.



No.	Type of indicator (PI, PI*, CPI)	Performance indicator	Judgment	Recommendations
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.	Fulfilled	<ol style="list-style-type: none"> 1. Try to increase the possibilities of having PhD students working in companies relate to the field of Environmental Engineering. 2. Due to the UPT has a program related to communication, in order to increase the number of PhD students in the future of the Environmental Engineering field, some publicity about the importance of this field in social media and the own TV channel can be done.
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.	Fulfilled	<ol style="list-style-type: none"> 1. Try to increase the number of courses (they can be optional) in the PhD program, especially in subjects related to research, innovation, outreach and entrepreneurship. 2. Try to increase the possibilities to do other courses from abroad or from other universities, volunteering and/or some on-line courses and they can be included in the 30 credits they need. 3. Try to increase the use of mobility programs even for 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.	Fulfilled	<ol style="list-style-type: none"> 1. Try to do the course in both semester or at least in the first semester because of the importance of this topic for preparing the rest of courses and the research program.
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.	Fulfilled	<ol style="list-style-type: none"> 1. The recommendations in this case are more related to the increase of courses and all of them were explained in the Indicator B.2.1.1.

No.	Type of indicator (PI, PI*, CPI)	Performance indicator	Judgment	Recommendations
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.	Fulfilled	<ol style="list-style-type: none"> 1. Try to increase the social activities among all PhD students from the UPT. 2. Try to add more publicity (using different media options) in all of the possibilities the PhD students have during the doctorate. The students are more focused on the doctoral thesis and sometimes they do not know the possibilities they have apart from the doctoral thesis.
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.	Fulfilled	<ol style="list-style-type: none"> 1. Try to increase the presentations of the students in seminars within all program to other PhD students. They do only during the first year. 2. Try to increase the social activities for PhD students.
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.	Fulfilled	<ol style="list-style-type: none"> 1. Try to use more English language in 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 and the TV channel.



No.	Type of indicator (PI, PI*, CPI)	Performance indicator	Judgment	Recommendations
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.	Fulfilled	1. 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.	Totally Fulfilled	- I do not have any recommendation in this indicator.
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.	Totally Fulfilled	1. Try to increase at institutional level, the funding for the maintenance of all of the infrastructure.

Conclusions and general recommendations

In conclusion, under my opinion, the Doctoral field - Environmental Engineering, at the IOSUD-Politehnica University Timișoara, fully complies with the assessment. All indicators are fulfilled.

The program has more strengths and opportunities than weaknesses and threats. However, the following recommendations are made:

- **English language in documents and website**
- **Industrial and international collaborations.**
- **External analysis for industry**
- **Use of publicity in collaboration with the communication departments**
- **Social activities.**
- **Science outreaching activities.**
- **Training courses and more seminars for PhD students, coordinators and advisors.**
- **Increase the funding of the institution for maintenance and other resources for helping the research.**



Annexes.....

Agenda:

Hour	Activity	Participants	Observations/ Location
Wednesday, 02.04.2025			
11:00-12:00	<i>Organizational meeting of the panel evaluators</i>	ARACIS / ARACIS panel members	Rectorate
12:00-13:00	<i>Panel evaluators` meeting with representatives of the institution and of the Council for Academic Doctoral Studies (CSUD)</i>	ARACIS panel members <i>Representatives of the University's management Representatives of the CSUD and of the Doctoral School The contact person</i>	Rectorate
13:00-14:00	Lunch break		
14:00-15:00	<i>Panel evaluators` meeting with the Commission for Quality Evaluation and Assurance (CEAC) members / Quality Assurance Department</i>	<i>ARACIS panel members University's representatives</i>	Faculty of chemical engineering
15:00-16:00	<i>Panel evaluators` meeting with the members of the Ethics Commission</i>	<i>ARACIS panel members Ethics Commission members</i>	Faculty of chemical engineering
16:00-18:00	<i>Visiting the educational and research infrastructure</i>	<i>ARACIS panel members University's representatives</i>	Faculty of chemical engineering
Thursday, 03.04.2025			
9:00-9:30	<i>Panel evaluators` technical meeting</i>	<i>ARACIS panel members</i>	Faculty of chemical engineering
9:30-10:00	<i>Panel evaluators` meeting with the contact person for the doctoral study domain under review and with the team that drafted the internal evaluation report</i>	<i>ARACIS panel members University's representatives</i>	Faculty of chemical engineering
10:00-11:00	<i>Panel evaluators` meeting with Doctoral Schools Council (CSD) members</i>	<i>ARACIS panel members CSD's members</i>	Faculty of chemical engineering
11:00-12:00	<i>Panel evaluators` meeting with the academic staff corresponding to the doctoral study domain</i>	<i>ARACIS panel members PhD coordinators</i>	Faculty of chemical engineering
12:00-13:00	<i>Panel evaluators` meeting with the Directors/ persons in charge of the research centers/laboratories within the doctoral study domain</i>	<i>ARACIS panel members Directors of research centers/laboratories</i>	Faculty of chemical engineering
13:00-14:00	Lunch break		



Thursday, 03.04.2025			
14:00-17:00	<p><i>Carrying out the specific activities of the panel evaluators and making entries in the draft of the external evaluation report.</i></p> <p><i>If deemed necessary, additional meetings may be held, for example with:</i></p> <ul style="list-style-type: none"> • <i>representatives from the University Senate (including students);</i> • <i>representatives of the student organization / organizations;</i> • <i>representatives of the Career Counseling and Guidance Center (CCOC);</i> • <i>representatives of the library of the higher education institution;</i> • <i>representatives of research centers / laboratories in the field of the doctoral school / schools or in the evaluated field;</i> • <i>representatives of the dormitory/canteen department (or equivalent).</i> <p><i>Education documents displayed at the IOSUD/Doctoral School secretariat may be checked.</i></p>	<p><i>ARACIS panel members</i> <i>University's representatives</i></p>	Faculty of chemical engineering
Friday, 04.04.2025			
08:00-09:00	<p><i>Panel evaluators` meeting with the contact person for the doctoral study domain under review</i></p>	<p><i>ARACIS panel members</i> <i>University's representatives</i></p>	Rectorate
09:00 - 10:00	<p><i>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).</i></p> <p><i>Discussions on the preparation of the external evaluation report of the panel evaluators.</i></p>	<p><i>ARACIS' panel members</i> <i>University's representatives</i></p>	Rectorate
10:00-11:00	<p><i>Panel evaluators` meeting with representatives of the institution under review to discuss on the conclusions of the evaluation process.</i></p>	<p><i>ARACIS panel members</i> <i>University's representatives</i></p>	Rectorate