

The External Evaluation Report of The University of Pitesti Materials Engineering Doctoral Study Domain

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I. Introduction¹

This report is prepared after the evaluation of the Materials Engineering doctoral domain within IOSUD (Institution Organizing Doctoral University Studies) at UPIT (The University of Pitești (<https://www.upit.ro/en>)). A face to face evaluation is performed on 17-19th of October, 2023.

I have made my evaluation through in person meetings and in person visits to the facilities in the university. In Table 1, the members of the evaluation committee for materials engineering is given.

Table1. Evaluation committee for Materials Engineering.

Coordinator Prof. Dr. Vasile Bratu	Valahia University of Târgoviște	Prof. Dr. Vasile Bratu v_bratu22@yahoo.com
International expert Prof. Dr. Keles Ozgul	Istanbul Technical University, Turkey	ozgulkeles@itu.edu.tr 00 90 530 465 53 58
PhD student Alexandra-Ileana Portoaca	Petroleum-Gas University of Ploiesti	alexandra.portoaca@upg- ploiesti.ro

Historical Background;

22.07.1997: Institution of University Doctoral Studies by the approving of CNATDCU (National Council for Attestation of University Degrees, Diplomas and Certificates).

23.07.1997: University of Pitești has received the right to organize matriculation at doctoral studies in the scientific branch named TECHNICS, at the specializations Technical Mechanics and Mechanical Vibrations, Technology of Machines' Construction, Automobiles and Tractors. Ministry of Instruction number 11128.

1999: Granted designations of I.O.D. and I.O.S.U.D.

1999. I.O.D. fundamental doctoral domain Engineering Sciences (Mechanical Engineering, Industrial Engineering, and Automotive Engineering),

2000: I.O.D. **the domains Science and Engineering of Materials**, Electronic Engineering and Telecommunications, Mathematics and Informatics,

2005: I.O.D. in the domain Biology.

¹ Each time when applicable the information shall be presented gender-wise.



29.09.2016: The doctoral schools within UPIT are confirmed to be parts of IOSUD - UPIT, by OMENCS number 5382/2016.

2020-2021: The reorganization of the doctoral schools within UPIT, by the Decision of the Senate of UPIT, 32/29.03.2021. The doctoral schools of Biology, Mathematics, Informatics and Mechanical Engineering being merged in the Interdisciplinary Doctoral School.

The university has 10 doctoral domains (Materials Engineering, Electronic Engineering & Telecommunications & Informational Technologies, Industrial Engineering, Mechanical Engineering, Mathematics, Informatics, and Biology, these being 7 out of the 10 doctoral domains within UPIT.) and 7 are in operation.

The total number of PhD theses directors through the years between 2016-2022 almost the same which is 20. Now, in the Interdisciplinary Doctoral School are affiliated 17 PhD directors of theses, where of 2 in the field of Materials Engineering.

The number of PhD student has seen to be increasing through the years from 2-7. However, there has been a steep increase in 2020-2021 to 13. Till 2022-2021 the number of student who had grant was in average 6 this year it is 4. There has been an increase in the number of student enrolled with fee (7) due to the effort of advisors in the university. They convinced their students to pursue their study after having bachelorate degree. Number of foreign student is in between 1-3 in between the 2016-2022 academic years.

Between 2016- 2022 academic periods the total number student who had the doctoral degree is 26 and in 2021-2022, 3 degree out of 4 is from Materials Engineering Domain. No degree is given in 2017-2018.

The total number of active student in the domains are 46. In materials engineering there is 18 of them active.

The context of the school is structured well by **mission, vision, strategies and objectives** as written in their web site and reports as follows;.

“The mission of the Interdisciplinary Doctoral School is to continuously assure and enrich the environment of scientific formation of the PhD students, in order to generate the knowledge and to achieve excellent results in the processes of scientific research, development, innovation and transfer of know-how to the domestic and foreign society, answering in this way to its necessity to progress”.

IOSUD University of Pitesti assumes its didactic and research mission, by achieving the trinomial of the modern university: education - research - community services, as follows:

- Training of doctoral students in order to obtain the necessary skills to carry out scientific research at high quality standards, to meet the need for competence of the socio-economic environment and to adapt to permanent changes.
- Generation and transfer of knowledge through fundamental and applied scientific research, development, innovation and technology transfer, individual and collective creation, relevant and significant at regional, national and international level, of PhD students.
- Promoting and developing partnerships at local, regional, national and international levels in order to involve IOSUD University of Pitesti in solving community problems and increasing visibility and prestige”.



<https://www.upit.ro/en/academia-reorganizata/studii-de-doctorat/iosud>

The vision of IOSUD University of Pitesti is to excel as an institution of modern and dynamic scientific education and research, based on competitiveness and quality, active and integrated in the local, regional, national community and in the European Area of Higher Education. IOSUD University of Pitesti aims to affirm and consolidate a distinct regional/national/international identity through the mission, norms and values assumed, meant to give it visibility and prestige”.

The strategy and objectives:

Annually, based on the Annual National Strategy for Research, Development and Innovation plan, an Internal Research Development and Innovation Plan (PICDI) is made by the Faculty of Mechanics and Technology. Following this plan main research directions and topics in Materials Engineering are proposed. These are;

- elaboration and characterization of nanomaterials with special properties,
- study of corrosion processes and corrosion protection;
- advanced characterization of materials;
- research on the behaviour of materials in different mechanical, thermal conditions and in aggressive environments;
- treatments applied to increase the performance and reliability of the products;
- research on materials for C.B.R.N sensors;
- development of new materials in accordance with economic needs and the national research-development-innovation strategy.

Findings are shared with the scientific communities via presentations, workshops and published materials in international and national levels.

II. Methods used

The methods used in the evaluation were as follows;

- The analysis of the internal evaluation report of the doctoral study domain under review and its

Annexes.

- The analysis of documents, data and information available on the IOSUD/Doctoral School(s) website, in electronic and physical format.
- Face to face meeting with all stajke holders,
- Visiting laboratories and centers that doctoral studies are done.

• Meeting/discussions with the representative of the University Senate, and CSUD

The meeting is held on 17th of May, 2023. In the meeting the representatives explain how they operate the university and the domains. They are making university strategies and objectives considering national regulations and laws. They are also aware of the importance of Materials domain. They have some international relations with France, Morocco, Egypt and they would like to increase collaboration with their universities. They have efforts to improve the domain. One of the effort to have published materials in high impact journals, they are going to design a process for proof reading. They were aware of the importance of supporting students financially in their studies and they are looking ways to attract more students to the domain.

• Meeting/Discussions with the doctoral advisors

In the meetings with the advisors explained how they managed the doctoral studies. Mentioned about the students quality and how hard to find hard working students. They were very happy to run



interdisciplinary PhD. studies. One issue was providing finance for the students. The other issue is that since the salaries of the academics are low, it is very hard to motivate people to be in the academia after the graduation. And, along with their research activities work load of the advisors seem to be very much.

• Meeting/Discussions with employers of the graduates in the doctoral study domain under review;

The face to face meeting is done on 17th of May, 2023. Employers were very satisfied with the quality of the graduates. They shared the success of the graduates in their business and how the graduates improve the processes in the institutes hired. One of the employees which was also the center of laboratory has told that he hired 4 of the graduates from the materials domain and 3 PhD candidates are studying in his laboratory. There was another employee from a nuclear institute, the students make their Ph.D. studies but it is hard for students to make papers without permission of the institute. In the institute they have to review the thesis before the exam and most of the time some information is kept secret and not written in the thesis.

Large companies are interested in hiring the students and/or graduates but small companies are not well aware of the value having Ph.D students or graduates in Materials Engineering.

• • Meeting/discussions with doctoral students in the doctoral study domain under review;

On 18th of May, 2023, a face to face meeting with doctoral student is done. They explained themselves in English very well. One student has joined online. One erasmus student has also joined. She is doing her PhD. in Morocco and Egypt. One of the student had an opportunity to be international in Switzerland.

Students are talked freely and they have shared their opinions. Most of them were happy with the education they get and their PhD. studies being managed. They are free to choose their PhD coordinators (advisor).

They also mentioned that equipments were enough to make their study and they have access to them. If they do not have the equipment with collaboration of other universities they can manage to sustain the study.

There is a great communication and collaboration among doctoral students. They have shared their experiences going abroad during their study. They can share their opinions with the management freely.

The improvement areas suggested were;

- to see the meeting decisions related with their domain in the web site,
- the funding for making the experiments and characterization should be raised,
- funding for publishing open access articles.

• Meeting/Discussions with the graduates

The meeting with the alumni is made on 18th of May, 2023. There was two alumni in physical and the others were online. They are very happy to be the quality of the education.

One of the alumni graduated in 2008, along with her PhD. Study, she worked in a research project as a member of the project and her education helped in her professional life. One of the alumni has had a double degree and she is in the process of recruitment in the private sector. One of the alumni has finished her study in 2005. She had a dual degree and working as a quality manager. Her recommendation is to make more collaboration with industry. Industry should support more to students. Her company is supporting the Bachelor and Masters degree students. They have an intention to support the Ph.D. students.



Another alumni has had an dual diploma. Having dual diploma with France has opened his professional life. He was in one of the Institute in Czech Republic. The collaboration with industry should be increased and salaries and other financial supports for students should be increased to attract more students.

The other one has done the PhD. in collaboration of the university in Bucharest. One of the other has had her PhD. 2022.

One of the other alumni also has had a dual degree with a university in France in 2011. This also helped him a lot in finding job. He is a director of Innovation.

In general their recommendations are;

- attraction of applicant is candidates is very important,
- and more Erasmus opportunities should be followed,
- financial support must be improved,
- collaboration between universities are important,
- interest of industry and their support to the PhD studies and students are necessary.
- the university should find ways to collaborate with the industry by protocols.

• **Meeting with Ethics Commission**

The meeting is done on the 18th of May, 2023. The representative of the commission has mentioned that there is a mandatory course on Ethics. There is also a software for plagiarism. There is one case in the university. An international student has used his father name in his article. His excuse was this was a cultural habit. The university made the paper retracted. And, he has modified his thesis.

• **Meeting/Discussions with the Interdisciplinary School of Doctorate and with Doctoral Schools Council (CSD) members**

The meeting is done on the 18th of May, 2023. In the meeting the representatives explain how they operate the domains. The council has 3 members, one of them is a student the other two are professors. There are 6 domains in the school. The council decide on the regulations and review the implementation of regulations. If it is necessary they can integrate the regulations to the international regulations.

They are aware of supporting students financially in their studies. They have systems and funding sources for these activities.

• **Meeting with the Quality Assessment and Assurance Commission**

With the representative of quality is done on the 18 th of May 2023. The university has ISO 9001-2015 certificate. They have reports on education quality. And, every two year they get external evaluation for ISO 9001-2015.

They make a survey for the satisfaction of students (2. C 1.1.2.1., 2. C 1.1.2.2., 2. C 1.1.2.3). the documents are for the satisfaction given. The results are seen.



III. Analysis of ARACIS's performance indicators

Domain A. INSTITUTIONAL CAPACITY

The doctoral university studies are structured and managed by the Regulations.

Criterion A.1. The administrative, managerial institutional structures and the financial resources

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

An effective functioning mechanism is built via regulations for the organization and the mechanism is implemented to run the doctoral studies successfully.

Performance Indicator A.1.1.1. *The existence of specific regulations and their application at the level of the Doctoral School of the respective university doctoral study domain:*

(a) the internal regulations of the Doctoral School;

Regulation named "1.1.1.2 Regulation on the organization and conduct of doctoral university studies" have been made on the organization and development of doctoral university studies in the IOSUD University of Pitești.

In the Interdisciplinary Doctoral School, another regulation is implemented so called 1.1.1.6 Regulation on the organization and development of doctoral university studies.

(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 CSD and the evidence of their conduct;

The election methodology for the Council for doctoral studies (CSUD) in the university has been designed and implemented by 2.A.1.1.1.1 Election methodology CSUD,

The election of the members of the Council of the Interdisciplinary Doctoral School has been made by 2.A.1.1.1.2 Methodology.

There is a methodology (2.A.1.1.1.3 Methodology for conducting the competition for the position of director of the Council of Doctoral Studies (CSUD) to conduct the competition for the position of CSUD director. The nominal composition of CSUD is given in 2.A.1.1.1.4 CSUD & CSD_2021 component.

The election of CSUD Director takes place every 4 year. The last one is done in 2020 and term ends in 2024.

c) the Methodologies for organizing and conducting doctoral studies (for the admission of doctoral students, for the completion of doctoral studies);

For the methodology for the admission of doctoral students is explained in 2.A.1.1.1.5. And, the methodology for Interdisciplinary Doctoral School is given 1.1.1.6 Regulation on the organization and conduct of doctoral studies within the Interdisciplinary Doctoral School.

As far as the methodology is concerned for completing doctoral studies and defending the doctoral thesis in the University of Pitești, is regulated through 1.2.2.6 Methodology for completing doctoral studies and defending the doctoral thesis within UPIT.



These regulations could be revised through the proposal and review of CSD and CSUD, at the end of approval of the university Senate. This kind of approvals should be made at least 6 months before the admission calendar.

d) the existence of mechanisms for recognizing the status of a Doctoral advisor and the equivalence of the doctoral degree obtained abroad;

In the objective of the school ; a statement is made "training of UPIT teaching staff with activities within the doctoral field through documentation strategies and exchanges of experience in similar institutions in the country and abroad; which show the intention of the school.

There is a regulation for the organization and conduct of university doctoral studies in the Interdisciplinary Doctoral School and a regulation on the automatic recognition by the University of Pitesti of the quality of doctoral supervisor obtained in accredited higher education institutions abroad so called 2.A.1.1.7 PO regarding the automatic recognition by the University of Pitesti of the quality of doctoral supervisor obtained in accredited higher education institutions from abroad.

e) functional management structures (Council of the doctoral school), giving as well proof of the regularity of meetings;

The Council of the Interdisciplinary Doctoral School, have been meeting through Skpe. Meeting announcements were in the Annexes.

f) the contract for doctoral studies;

There is a contract and contract in Annex 1.2.2.4 and also seen in the file on 17.05.2023 as a proof.

g) internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs based on advanced academic studies.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Internal procedures are available and proposals, report and thesis are examined during the visits as evidence.

It is talked that the topics of the doctoral study programs are established through direct discussions and consultations with the members of the Doctoral School Council, considering the Internal Plan for Research-Development-Innovation. The doctoral student proposes the topic together with the scientific director, the Doctoral School Council analyses made their analysis together with the scientific director, and decide on the topic and the contract prepared accordingly. The advanced training program and the structure of the scientific research program are designed by the scientific director and the doctoral student and are approved by the Doctoral School Council.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself.

Recommendations:

The documents are available and in operation. **The indicator is fulfilled.**



Performance Indicator A.1.1.2. *The doctoral school' Regulation includes mandatory criteria, procedures and standards binding on the aspects specified in Article 17, paragraph (5) of the Government Decision No. 681/2011 on the approval of the Code of Doctoral Studies with subsequent amendments and additions.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Regulations made includes all the criteria, procedures and mandatory standards mentioned in Art.17, par. 5 of GD 681/2011:

“(a) Article 43 makes specific references to the method of acceptance of new members of PhD Supervisors.

(b) Art. 52 and art.95 provide the modalities by which the quality of member of the Interdisciplinary Doctoral School may be withdrawn from a doctoral supervisor.

(c) Article 67 and art.75 specific the mechanisms by which decisions are taken regarding the appropriateness, structure and content of the training program based on advanced university studies.

(d) Art. 50 and art. 14 describe the procedures for changing the doctoral supervisor or a member of the steering committee / mentor for a certain doctoral student and the procedures for mediating possible conflicts.

(e) Art. 72 specifies the situations in which the doctoral program may be interrupted, taking into account the fact that this aspect is often encountered. Thus, the specific aspects generated by: the actual interruption (art. 72 para. 1 (ad), extension (art. 73 para. 2 (ad), the grace period (art. 74) and the postponement are extensively treated). Although less likely, the measures taken in situations of non-acceptance of the doctoral thesis when defending before the mentors or following the analysis by CNADTCU are analyzed in Article 88 paragraphs 3 and 4.

(f) Awareness of respect for intellectual property is cultivated throughout doctoral studies, including the introduction of a course on ethics in the first year of study. However, for the prevention of fraud in scientific research, including plagiarism, Article 82 paragraphs 1-4 deals with the methods of prevention, but also the measures that can be taken to ascertain this irregularity.

(g) The access of doctoral students to the research resources of the school or research centers of the university is regulated by art. 17 para. 1-3, from The regulation of organization and functioning of doctoral studies in the Interdisciplinary Doctoral School (Annex 1.1.1.6).

(h) The form of education in the Interdisciplinary Doctoral School is based on attendance, according to the methodologies elaborated by the Ministry of National Education (art. 18 paragraphs 1-3, Annex 1.1.1.6), and the doctoral supervisor establishes the place of attendance (in the university or in some research-development units with which agreements or institutional partnerships are concluded by IOSUD - University of Pitești). “

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The documents are available and in operation. **The indicator is fulfilled.**

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.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

UPIT has a software for the monitoring doctoral students through their academic career. The software is Microsoft Access.



- annual record of doctoral students
- the team of mentors for each doctoral student
- the training program of the doctoral student (study disciplines, scientific reports, etc.)
- timely planning of activities (exams, support reports, etc.);

There is also a software named Turnitin to check the plagiarism and limits for the similarities are determined by regulations.

The software check is mandatory for doctoral theses before defending.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The documents are available and in operation. **The indicator is fulfilled.**

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

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

The software is Turnitin and there is a proof of usage.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The documents are available and in operation. **The indicator is fulfilled.**

Performance Indicator A.1.3.1. *Existence of at least one research or institutional / human resources development grant under implementation at the time of submission of the internal evaluation file, per doctoral study domain under evaluation, or existence of at least 2 research or institutional development / human resources grant for the doctoral study domain, obtained by doctoral thesis advisors operating in the evaluated domain within the past 5 years. The grants address relevant themes for the respective domain and, as a rule, are engaging doctoral students.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Following Ministerial Order, the University of Pitești has granted 1,295,270 RON for the salaries of researchers employed fixed-term employment contract.

2 PhD students in the field of Materials Engineering has had the salary paid and they also support them for accessing scientific documentation resources (prices with VAT) such as Science Direct, MathSciNet, Scopus.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The documents are available and in operation. **The indicator is fulfilled.**



Performance Indicator *A.1.3.2. *The percentage of doctoral students active at the time of the evaluation, who for at least six months receive additional funding sources besides government funding, through scholarships awarded by individual persons or by legal entities, or who are financially supported through research or institutional / human resources development grants is not less than 20%.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

3 PhD students has supported by the state budget and 3 of them granted via international collaborations (Mansoura University- Egipt, ENEA - Italy and Ansbach University- Germany.

4 PhD students (Valentin Călinescu, Ana Maria Dicu, Ovidiu Udrescu and Ion Pătrașcu), 50%, are financially supported by 50% via research grants.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The documents are available and in operation. **The indicator is fulfilled.**

Performance Indicator *A.1.3.3.² *At least 10% of the total amount of doctoral grants obtained by the university through institutional contracts and of tuition fees collected from the doctoral students enrolled in the paid tuition system is used to reimburse professional training expenses of doctoral students (attending conferences, summer schools, training, programs abroad, publication of specialty papers or other specific forms of dissemination etc.).*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

The available funds annually for research and professional training of the doctoral students is over 5%.

Added to the funds (doctoral grants and tuition fees) the university has procedures to encourage scientific research and excellence such as reimbursement of expenses for publication and participation in scientific events. Plus, to motivate young researchers with excellent results to benefit funding sources to cover their training expenses.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The documents are available and in operation. **The indicator is fulfilled.**

² The indicators marked with an asterisk (*) hold a special status, referring exclusively to the evaluation of doctoral studies domains, as per Article 12 from the annex No.1 of the Order of the minister of education No. 3651/12.04.2021 approving the Methodology for evaluating university doctoral studies and the system of criteria, standards and performance indicators used in the evaluation. In case they are not met, the Agency extends a period of maximum 3 years to IOSUD to correct the respective deficiencies.



Criterion A.2. Research infrastructure

Research infrastructure is well built for research activities within the doctoral specializations for the field of Materials Engineering and research centers were well managed.

Standard A.2.1. The IOSUD has a modern research infrastructure to support the conduct of doctoral studies' specific 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.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Infrastructure is very rich and consists of laboratories and centers. Added to this, the infrastructure is well preserved. All students has a easy access to these facilities. They have mentors and experts. Library has an access to national and international databases.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The documents are available and in operation. **The indicator is fulfilled.**

Criterion A.3. Quality of Human Resources

Standard A.3.1. At the level of each domain there are sufficient qualified staff to ensure the conduct of doctoral study program.

The number of advisors are enough to carry out high quality doctoral studies. The quality of advisors is impressive and adequate number of doctoral advisors are available.

Performance Indicator A.3.1.1. *Minimum three doctoral thesis advisors 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.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

In Materials Engineering there are **2 advisors rather than 3.**

1. Prof. emeritus dr. Eng. Abrudeanu Mărioara (quality acquired according to the Order of the Minister of National Education no.5203 / 23.11.2000, (Annex 2.A.3.1.1.1 VS of fulfillment of min std CNATDCU_Abrudeanu, Annex 2.A.3.1.3.2 CV Abrudeanu M.)



2. Prof.univ.dr.habil. Schiopu Adriana-Gabriela (authorization according to OMEN no. 5819 / 27.12.2017 (Annex 2.A.3.1.1.2 VS of fulfillment of min std CNATDCU_Schiopu, Annex 2.A.3.1.3.4 CV Schiopu A.G.)

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

There is a need for more advisor. **The indicator is not fulfilled.**

Performance Indicator *A.3.1.2. At least 50% of all doctoral advisors have a full-time employment contract for an indefinite period with the IOSUD.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Since there are 2 doctoral advisors in the domain Dr. Adriana-Gabriela Schiopu is employed in IOSUD-UPIT on the basis of an indefinite employment contract.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

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 lecturer / 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.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

All the academics in the domain have PhD. degree and have expertise in the field.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Performance Indicator *A.3.1.4. The percentage of doctoral thesis advisors who concomitantly coordinate more than 8 doctoral students, but no more than 12, who are themselves studying in doctoral programs³ does not exceed 20%.

³ 3 years for the doctoral university studies with the duration stipulated at Article 159, paragraph (3), respectively 4 years for the doctoral university studies with the duration stipulated at Article 174, paragraph (3) of the Law of national education No.1/2011 with subsequent amendments and additions, with additional extension periods approved as per Article 39, paragraph (3) of the Code of doctoral studies approved by the GD No. 681/2011 with subsequent amendments and additions.



- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

In the academic year 2020-2021, there are 14 students enrolled, 4 student is in their writing period (grace) , 5 doctoral students are with grant and 5 with tuition fee. No advisors have no more than 8 thesis.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself.

Recommendations:

The indicator is fulfilled.

Standard A.3.2. The Doctoral advisors within the domain are carrying out a scientific activity visible at international level. The faculty members have international level research activities and outcomes.

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 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 defense 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 organizing committees of arts events and international competitions, membership on juries or umpire teams in artistic events or international competitions.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

The supervisors in the Materials Engineering domain have international visibility. They have participated international activities such as;

- members in the scientific committees of international publications and conferences,
- board members international professional associations (M. Abrudeanu: Full member of the Romanian Academy of Technical Sciences, AG Plăiașu: Member of the Romanian Chemical Society, Member of the Professional Association Modern Manufacturing Technologies MODTECH),
- Member of the CRIFST Association, Argeș branch. co-supervised with a foreign university. (M. Abrudeanu - Iuliu Trifa, A.G. Plăiașu - COST committee member).
- They have organized workshops on research and innovation in the field of materials engineering (International Workshop on Technology and Materials Engineering IWTME '2021, (<http://ecai.ro/iwtme%27-2021>, workshop, (<http://ecai.ro/iwtme%27-2021>, workshop <http://upitmedia.ro/index.php/evenimente/item/797-workshopul-energie-pentru-viitor-reactoare-nucleare-de-generatie-iv-alfred-joi-17-octombrie>, <http://upitmedia.ro/index.php/evenimente/item/837-imbunatatirea-performantelor-de-cercetare->



prin-participarea-institutiilor-in-consortii-cdi-in-domeniile-prioritare-workshop-la-universitatea-din-pitesti)

- They have 42 relevant scientific publications (indexed Web of Science) and 2 patents
- Their Hirsh indices of doctoral supervisors are well.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

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 five years.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

The supervisors are scientifically active, fulfilling their performance scores required in the CNATDCU minimum standards. The last five years, Prof. Dr. Chim.Habil. Adriana-Gabriela Plăiașu has had more than 25% of the score which is required by CNATDCU standards.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.



Domain B. EDUCATIONAL EFFECTIVENESS

In general, the institution has capability and capacity to have more number of students.

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

Standard B.1.1. The institution organizing doctoral studies has the capacity to attract candidates from outside the higher education institution or a number of candidates exceeding the number of seats available.

Performance Indicator *B.1.1.1. *The ratio between the number of graduates of masters' programs of other higher education institutions, national or foreign, who have enrolled for the doctoral admission contest within the past five years and the number of seats funded by the state budget, put out through contest within the doctoral domain is at least 0.2 or the ratio between the number of candidates within the past five years and the number of seats funded by the state budget put out through contest within the doctoral studies domain is at least 1,2.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

They have intentions and system to built diversity. In the last 5 years, 11 candidates have admitted in the domain.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

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

Senate has approved a methodology based on competition for admission and it has been updated annually.

Performance Indicator *B.1.2.1. *Admission to doctoral study programs is based on selection criteria including: previous academic, research and professional performance, their interest for scientific or arts/sports research, publications in the domain and a proposal for a research subject. Interviewing the candidate is compulsory, as part of the admission procedure.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

There are selection criteria for the admission into doctoral domain. These criteria includes the academic, research and professional performance of the candidates, their interest in scientific or artistic / sports research, publications in the field and a research topic proposal. There are regulations available for the admission.



- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The documents are available and in operation. **The indicator is fulfilled.**

Performance Indicator B.1.2.2. The expelling rate, including renouncement / dropping out of doctoral students 3, respectively 4, years after admission⁴ does not exceed 30%.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

No student is dropped the study.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Criterion B.2. The content of doctoral programs

Standard B.2.1. The training program based on advanced university studies is appropriate to improve doctoral students' research skills and to strengthen ethical behavior in science.

Performance Indicator B.2.1.1. The training program based on advanced academic studies includes at least 3 disciplines relevant to the scientific research training of doctoral students; at least one of these disciplines is intended to study in-depth the research methodology and/or the statistical data processing.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

The advanced university studies is carried out in the first year of study through 4 compulsory disciplines;

- Mechanical Engineering,
- Mechatronics,
- Industrial Engineering and Management
- two disciplines by each doctoral supervisor according to the skills and research topics of the students.

Course syllabuses are available.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The documents are available and in operation. **The indicator is fulfilled.**

⁴ 3 years for the doctoral university studies with the duration stipulated at Article 159, paragraph (3), respectively 4 years for the doctoral university studies with the duration stipulated at Article 174, paragraph (3) of the Law of national education No. 1/2011 with subsequent amendments and additions.

Performance Indicator 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.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

There is one discipline dedicated on "Ethics and academic integrity, intellectual property rights".

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The documents are available and in operation. **The indicator is fulfilled.**

Performance Indicator B.2.1.3. *The IOSUD has mechanisms to ensure that the academic training program based on advanced university studies addresses „the learning outcomes“, specifying the knowledge, skills, responsibility and autonomy that doctoral students should acquire after completing each discipline or through the research activities⁵.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

The procedures are made to fit into the requirements. They have mechanisms to ensure that the training program based on advanced university studies of a doctoral field aims at "learning outcomes, at level 8 EQF / CNC by the Recommendation of the Council of the European Union of 22.05.2017, on the European Framework of Qualifications.

In the procedures the competences, skills and attitudes of the doctoral students after completing their study are given.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The documents are available and in operation. **The indicator is fulfilled.**

Performance Indicator B.2.1.4. *All along the duration of the doctoral training, doctoral students in the domain receive counselling/guidance from functional guidance commissions, which is reflected in written guidance and feedback or regular meeting.*

⁵ Or by what the graduate should know, understand and to be able to do, according to the provisions of the Methodology of 17 March 2017 regarding inscription and registration of higher education qualifications in the National Register of Qualifications in Higher Education (RNCIS) approved by the Order No.3475/2017 with subsequent amendments and additions.



- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Students throughout their study have counseling and guidance of some guidance commissions. They get their counseling / guidance via regular meetings and e-mails. They have a very strong realtions with the academics in the domain.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Performance Indicator B.2.1.5. For a doctoral study domain, the ratio between the number of doctoral students and the number of teaching staff/researchers providing doctoral guidance must not exceed 3:1.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

The ratio is met (17/9).

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Criterion B.3. The results of doctoral studies and procedures for their evaluation.

Standard B.3.1. Doctoral students capitalize on the research through presentations at scientific conferences, scientific publications, technological transfer, patents, products and service orders.

Performance Indicator B.3.1.1. For the evaluated domain, the evaluation commission will be provided with at least one paper or some other relevant contribution per doctoral student who has obtained a doctor's title within the past 5 years. From this list, the members of the evaluation commission shall randomly select 5 such papers / relevant contributions per doctoral study domain for review. At least 3 selected papers must contain significant original contributions in the respective domain.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

In the last 5 years, 4 graduates (Ionuț Alexandru Nițu, Ecaterina Magdalena GORGOI (MODAN), Laura Teodorescu, Mădălina STĂNCIULESCU) have graduted and 8 paper have been published.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:



The indicator is fulfilled.

Performance Indicator *B.3.1.2. *The ratio between the number of presentations of doctoral students who completed their doctoral studies within the evaluated period (past 5 years), including posters, exhibitions made at prestigious international events (organized in the country or abroad) and the number of doctoral students who have completed their doctoral studies within the evaluated period (past 5 years) is at least 1.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

In 2018 has been 5 scientific papers at prestigious international scientific events and journals published. And, in 2022, 4 papers have been published.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Standard B.3.2. *The Doctoral School engages a significant number of external scientific specialists in the commissions for public defense of doctoral theses in the analyzed domain.*

Performance Indicator *B.3.2.1. *The number of doctoral theses allocated to one specialist coming from a higher education institution, other than the evaluated IOSUD should not exceed two (2) in a year for the theses coordinated by the same doctoral thesis advisor.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

In the last 5 years, 4 graduates defended their doctoral thesis. 8 reviewers from other higher education institutions have been available. The public steering committee have two specialists in the field from Pitesti Nuclear Research Institute, a doctoral supervisor from the Polytechnic University of Bucharest, a doctoral supervisor from Gheorghe Asachi Technical University of Iași, a doctoral supervisor from the University of Pitești, the scientific supervisor of the thesis, and the president was the CSUD Director, specialist in Materials Physics.

The supporting committees have been published at: [https://www.upit.ro/ro/Thesis commison](https://www.upit.ro/ro/Thesis%20comission). There are no 2 theses coordinated by the same tutor by the same doctoral theses advisors.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.



Performance Indicator *B.3.2.2. *The ratio between the doctoral theses allocated to one scientific specialist coming from a higher education institution, other than the institution where the defense on the doctoral thesis is organized, and the number of doctoral theses presented in the same doctoral study domain in the doctoral school should not exceed 0.3, considering the past five years. Only those doctoral study domains in which minimum ten doctoral theses have been presented within the past five years should be analyzed.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

In the last 5 years, there have been 4 graduates. So the ratio is met.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Domain C. QUALITY MANAGEMENT

There are methodologies on the internal evaluation of the Interdisciplinary Doctoral School and periodic internal evaluation of the doctoral supervisors' activity.

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

There are documentation and implementation of internal quality assurance system.

Standard C.1.1. There are an institutional framework and procedures in place and relevant internal quality assurance policies, applied for monitoring the internal quality assurance.

**general description of the standard analysis.*

Performance Indicator C.1.1.1. *The Doctoral school in the respective university study domain shall demonstrate the continuous development of the evaluation process and its internal quality assurance following a procedure developed and applied at the level of the IOSUD, the following assessed criteria being mandatory:*

(a) the scientific work of Doctoral advisors;

(b) the infrastructure and logistics necessary to carry out the research activity;

(c) the procedures and subsequent rules based on which doctoral studies are organized;

(d) the scientific activity of doctoral students;

(e) the training program based on advanced academic studies of doctoral students;

(f) social and academic services (including for participation at different events, publishing papers etc.) and counselling made available to doctoral students.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

They have ISO 9001-2015 certificate and they have all the documents and their running the system accordingly.



- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Performance Indicator *C.1.1.2. Mechanisms are implemented during the stage of the doctoral study program to enable feedback from doctoral students allowing to identify their 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.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

They have surveys done to the students to get their opinions.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

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

There are databases and accesibility to these data bases are well established. Web of science, scopus, springer links, etc.

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

*general description of the standard analysis.

Performance Indicator C.2.1.1. The IOSUD publishes on the website of the organizing institution, in compliance with the general regulations on data protection, information such as:

- (a) the Doctoral School regulation;
- (b) the admission regulation;
- (c) the doctoral studies contract;
- (d) the study completion regulation including the procedure for the public presentation of the thesis;
- (e) the content of training program 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 within the domain with necessary information (year of registration; advisor);
- (h) information on the standards for developing the doctoral thesis;
- (i) links to the doctoral theses' summaries to be publicly presented and the date, time, place where they will be presented; this information will be communicated at least twenty days before the presentation.



- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

All the documents are in the website.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Standard C.2.2. The IOSUD/The 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.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

All students have free access to these databases. They have a computer software (www.turnitin.ro) to verify the percentage of similarity.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

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

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

They have a Turnitin software. They have access to the system through their advisor.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

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 internal order procedures.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

They have free access to the laboratories and they have been getting help through their studies.



- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Criterion C.3. Internationalization

There are agreements to internationalize the doctoral students through ERASMUS+ inter-institutional agreements.

Performance Indicator *C.3.1.1. IOSUD, for every evaluated domain, has concluded mobility agreements with universities abroad, with research institutes, with companies working in the field of study, aimed at the mobility of doctoral students and academic staff (e.g., ERASMUS agreements for the doctoral studies). At least 35% of the doctoral students have completed a training course abroad or other mobility forms such as attending international scientific conferences. IOSUD drafts and applies policies and measures aiming at increasing the number of doctoral students participating at mobility periods abroad, up to at least 20%, which is the target at the level of the European Higher Education Area.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

They have been having strong international collaborations with 14 universities and French "grandes écoles". They have Center for International Relations and the ERASMUS Office (<https://www.upit.ro/ro/international>). They have some mobility agreements with international universities.

They have had 3 theses with international co-supervisions (Valentin Călinescu PhD - Mansoura University, Nicolae Liviu Ciocîrlan PhD - Ansbach University of Applied Science, Germany and Ana-Maria Ivan PhD, ENEA Italy).

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Performance Indicator C.3.1.2. In the evaluated doctoral study domain, support is granted, including financial support, to the organization of doctoral studies in international co-tutelage or invitation of leading experts to deliver courses/lectures for doctoral students.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

8 doctoral study have been done via co-supervision with international universities. Muhammed Sallah is invited to give lecture to the students (8 March 2023). Students have been sent to take courses from abroad.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself



Recommendations:

The indicator is fulfilled.

Performance Indicator C.3.1.3. *The internationalization of activities carried out during the doctoral studies is supported by IOSUD through concrete measures (e.g., by participating in educational fairs to attract international doctoral students; by including international experts in guidance committees or doctoral committees etc.).*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

There are many examples available for international activities made in the domain. And regulations are designed to encourage the activities.

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.



IV. SWOT Analysis

<p><u>Strengths:</u></p> <ul style="list-style-type: none"> -strong knowledge and expertise of academicians. - strong communication between professors and students. -international relations are available with France, Egypt and Morocco. -constructive and democratic culture in the domain. - opportunities available going abroad for students their research (attending conferences and Erasmus) -infrastructure is adequate and research centers have significant impressive infrastructure . -institutes and centers have a strong relations with the domain. -relations with graduates as well as employers are well. -students speak out freely. 	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - the number of professors/advisors. -although system and procedures available are for students they were not read by them. -number of students and international ones are low. -financial resources for students is inadequate. - salaries of the academicians are low -academicians has other administrative duties than teaching and research. -insufficient funding of research provided by the government and the university.
<p><u>Opportunities:</u></p> <ul style="list-style-type: none"> - finding new funds for the research and scholarships from EU and national government. - accessing non EU students via some protocols between domains from non EU countries. -interdisciplinary programs can be designed with companies. -nationwide post doctoral position can be designed. -University has a literature faculty, it would be easier for them to build proof reading office. 	<p><u>Threats:</u></p> <ul style="list-style-type: none"> - students have intentions to pursue their degree in other domains because materials domain needs hands on research. - insufficient funding for students. (Scholarships) -international competitions

V. 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 of the respective university doctoral study domain:</p> <p>a) the internal regulations of the Doctoral School;</p> <p>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 CSD and the evidence of their conduct;</p> <p>c) the Methodologies for organizing and conducting doctoral studies (for the admission of doctoral students, for the completion of doctoral studies);</p> <p>d) the existence of mechanisms for recognizing the status of a Doctoral advisor and the equivalence of the doctoral degree obtained abroad;</p> <p>e) functional management structures (Council of the doctoral school), giving as well proof of the regularity of meetings;</p> <p>f) the contract for doctoral studies;</p> <p>g) internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs based on advanced academic studies.</p>	Fulfilled	
2.	PI	<p>A.1.1.2. The doctoral school' Regulation includes mandatory criteria, procedures and standards binding on the aspects specified in Article 17, paragraph (5) of the Government Decision No. 681/2011 on the approval of the Code of Doctoral Studies with subsequent amendments and additions.</p>	Fulfilled	
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	
4.	PI	<p>A.1.2.2. The existence and use of an appropriate software program and evidence of its use to verify the percentage of similarity in all doctoral theses.</p>	Fulfilled	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
5.	IP	<p>A.1.3.1. Existence of at least one research or institutional / human resources development grant under implementation at the time of submission of the internal evaluation file, per doctoral study domain under evaluation, or existence of at least 2 research or institutional development / human resources grant for the doctoral study domain, obtained by doctoral thesis advisors operating in the evaluated domain within the past 5 years. The grants address relevant themes for the respective domain and, as a rule, are engaging doctoral students.</p>	Fulfilled	
6.	PI *	<p>A.1.3.2. The percentage of doctoral students active at the time of the evaluation, who for at least six months receive additional funding sources besides government funding, through scholarships awarded by individual persons or by legal entities, or who are financially supported through research or institutional / human resources development grants is not less than 20%.</p>	Fulfilled	
7.	PI *	<p>A.1.3.3. At least 10% of the total amount of doctoral grants obtained by the university through institutional contracts and of tuition fees collected from the doctoral students enrolled in the paid tuition system is used to reimburse professional training expenses of doctoral students (attending conferences, summer schools, training, programs abroad, publication of specialty papers or other specific forms of dissemination etc.).</p>	Fulfilled	
8.	CPI	<p>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</p>	Fulfilled	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		developed within the past 5 years will be presented distinctly		
9.	CPI	A.3.1.1. Minimum three doctoral thesis advisors 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.	Not Fulfilled	There needs to be three advisors. So, they need to increase the number of the advisor.
10.	PI *	A.3.1.2. At least 50% of all doctoral advisors have a full-time employment contract for an indefinite period with the IOSUD.	Fulfilled	
11.	PI	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 lecturer / 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	
12.	PI *	A.3.1.4. The percentage of doctoral thesis advisors who concomitantly coordinate more than 8 doctoral students, but no more than 12, who are themselves studying in doctoral programs does not exceed 20%.	Fulfilled	
13.	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	Fulfilled	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		of international publications and conferences; membership on boards of international professional associations; guests in conferences or expert groups working abroad, or membership on doctoral defense 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 organizing committees of arts events and international competitions, membership on juries or umpire teams in artistic events or international competitions.		
14.	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	Fulfilled	
15.	PI *	B.1.1.1. The ratio between the number of graduates of masters' programs of other higher education institutions, national or foreign, who have enrolled for the doctoral admission contest within the past five years and the number of seats funded by the state budget, put out through contest within the doctoral domain is at least 0.2 or the ratio between the number of candidates within the past five years and the number of seats funded by the state budget put out through contest within the doctoral studies domain is at least 1,2.	Fulfilled	
16.	PI *	B.1.2.1. Admission to doctoral study programs is based on selection criteria including: previous academic, research and professional performance, their interest for scientific or arts/sports research, publications in the domain and a proposal for a research subject.	Fulfilled	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		Interviewing the candidate is compulsory, as part of the admission procedure.		
17.	PI	B.1.2.2. The expelling rate, including renouncement / dropping out of doctoral students 3, respectively 4, years after admission does not exceed 30%.	Fulfilled	
18.	PI	B.2.1.1. The training program based on advanced academic studies includes at least 3 disciplines relevant to the scientific research training of doctoral students; at least one of these disciplines is intended to study in-depth the research methodology and/or the statistical data processing.	Fulfilled	
19.	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	
20.	PI	B.2.1.3. The IOSUD has mechanisms to ensure that the academic training program based on advanced university studies addresses „the learning outcomes”, specifying the knowledge, skills, responsibility and autonomy that doctoral students should acquire after completing each discipline or through the research activities.	Fulfilled	
21.	PI	B.2.1.4. All along the duration of the doctoral training, doctoral students in the domain receive counselling/guidance from functional guidance commissions, which is reflected in written guidance and feedback or regular meeting.	Fulfilled	
22.	CPI	B.2.1.5. For a doctoral study domain, the ratio between the number of doctoral students and the number of teaching staff/researchers providing doctoral guidance must not exceed 3:1.	Fulfilled	
23.	CPI	B.3.1.1. For the evaluated domain, the evaluation commission will be provided with at least one paper or some other relevant contribution per doctoral student who has obtained a doctor's title within the past 5	Fulfilled	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		years. From this list, the members of the evaluation commission shall randomly select 5 such papers / relevant contributions per doctoral study domain for review. At least 3 selected papers must contain significant original contributions in the respective domain		
24.	PI *	B.3.1.2. The ratio between the number of presentations of doctoral students who completed their doctoral studies within the evaluated period (past 5 years), including posters, exhibitions made at prestigious international events (organized in the country or abroad) and the number of doctoral students who have completed their doctoral studies within the evaluated period (past 5 years) is at least 1.	Fulfilled	
25.	PI *	B.3.2.1. The number of doctoral theses allocated to one specialist coming from a higher education institution, other than the evaluated IOSUD should not exceed two (2) in a year for the theses coordinated by the same doctoral thesis advisor.	Fulfilled	
26.	PI *	B.3.2.2. The ratio between the doctoral theses allocated to one scientific specialist coming from a higher education institution, other than the institution where the defense on the doctoral thesis is organized, and the number of doctoral theses presented in the same doctoral study domain in the doctoral school should not exceed 0.3, considering the past five years. Only those doctoral study domains in which minimum ten doctoral theses have been presented within the past five years should be analyzed.	Fulfilled	
27.	PI	C.1.1.1. The Doctoral school in the respective university study domain shall demonstrate the continuous development of the evaluation process and its internal quality assurance following a procedure developed and applied at the level of the IOSUD, the following assessed criteria being mandatory: a) the scientific work of Doctoral advisors; b) the infrastructure and logistics necessary to carry out the research activity;	Fulfilled	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		<p>c) the procedures and subsequent rules based on which doctoral studies are organized;</p> <p>d) the scientific activity of doctoral students;</p> <p>e) the training program based on advanced academic studies of doctoral students;</p> <p>f) social and academic services (including for participation at different events, publishing papers etc.) and counselling made available to doctoral students.</p>		
28.	PI *	<p>C.1.1.2. Mechanisms are implemented during the stage of the doctoral study program to enable feedback from doctoral students allowing to identify their 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.</p>	Fulfilled	
29.	CPI	<p>C.2.1.1. The IOSUD publishes on the website of the organizing institution, in compliance with the general regulations on data protection, information such as:</p> <p>a) the Doctoral School regulation;</p> <p>b) the admission regulation;</p> <p>c) the doctoral studies contract;</p> <p>d) the study completion regulation including the procedure for the public presentation of the thesis;</p> <p>e) the content of training program based on advanced academic studies;</p> <p>f) the academic and scientific profile, thematic areas/research themes of the Doctoral advisors within the domain, as well as their institutional contact data;</p> <p>g) the list of doctoral students within the domain with necessary information (year of registration; advisor);</p> <p>h) information on the standards for developing the doctoral thesis;</p> <p>i) links to the doctoral theses' summaries to be publicly presented and the date, time, place where they will be presented; this information will be communicated at least twenty days before the presentation.</p>	Fulfilled	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
30.	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	
31.	PI	C.2.2.2. Each doctoral student shall have access, upon request, to an electronic system for verifying the degree of similarity with other existing scientific or artistic works.	Fulfilled	
32.	PI	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 internal order procedures.	Fulfilled	
33.	PI *	C.3.1.1. IOSUD, for every evaluated domain, has concluded mobility agreements with universities abroad, with research institutes, with companies working in the field of study, aimed at the mobility of doctoral students and academic staff (e.g., ERASMUS agreements for the doctoral studies). At least 35% of the doctoral students have completed a training course abroad or other mobility forms such as attending international scientific conferences. IOSUD drafts and applies policies and measures aiming at increasing the number of doctoral students participating at mobility periods abroad, up to at least 20%, which is the target at the level of the European Higher Education Area.	Fulfilled	
34.	PI	C.3.1.2. In the evaluated doctoral study domain, support is granted, including financial support, to the organization of doctoral studies in international co-tutelage or invitation of leading experts to deliver courses/lectures for doctoral students.	Fulfilled	
35.	PI	C.3.1.3. The internationalization of activities carried out during the doctoral studies is supported by IOSUD through concrete measures (e.g., by participating in educational fairs to attract international doctoral students; by including international experts in guidance committees or doctoral committees etc.).	Fulfilled	



VI. Conclusions and general recommendations

Through the review of their documents and meetings, it is understood that, they have a good environment and quality system to educate doctoral students in the domain. There are some general recommendations to improve their systems;

- There needs to be three advisors to fulfill the A 3.1.1. So, they need to increase the number of the advisor.
- Financial resources or supports for students from industry would be beneficial for both sides.
- Separate budget for interdisciplinary work for professors to attract students and provide them some funding.
- In the admission process reserve spots for applicants who would like to do interdisciplinary study.
- A regulation is needed in national level for hiring graduates for Post Doctoral degree researchers. This may help the domain to have more international visibility because they can improve their projects and write more publications.
- Making a list of improvement made in the domain annually with all the needs and proofs. (corrective and improvement actions)
- More funding for professors to be mobile. (Attending conference may help them to make more international cooperations.)

Note: Evaluation plan and list of the people we had meeting with will be given by the head of the team Prof. Dr. Vasile Bratu.

VII. Annexes

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