Annex No. 3

The External Evaluation Report of a Doctoral Study Domain

Contents

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I. Introduction[1]

This evaluation report of the doctoral studies in mathematics field from the University of Pitești was carried out following the visit organized by the Romanian Agency for Quality Assurance in Higher Education (ARACIS) during the period April 26-28, 2023, according to the Guide for the conduct of the periodic external evaluation process in the fields of doctoral studies on 21.04.2021. The visit took place in the on-site system.

The following documents were the basis of the report's methodology: National Education Law no. 1/2011 with subsequent amendments and additions, Romanian Government Decision no. 681/2011 regarding the approval of the doctoral studies Code, Emergency Ordinance of the Government of Romania no. 75/2005 on ensuring the quality of education, approved with amendments and additions by Law no. 87/2006, respectively the Order of the Minister of Education no. 3651/2021 regarding the approval of the Evaluation Methodology of doctoral studies and the systems of criteria, standards and performance indicators used in the evaluation.

The members of the evaluative experts committee appointed for the mentioned visit are:

- **Vasile BERINDE, Full Professor Dr.**, Technical University of Cluj-Napoca, as coordinator of the visiting team;
- **Andrei PERJAN, Full Professor Dr.**, State University of Moldova, Moldova, as an international expert;
- **Constantin MUNTEANU, PhD student**, "Gheorghe Asachi" Technical University from Iași, as representative of doctoral students.

Doctoral and post-doctoral studies are organized within the Organizing Institution for Doctoral University Studies - University of Pitești, abbreviated as IOSUD-UPIT. The Mathematics doctoral field started within UPIT in 2000, when I.O.D. Mathematics was established. By the Decision of the UPIT Senate 32/29.03.2021, the Doctoral School of Mathematics was incorporated into the Interdisciplinary Doctoral

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

School (SDI), already existing within IOSUD-UPIT. This includes part of the doctoral fields of IOSUD-UPIT, namely: Materials Engineering, Electronic Engineering, Telecommunications and Information Technologies, Biology, Mathematics, Informatics and Mechanical Engineering. Doctoral schools in IOSUD-UPIT operate according to OMENCS order no. 5382/2016 of 29.09.2016. Currently, the Mathematics doctoral field is served by 3 doctoral supervisors.

II. Methods used

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

• The analysis of the internal evaluation report of the doctoral study domain under review and its Annexes;

• The analysis of documents made available by the IOSUD, in physical format, during the evaluation visit (if such documents have been requested);

• The analysis of documents, data and information available on the IOSUD/Doctoral School(s) website, in electronic format;

• Visiting the buildings included in the institution's property, comprising (indicative and non-exhaustive list, which shall be changed according to the context):

- classrooms;
- laboratories;
- the institution's library;
- research centers;
- the Career Counselling and Guidance Center;
- lecture halls for students;
- the student residences;
- the student cafeteria;
- sports ground etc.;

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

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

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

• Meeting/Discussions with the school officials of the Doctoral School(s) in which the doctoral study domain under review is operating;

• Meeting/Discussions with the doctoral advisors in the doctoral study domain under review;

• Meeting/discussions with the representatives of the various structures of the IOSUD/Doctoral School(s) in which the doctoral study domain under review is operating:

- The Council of the Doctoral School, the University Senate, the Board of Directors, the Quality Assessment and Assurance Commission, the Quality Assurance Department, the Ethics Commission (including with the student representatives of these structures);
- the Career Counselling and Guidance Center;
- student organizations;
- secretariats;
- various departments/administrative offices (Social/Student residences-Cafeterias etc.);

• Application of questionnaires to doctoral students or academic staff in the doctoral study domain under review.

III. Analysis of ARACIS's performance indicators

Domain A. INSTITUTIONAL CAPACITY

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.

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;

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;

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

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

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

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

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

This indicator is fulfilled within IOSUD-UPIT at the level of the Interdisciplinary Doctoral School (SDI), from which the field of doctoral studies in Mathematics belongs. The internal regulations governing the conduct of doctoral studies are as follows:

a) regulations of the doctoral school;

There is a Regulation for the organization and conduct of doctoral studies within the IOSUD University of Pitești, approved by the University Senate on 30.06.2022. Also, there is the Regulation on the organization and conduct of doctoral studies in the Interdisciplinary Doctoral School within the IOSUD University of Pitești, approved on 07.07.2021. It specifies that the management structure consists of the SDI Director and the Council of the Interdisciplinary Doctoral School (CSDI).

Annexes:

- Anexa I.1.1.2 Regulament privind organizarea si desfasurarea studiilor universitare de doctorat
- Anexa I.1.1.5 Comasare scoli doctorale Interdisciplinara
- Anexa I.1.1.8 Regulament Scoala Doctorala Interdisciplinara

b) the methodology for holding elections at the level of the doctoral school;

The methodology for conducting the elections is contained in several annexes, which specify the method of election of the members of the Doctoral School Council and of the Doctoral Program Coordination Councils, both from among teaching/research staff and among doctoral students. The position of director of the CSUD and members of the CSUD is held in compliance with the provisions of GD no. 134 of 02.03.2016 for the modification and completion of the Code of doctoral university studies, approved by GD no. 681 of 2011. The director of IOSUD is chosen by a competition committee. The composition of the Council for Doctoral University Studies (CSUD) of IOSUD University of Pitești consists of 11 members, including the director of CSUD. From these, one member, teaching staff, and one doctoral student are elected by universal vote of the doctoral supervisors, the other 8 CSUD members, doctoral supervisors, are appointed by UPIT Rector Decision, aiming for a fair and representative distribution of the doctoral fields. The election results are announced on the http://www.upit.ro webpage.
Annexes:

- Anexa II.A.1.1.1.1 Metodologia de desfasurare a concursului pentru functia de director al Consiliului Studiilor Universitare de Doctorat (CSUD)
- Anexa II.A.1.1.1.2 Metodologie alegeri CSUD UPIT
- Anexa II.A.1.1.1.3 Metodologie privind organizarea si desfasurarea procesului de selectare si alegere a structurilor de conducere a scolilor doctorale din IOSUD
- Anexa II.A.1.1.1.4 Calendarul de desfasurare a procesului de selectare si alegere a structurilor de conducere a Sc Doc
- Anexa II.A.1.1.1.5 Candidatii inscrisi la Concursul pentru Directori Scoli Doctorale
- Anexa II.A.1.1.1.6 Numirea directorilor scolilor doctorale sign
- Anexa II.A.1.1.1.7 Candidatii inscrisi la concursul pentru CSD
- Anexa II.A.1.1.1.8 Componenta consiliilor scolilor doctorale in urma alegerilor si CSUD1

c) methodologies for organizing and conducting doctoral university studies (admission doctoral students, completion of doctoral studies);

The regulation of the admission of doctoral students is presented in

- Anexa II.A.1.1.1.9 Metodologia privind organizarea si desfasurarea concursului de admitere la programele de studii universitare de doctorat din cadrul scolilor doct

approved in the Senate Meeting of 18.04.2022. In this annex, all the changes applied in recent years are recorded. Other documents that refer to admission 2022-2023 are:

- Anexa II.A.1.1.1.10 Repartizarea locurilor bugetate 2022 23
- Anexa II.A.1.1.1.11 Taxe de scolarizare pentru programele universitare de doctorat

- Anexa II.A.1.1.1.12 Comisii admitere doctorat 2022-2023
- Anexa II.A.1.1.1.13 Calendar conducatorii si domenii de doctorat admitere 2022 2023

Admission data can be found on the University website

https://www.upit.ro/ro/academiareorganizata/studii-de-doctorat/admitere-doctorate

The following documents exist to regulate the process of developing the doctorate

- Anexa I.1.3.4 Procedură operațională privind planificarea activităților și raportarea în sistemul de evaluare și asigurare a calității

approved in the Senate meeting from 27.03.2017

- Anexa I.1.1.2 Regulament de organizare si desfasurare a studiilor universitare de doctorat

approved in the Senate meeting of 30.06.2022 and

- Anexa I.2.2.3 Metodologia privind sustinerea examenelor, proiectelor de cercetare si rapoartelor pentru studiile de doctorat în UPIT inclusiv in situatii de urgenta

approved in the Senate meeting from 25.05.2020.

For the completion of the doctoral studies, the procedures are presented in

- Anexa I.2.2.4 Metodologia de finalizare studii doctorale si sustinere a tezei de doctorat in cadrul Universitatii din Pitesti inclusiv in situatii de urgenta

(last version approved by the Senate of Pitești University on 15.02.2021), which includes all the documents that must be completed when defending doctoral theses.

The necessary forms to be filled in during the activities related to the submission of reports, the submission of theses, the modification of the theses titles and others can be found on the webpage https://www.upit.ro/ro/academia-reorganizata/studii-de-doctorat/formulare-utile1

d) the existence of mechanisms for recognizing the quality of doctoral supervisor and for the equivalence of the doctorate obtained in other countries;

For the recognition in the University of Pitești of the quality of being doctoral supervisor or having habilitation certificate obtained in accredited higher education institutions abroad, a Methodology, based on MENCS Order no. 5921/2016, was adopted by the Decision of the University Senate from 30.09.2019

- Anexa II.A.1.1.1.15 Procedura operationala privind recunoasterea automata de catre UPIT a calitatii de conducator de doctorat obtinuta in strainatate

Also, a methodology for the recognition of the doctorate tiltle obtained abroad was approved by the University Senate on 28.10.2019

- Anexa II.A.1.1.1.14 Procedura privind recunoasterea automata in cadrul UPIT a diplomei si a titlului de doctor obtinut in strainatate 2019

e) functional management structures (Council of the Doctoral School), proving including the regularity of convening meetings;

By the decision of the Senate from 29.03.2021, at the proposal of CSUD, from the meeting on 12.03.2021, The Interdisciplinary Doctoral School, which included the fields of Materials Engineering, Electronic Engineering, Telecommunications and Information Technologies, and Industrial Engineering, also included the fields of the Doctoral Schools of Biology, Mathematics, Informatics and Mechanical Engineering. The Council of the Interdisciplinary Doctoral School, resulting from the elections on April 23, 2021 and approved in the CSUD meeting on April 29, 2021

- Anexa II.A.1.1.1.16 Proces verbal de avizare a CSD in CSUD

had periodic meetings, especially on Skype, both in its restricted form, as well as together with the responsible doctoral fields, as guests. The meetings took place on the following dates: July 5, 2021, July 7, 2021, July 8, 2021, July 15, 2021, July 19, 2021, August 11, 2021, August 20, 2021, August 26, 2021, August 27, 2021

- Anexa II.A.1.1.1.17 intalniri CSD – SDI

According to the Regulation on the organization and development of doctoral studies (Anexa I.1.1.2 Regulament de organizare si desfasurare a studiilor universitare de doctorat), the main attributions of the councils of doctoral schools are: a) drafting the regulations of the doctoral school; b) making decisions regarding the granting/revocation of membership in the doctoral school; c) approving, at the proposal of the doctoral supervisors, the enrollment for the doctoral studies of the candidates selected through the admission competition; d) if necessary, approves, at the proposal of the doctoral supervisors, the expulsion of doctoral students; e) aproves the function charts of the doctoral school staff; f) elaborates the content of each doctoral study program (the skills obtained, the subjects, which constitute the object of the didactic activity in the advanced studies program, the number of hours at each course, seminar and applied works within a discipline, the number of transferable credits allocated to the disciplines and the list of teaching staff who teach within the program), including the weight of individual activities, activities in study groups and research activities carried out under the coordination of doctoral supervisors; g) implements procedures for highlighting the results of doctoral research for the purpose of evaluating doctoral theses and approving them for public defence; h) implements and monitors the exact structure of doctoral study programs; i) ensures the internal evaluation of doctoral study programs, based on which the doctoral school will review, modify and adapt the structure of doctoral study programs; j) assists the external evaluator in the evaluation process for the provisional authorization or accreditation/reaccreditation of the doctoral study program. k) manages the financial funds of the doctoral school and prepares at the beginning of the academic year "Procedure for substantiating the value of the benefits for the remuneration of the activity in the payment regime", which will be submitted for approval to the University Administration Counsil and the Senate. l) other specific attributions.

f) the doctoral university studies contract;

The model of the doctoral studies contract is developed and approved by the CSUD. For the academic year in progress at the time of the evaluation, the model of the doctoral studies contract is presented in

- Anexa II.A.1.1.1.18 Contract studii universitare de doctorat 2020-2021

This study contract is completed with additional documents presented in

- Anexa II.A.1.1.1.19 Anexe la contractul de studiu

The contract model and annexes are displayed on the page
https://www.upit.ro/ document/171719/contract studii doctorale.pdf

g) internal procedures for analysis and approval of proposals regarding the subject of the training program based on advanced university studies.

The themes of the doctoral study programs are established through direct discussions and consultations with the members of the Doctoral School Council, taking into account the Internal Research-Development-Innovation Plan. The doctoral student proposes the topic together with the scientific supervisor, the Doctoral School Council analyzes it and, together with the scientific supervisor, finalizes the topic that is included in the study contract. The advanced training program and the structure of the associated scientific research program are proposed by the scientific supervisor and the doctoral student, and are approved by the Doctoral School Council.

Recommendations: there are no recommendations
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

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

The details contained in this article of GD 681/2011 are contained in the Regulation on the organization and conduct of doctoral university studies (Anexa I.1.1.8 Regulament Scoala Doctorala Interdisciplinara) and https://www.upit.ro/ro/academia-reorganizata/studii-de-doctorat/scoli-doctorale/scoala-doctorala-interdisciplinara.
Therefore:

- The methodology for receiving new doctoral supervisors within the SDI is specified in article 10. The methodology states that affiliation is conditional on meeting the CNATDCU criteria.
- Art. 11 provides the ways in which the membership of the Interdisciplinary Doctoral School can be withdrawn from a PhD supervisor.

- The training program based on advanced studies is regulated in Art. 12. It specifies the mechanisms through which decisions are made regarding the opportunity, structure and content of the training program based on advanced university studies.
- Each doctoral student benefits from both the guidance of the doctoral supervisor and a guidance committee (see also Anexa I.1.1.2 Regulament privind organizarea si desfasurarea studiilor universitare de doctorat– Art. 44)
- In Art. 13-14 of the regulation, the conditions under which the doctoral supervisor or a member of the guidance committee/mentor for a doctoral student can be changed and the procedures for mediating possible conflicts are specified.
- Art. 15 specifies the situations in which the doctoral program can be interrupted, considering the fact that this aspect is often encountered. Thus, the specific aspects generated by: the actual interruption (art. 15 paragraph 1 (a-d), extension (art. 15 paragraph 2 (a-d), the grace period (art. 15 paragraph 3 a-c) and postponement of the defense of the thesis (art. 15 paragraph 4 a-c). The measures taken in situations of non-acceptance of the doctoral thesis when defended in front of mentors or following the analysis by CNADTCU are analyzed in article 15 paragraphs 5 and 6.
- Art. 16 specifies measures to be taken to prevent fraud in scientific research, including plagiarism, but also the measures to be taken upon detection of this irregularity.
- In Art. 17 the free access of doctoral students to all research resources is stipulated.
- The form of education in the Interdisciplinary Doctoral School is with frequency, according to the methodologies developed by the Ministry of National Education. This is contained in Art. 18.

Recommendations: there are no recommendations
The indicator is fulfilled.

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

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

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

The University of Pitești has an adequate computer system for the record of doctoral students and their academic progress. The computer program is made in Microsoft Access and allows:

- record of doctoral students per year of studies;
- the composition of the guidance committee for each doctoral student;
- the doctoral student's advanced training program (study disciplines, scientific reports, etc.);

- time planning of activities (exams, submission of reports, etc.);
- management of the cases of interruption of doctoral studies.

The system can also provide centralizing statistical data.

An extract from this computer system is illustrated in

- Anexa II.A.1.2.1.1 Parcursul academic al studentilor doctoranzi din domeniul Matematica.

Recommendations: there are no recommendations

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

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

IOSUD-UPIT currently uses a computer program recognized by CNATDCU for the analysis of the percentage of similarity in the scientific works of doctoral students, in the thesis or some chapters of the thesis. It provides besides the calculation of the percentage of similarity, a list of the works that have been detected with similarities.

The method of working with the anti-plagiarism software in the Procedure regarding the preventive electronic anti-plagiarism control of doctoral theses in the University of Pitesti is contained in

- Anexa II.A.1.2.2.4 Procedura antiplagiat

In this procedure, it is mentioned that if the doctoral supervisor wishes, at any time during the doctoral studies, a preliminary verification of the doctoral thesis at the university level or parts of the thesis (chapters, research reports, etc.) can be requested at the e-mail address of the secretariat of the doctoral office. After generating the similarity report, it is sent by e-mail to the PhD supervisor and the director of the doctoral school. The director of the school notifies the CSUD about the result of the analysis, as well as the possible disciplinary measures proposed by the Doctoral School Council. Verification of doctoral theses is mandatory before the public defense is approved. In the Regulation of the Interdisciplinary Doctoral School (Anexa I.1.1.8 Regulament Scoala Doctorala Interdisciplinara) it is said that if the doctoral supervisor has suspicions regarding the existence of elements of plagiarism in the doctoral thesis, or signs of similarity are not found within the accepted limits , he/she will ask the doctoral student to redo the doctoral thesis.

Until 2020, it was used the SEMPLAG program to check the percentage of similarity in doctoral theses. Currently, the anti-plagiarism system used can be found at the address

https://www.turnitin.com/t_inbox.asp?aid=128200996&lang=ro&session-id=b6963713a042455f8c02623392aadb0d,

and its contract is given in

- Anexa II.A.1.2.2.1 Contract TURNITIN.

In Anexa II.A.1.2.2.2 RaportSemPlag-Georgescu and Anexa II.A.1.2.2.3 RaportSemPlag-Urziceanu are given the results obtained from the testing of doctoral theses defended in the period 2018-2023 in the field of Mathematics, through the SEMPLAG system. The maximum percentage of similarity detected was 1.3%.

Recommendations: there are no recommendations
The indicator is fulfilled.

Standard A.1.3. The IOSUD makes sure that financial resources are used optimally, and the revenues obtained from doctoral studies are supplemented through additional funding besides governmental funding.

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

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

At the moment, a research project is underway, project director Prof. dr. Petre Anghelescu (UPIT, Faculty of Electronics, Communications and Computers), in which Prof. dr. Loredana Bălilescu, PhD supervisor in the field of Mathematics, is member of the research team:

- Anexa II.A.1.3.1.1 Lista personal proiect PED

It is a demonstrative experimental research project (PED), with the title "Symmetric modular cryptosystem for securing traffic in telecommunications networks", Ministry of Education, registered at the University of Pitești with No. 7740/28.06.2022, and at UEFISCDI with no. 693PED on 28/06/2022, within the PN III Program, Program 2 - Increasing the competitiveness of the Romanian economy through research, development and innovation, Subprogram 2.1 - Competitiveness through research, development and innovation, project code: PN-III-P2-2.1-PED-2021-3669 (https://uefiscdi.gov.ro/resource-862955-d2.pdf), implementation period: 28.06.2022 – 28.06.2024:

- WEB page of the project: http://cryptonet.biohortinov.ro/
- Annex to the contract: Anexa II.A.1.3.1.2 Contract PED in derulare

Teaching staff with activities in the field of PhD in Mathematics have continuously applied to national and international competitions for financing scientific research projects. It is mentioned that two eligible projects, with very good scores, but unfunded, had participated to the PCE2020 and PCE2021 competitions from UEFISCDI of the program P4-Fundamental

and frontier research-Exploratory research projects, project director Prof. dr. Loredana Bălilescu. Both projects deal with relevant topics in Mathematics and doctoral students were involved:

- Anexa II.A.1.3.1.3 Propunere-PCE2020 and the score obtained https://uefiscdi.gov.ro/resource-825825-pce2020_rezultate-finale_matematica.pdf
- Anexa II.A.1.3.1.4 Propunere-PCE2021 and the score obtained https://uefiscdi.gov.ro/resource-862337-pce-2021_rezultate-finale_matematica.pdf

In the years prior to the analyzed period, there were several research contracts in the field of Mathematics.

Recommendations: there are no recommendations
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

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

At the moment there are 4 PhD students, of which 3 are enrolled with a tuition fee.

Recommendations: there are no recommendations
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

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

According to the Procedure for substantiating the values of the benefits for the remuneration of the hourly payment activity within the Interdisciplinary Doctoral School -

[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.

Mathematics field, for the academic year 2022-2023, more than 10% of the total doctoral grants and tuition fees are assigned to provide funding for the professional training of doctoral students (9855 lei for budget students=32%, 1145 lei for fee-paying students=23%):

- Anexa II.A.1.3.3.1 Fundamentare financiara SDI- Matematica 2022-2023.

Recommendations: To continue this distribution of funds from doctoral grants.
The indicator is fulfilled.

Criterion A.2. Research infrastructure

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

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

For the research activity, the doctoral students have a very good material base, consisting of study spaces in the modern building of the University of Pitești. In these spaces there are laboratories with recent equipment and equipped with mathematical software, video and other equipment. The University of Pitești has a rich central library, with free shelf access to the entire collection of specialized books and journals in the field of Mathematics. The library also provides printing, scanning, photocopying services.
The university has allocated significant amounts for the purchase of electronic subscriptions to several very useful for documentation databases. Access is also possible online, from any location, and is based on username.
Within the Mathematics-Informatics Department, there exists the "Computational methods and programming methodologies" research center, which is certified as a type A research center:

- Anexa I.2.6.1.Centru de cercetare
- Anexa I.2.6.2.Certificat Centru Cercetare

The service offers of the research center, its research infrastructure are given at the web address https://www.upit.ro/ro/academia-reorganizata/facultatea-de-stiinte-educatie-fizica-si-informatica/departamente-la-nivelul-facultatii-de-stiinte-educatie-fizica-si-informatica/departamentul-matematica-informatica2/cercetare-tiinifica2/centrucercetare and https://eeris.eu/ERIF-2000-000Y-0907.

Annexes:

- Anexa I.2.5.1. Spatii de invatamant
- Anexa I.2.6.7.Dotare laboratoare
- Anexa I.2.5.2. Fise laboratoare de cercetare
- Anexa I.2.5.4. Fond de carte si periodice (pe domenii)
- Anexa I.2.5.5. Abonamente periodice nationale
- Anexa I.2.5.6. Abonamente publicatii internationale

Recommendations: there are no recommendations
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.

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

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

Within the field of Mathematics there are now 4 doctoral supervisors, of which 3 (75%) fullfill the minimum CNATDCU standards at the time of the evaluation. Prof. Vasile Lupulescu joined recently the Mathematics Doctoral School (see additional Anex)
Annexes:

- Anexa II.A.3.1.1.1 Fisa verificare standarde minimale LoredanaBalilescu
- Anexa II.A.3.1.1.2 Fisa verificare standarde minimale ClaudiaTimofte

During the visit, it was found that the necessary steps have been initiated for the affiliation of a new PhD advisor who achieved the CNATDCU standards. The candidate's request has already been approved by the Interdisciplinary Doctoral School and by CSUD and will be subject to the approval of the Senate of the University of Pitești in the May 2023 meeting.
Annexes provided during the visit::

- Anexa Cerere afiliere DD Matematica-Lupulescu Vasile
- Anexa Fisa verificare standarde minimale VasileLupulescu
- Anexa Ordin de abilitare VasileLupulescu

Recommendations: It is recommended to support the qualification candidate
The indicator is partially 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

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

Among the 3 doctoral supervisors, 2 are tenured teaching staff with full-time employment contract, and one is retired. Of the two doctoral supervisors with full-time employment contract is tenured within the University of Pitești and the other one is tenured within the University of Bucharest.

It is mentioned that a tenured teaching staff in the Department of Mathematics-Informatics from the University of Pitești, Assoc. Prof. Șerban Costea, fulfills the minimum CNATDCU standards, necessary and mandatory for obtaining the habilitation certificate and that, in a short time, he will start the habilitation procedures, which will ensure the fulfillment of the PI:

- Anexa I.2.3.2 Fisa verificare standarde minimale SerbanCostea

Recommendations: It is recommended that Univ. of Pitesti will support the candidate S. Costea to get the habilitation thesis as soon as possible

The indicator is partially 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

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

All subjects are taught by tenured teaching staff who are full professors, and fullfill the standards of the University of Pitești. The curriculum contains 5 subjects, of which 3 are specialized and two are dedicated to transversal knowledge. All members of teaching staff satisfy the legal conditions to teach these courses and they are specialists in the respective fields. All subjects are exclusively taught for PhD students in the field of Mathematics.

Annexes

- Anexa II.A.3.1.3.1 CV Loredana Balilescu

- Anexa II.A.3.1.3.2 CV Claudia Timofte
- Anexa II.A.3.1.3.3 CV Corneliu Udrea

Recommendations: there are no 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 programs[3] does not exceed 20%.*

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

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

In the field of Mathematics, the maximum number of doctoral students of a supervisor is 4 (Anexa II.A.1.2.1.1. Parcursul academic al studenților doctoranzi din domeniul Matematica).

Recommendations: there are no 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.

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

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

[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.

From the 3 PhD supervisors, 2 of them, representing 66%, have at least five Web of Science indexed papers and far exceed this threshold, and they have international visibility in the last 5 years, as shown in the report and annexes

- Anexa I.2.3.1. CV Conducatori Doctorat
- Anexa II.A.3.1.3.1 CV Loredana Balilescu
- Anexa II.A.3.1.3.2 CV Claudia Timofte

Recommendations: there are no 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

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

From the 3 PhD supervisors in the field of Mathematics, 2 of them, representing 66% of the total, are active scientifically, achieving 25% of the score required by the minimum CNATDCU standards in the last 5 years.
Annexes:

- Anexa II.A.3.1.1.1 Fisa verificare standarde minimale LoredanaBalilescu
- Anexa II.A.3.1.1.2 Fisa verificare standarde minimale ClaudiaTimofte

Recommendations: there are no recommendations
The indicator is fulfilled.

Domain B. EDUCATIONAL EFFECTIVENESS

Within the field of Mathematics, the elements of educational effectiveness concern the following aspects:

a) the training of highly competent specialists in research activities;
b) promoting the scientific research activity of the institution teaching staff in top fields;
c) with the active participation of doctoral students in these activities;
d) ensuring an optimal study and research framework for doctoral students;
e) attracting doctoral students to the research teams of the Department of Mathematics-Informatics;
f) promoting research ideas in the academic, social and economic environment;

g) valorization of the research results of the students and teaching staff involved, by publishing them in specialized journals and participating in scientific events;
h) capitalizing on research results in the socio-economic context and developing their applicability.

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

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

In the period 2018-2023, 4 students were enrolled for the the doctoral admission contest in the filed of Mathematics, and 2 of them completed their master's programs in other higher education institutions in the country. The number of places financed by the state budget was 1. Thus, the ratio between the number of graduates at the master's level of other higher education institutions in the country and the number of places financed by the state budget is 2/1=2. Also, the ratio between the number of candidates in the last five years and the number of places financed from the state budget is 4/1=4 (Anexa Raport Doctoranzi Secretariat IOSUD, provided during the visit).

Recommendations: there are no recommendations
The indicator is fulfilled.

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

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

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

Admission to the doctoral studies is made on the basis of the Methodology regarding the organization and conduct of the admission competition to the doctoral studies programs within the doctoral schools of the University of Pitești in the academic year 2022-2023:

- Anexa II.A.1.1.1.9 Metodologia privind organizarea si desfasurarea concursului de admitere la programele de studii universitare de doctorat din cadrul scolilor doct

Within this methodology, it is stipulated in Art.16 that the specialized test for admission to the doctorate consists of the oral presentation of the candidate's scientific research interests, the bibliography studied and a direction in which the doctoral thesis would be completed. This presentation is followed by a clarifying discussion with the members of the PhD admissions committee. In the conditions of the suspension of face-to-face teaching activities for objective reasons, e.g. pandemic, etc., the organization and conduct of the doctoral admission exam within the University of Pitești is implemented according to Annex 1 of this methodology. Also, in Art.17 it is indicated that, during the specialized test, candidates are evaluated with respect to the level of training and documentation in the field, to the ability to highlight the major directions of the research and the ability to formulate solutions (theoretical and experimental) for a research topic.

Recommendations: there are no recommendations
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 admission[4] does not exceed 30%.*

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

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

From the 4 students enrolled in the last 5 years for the PhD in Mathematics, there was not any case of dropping out or renouncement. Thus, the expelling rate of doctoral students in the field of Mathematics is 0%.

Recommendations: there are no recommendations
The indicator is fulfilled.

Criterion B.2. The content of doctoral programs

[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.

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

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

The curriculum contains 5 disciplines, of which 3 are relevant to the scientific research direction of the thesis and they contribute straightforwardly to the students training. There is also the discipline "Research Methodology in Mathematics and Information Technology in Research".

Annexes:

- Anexa I.1.6.1 Plan de invatamant Matematica
- Anexa II.B.2.1.3.1 Fise discipline

Recommendations: there are no recommendations

The indicator is fulfilled.

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

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

Among the disciplines provided in the curriculum there is the discipline "Ethics and academic integrity". It was introduced as a compulsory discipline in all doctoral fields, in accordance with the Ministry of Education order no. 3131/2018 from January 30, 2018.

Annexes:

- Anexa I.1.6.1 Plan de invatamant Matematica
- Anexa II.B.2.1.3.1 Fise discipline

Recommendations: there are no recommendations

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 activities[5].

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

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

The mechanisms for analyzing the content of the academic doctoral programs are regulated by the Regulation on the organization and conduct of doctoral studies in the Interdisciplinary Doctoral School within IOSUD-Universitatea din Pitești:

- Anexa I.1.1.8 Regulament Scoala Doctorala Interdisciplinara

The Council of the Interdisciplinary Doctoral School within IOSUD approves the training programs based on advanced university studies and individual scientific research programs. The objective of the doctoral study program is to obtain training at EQF/CNC level 8, according to the Recommendation of the Council of the European Union of 22.05.2017, regarding the European Qualifications Framework

- Anexa I.1.2.1 Procedura nivel 8 EQF CNC

Doctoral schools within IOSUD constantly monitor the effectiveness of the curriculum and make adjustments and adaptations to achieve this goal. To better specify the objectives pursued, each discipline has a worksheet that contains the competencies pursued, the types of activities and the examination method. Students are guided to be able to carry out an autonomous activity. Also, the individual training program is oriented towards obtaining own results, with relevance in terms of knowledge in the field. The responsibility for drawing up the work plan belongs to the PhD supervisor, who has to take all measures to maximize the chances of completing the doctoral program.

For better monitoring of doctoral students, they periodically make reports on the research activity carried out:

- Anexa II.C.1.1.1.5 Fisa progres doctorand

A monitoring of the scientific results is carried out and the feedback from the students on the development of the training activity is stimulated:

- Anexa II.C.1.1.2.1 Formular satisfactie doctoranzi din domeniul Matematica
- Anexa II.C.1.1.2.2 Raspuns 4 studenti - Formular satisfactie

Recommendations: there are no recommendations

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*

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

In each of the doctoral students research directions, there are, apart from the PhD supervisor, other members of the department and other universities in the country/abroad, who have advanced scientific skills in these research domains and who have been co-opted as members in the doctoral student guidance commissions. Teaching staff co-opted in the guidance commissions can provide valuable help in scientific research activity. The report contains the structure of the guidance commissions for each of the doctoral students from the period 2018-2023.

Recommendations: there are no 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*

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

Currently, there are 6 doctoral students and 7 teaching staff who are part of the guidance commissions. Thus, we get the ratio 6/7=0.86.

Recommendations: there are no 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*

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

In the period 2018-2023, two theses were defended in the field of Mathematics. Each graduate doctoral student has published several articles in peer-reviewed journals, indexed in prestigious databases. Totally, the 2 PhD students who defended their thesis during this period published 8 ISI papers, and the list of the papers is given in

- Anexa I.1.6.2 Lista publicatiilor doctoranzilor Matematica.

Also, in the Report there are printscreens from Web of Science containing the evidence of the published papers

- Anexa II.B.3.1.1.1 Publicatii Dovezi WebOfScience Doctoranzi.

Recommendations: there are no 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

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

The 2 PhD students who defended their thesis in the period 2018-2023, participated in 6 international conferences in the country or abroad. Thus, the required ratio is 6/2=3.
Annex:

- Anexa I.2.6.9 Participari conferinte doctoranzi Matematica

Recommendations: there are no 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

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

The number of doctoral theses assigned to a specific referent coming from a higher education institution, other than IOSUD University of Pitești, does not exceed two (2) theses

coordinated by the same PhD supervisor, in one year. The list of the committees is given in the report and in annex obtained during the visit vizitei Anexa Raport Comisii-Absolventi.

Recommendations: there are no 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

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

In the field of Mathematics, 2 doctoral theses were completed during the analyzed period, so the indicator is not applicable.

Recommendations: -
The indicator not applicable.

Domain C. QUALITY MANAGEMENT

The evaluation and quality assurance system in UPIT is based on external reference documents, including

- National Education Law;
- National Framework of Higher Education Qualifications;
- External evaluation methodology and quality standards of the Agency for Quality Assurance in Higher Education – ARACIS;
- Standards and guidelines for quality assurance in the European Higher Education Area.

IOSUD-UPIT has developed its own procedures to achieve the specific objectives of doctoral university studies.

Criterion C.1. Existence and periodic implementation of the 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.

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

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

In order to evaluate and monitor internally the evolution of the Interdisciplinary Doctoral School (SDI) and the doctoral fields within the SDI, a methodology was developed and implemented and it covers the criteria/aspects mentioned in this indicator – the scientific activity of the doctoral advisors, the infrastructure and the logistics necessary to carry out the research activity, the procedures and rules based on which the doctoral studies are organized:

- Anexa II.C.1.1.1.1 Metodologie UPIT de autoevaluare activității IOSUD,

approved in the Senate Decision of 21.01.2019. It could be found at the webpage https://www.upit.ro/ro/academia-reorganizata/studii-de-doctorat/regulamente-si-legislatie-nationala-iosud and it considers the periodic evaluation of doctoral programs, by quantifying their quality, based on several evaluation criteria (among which we mention: the existence and the quality of teaching staff, the content of the educational process, doctoral students, the content and results of scientific research, the material base, scientific and professional ethics), which are associated with performance indicators.

At the level of the Interdisciplinary Doctoral School, internal quality assessment and monitoring procedures are applied, and they are developed at the level of IOSUD, as follows.

a) To monitor the activity of doctoral advisors, the results of the previous year's research activities are recorded annually. This annual report is mandatory, and the reporting is based on the valid CNATDCU criteria on that date. For this activity, the SIIIMADC platform of the University of Pitești is used (https://www.upit.ro/profesor/home). An example of such a report is presented in

- Anexa II.A.3.1.1.1 Fisa verificare standarde minimale LoredanaBalilescu.

In the related methodology, the types of activities that must be monitored and on which the smooth development of the training process depends are recorded. Also, there is a methodology regarding the internal evaluation of the performances of doctoral advisors from the doctoral schools, presented in the following annex

- Anexa II.C.1.1.1.2 Metodologie UPIT evaluare performante conducători doctorat,

which follows the following aspects:

1) the scientific performances of the doctoral advisors;
2) scientific research produced by developing theses and disseminating the results;
3) respect for scientific, university and professional ethics;
4) the educational effectiveness of the doctoral school;
5) applying the principles and procedures characteristic of quality management.

The internal evaluation of the performances of doctoral advisors is carried out every five years, under the coordination of an internal commission appointed by decision of the rector, based on the CSUD's proposals. The methodology contains 33 explicit indicators with which the doctoral advisors are evaluated. The indicators are grouped into the following categories:

1) Indicators and criteria for evaluating didactic activity and scientific research;
2) Indicators regarding the guidance activity of doctoral students;
3) Indicators regarding professional and scientific representation activities.

The methodology can also be found on the webpage https://www.upit.ro/ro/academia-reorganizata/studii-de-doctorat/regulamente-si-legislatie-nationala-iosud.

b) The research activity is carried out in the research centers labs, where the PhD advisors and mentors work. They are affiliated to the Research Center "Computational methods and programming methodologies" (https://www.upit.ro/ro/academia-reorganizata/facultatea-de-stiinte-educatie-fizica-si-informatica/departamente-la-nivelul-facultatii-de-stiinte-educatie-fizica-si-informatica/departamentul-matematica-informatica2/cercetare-tiinifica2/centrucercetare.

In order to guarantee the quality of the activities carried out in the research centers, each center in the university is evaluated annually, in accordance with the Operational Procedures: Establishment, Internal Certification and Evaluation of Research Units

- Anexa II.C.1.1.1.3 PO înființarea, evaluarea, certificarea UC.

This evaluation is coordinated by the UPIT Scientific Research Council, and the research centers that achieve the minimum standards imposed (with reference to the criteria: Human resources and the conduct of research-development-innovation activities; Results of research-development-innovation activities; Link with the socio-economic environment and visibility; the research infrastructure and the portfolio of services offered) are institutionally certified:

- Anexa II.C.1.1.1.4 Criterii si standarde minimale evaluare CC

c) doctoral studies are organized based on the following methodologies/regulations, presented on the page https://www.upit.ro/ro/academia-reorganizata/studii-de-doctorat/regulamente-si-legislatie-nationala-iosud:

- Regulation on the organization and conduct of doctoral studies within the IOSUD University of Pitești
  - Anexa I.1.1.2 Regulament privind organizarea si desfășurarea studiilor universitare de doctorat
- Regulation on the organization and conduct of doctoral studies in the Interdisciplinary Doctoral School within IOSUD University of Pitești

- Anexa I.1.1.8 Regulament Scoala Doctorala Interdisciplinara

- Methodology regarding the organization and conduct of the admission competition to doctoral university study programs within the doctoral schools of the University of Pitești
  - Anexa II.A.1.1.1.9 Metodologia privind organizarea si desfasurarea concursului de admitere la programele de studii universitare de doctorat din cadrul scolilor doct
- Regulation regarding the professional activities of doctoral studies
  - Anexa 1.2.2.1 Regulamentul privind activitatile profesionale in cadrul studiilor universitare de doctorat 2019, Anexa I.2.2.2 Regulament de organizare si desfasurare a studiilor universitare de doctorat din cadrul IOSUD UPIT
- The methodology regarding the exams, research projects and reports for doctoral studies within the University of Pitești
  - Anexa I.2.2.3 Metodologia privind sustinerea examenelor, proiectelor de cercetare si rapoartelor pentru studiile de doctorat în UPIT inclusiv in situatii de urgenta
- The methodology for finishing doctoral studies and defending the doctoral thesis within the University of Pitești
  - Anexa I.2.2.4 Metodologia de finalizare studii doctorale si sustinere a tezei de doctorat in cadrul Universitatii din Pitesti inclusiv in situatii de urgenta

d) The scientific activity of doctoral students is evaluated by the doctoral advisor and the guidance committee based on the progress report of the doctoral student
   - Anexa II.C.1.1.1.5 Fisa progres doctorand

e) The training program based on advanced university studies of doctoral students is an Annex to the Doctoral Studies Contract, for each individual student
   - Anexa II.A.1.1.1.19 Anexe la contractul de studiu

f) At the level of the Interdisciplinary Doctoral School, where the Mathematics doctoral field belongs, procedures for the use of income, including social and academic support, are established each academic year. The procedure for the allocation of funds, including participation in various events, the publication of scientific papers, materials necessary for carrying out research, is presented in
   - Anexa II.A.1.3.3.1 Fundamentare financiara SDI- Matematica 2022-2023

Recommendations: there are no 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

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

At the level of the Interdisciplinary Doctoral School, the Commission for Evaluation and Quality Assurance, together with the person in charge for the doctoral study program, designed a questionnaire to identify the needs of doctoral students and to assess their general level of satisfaction with the doctoral study program, in order to continuously improve the academic and administrative processes. This questionnaire was applied, and the results obtained were analyzed at the level of the doctoral field and the SDI. The questions referred to the collaborative relationship with the doctoral advisor and the other members of the guidance committee, assessments of the training program based on advanced university studies, assessments of the website of the doctoral school and the field, assessments of the functioning of the ERASMUS+ program, assessments of the access to research infrastructure and databases, assessments of how counseling is conducted and others.

Annexes:

- Anexa II.C.1.1.2.1 Formular satisfactie doctoranzi din domeniul Matematica
- Anexa II.C.1.1.2.2 Raspuns 4 studenti - Formular satisfactie

Recommendations: there are no recommendations

The indicator is fulfilled.

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

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

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

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

On the website of the University of Pitești (https://www.upit.ro), it also includes a section dedicated to IOSUD-UPIT (https://www.upit.ro/ro/academia-reorganizata/studii-de-doctorat). The Interdisciplinary Doctoral School can be found at https://www.upit.ro/ro/academia-reorganizata/studii-de-doctorat/scoli-doctorale/scoala-doctorala-interdisciplinara, and the Mathematics field at https://www.upit.ro/ro/academia-reorganizata/studii-de-doctorat/scoli-doctorale/scoala-doctorala-interdisciplinara/matematicadoctorat

The informations specified in this indicator are the following:

a) The regulations of the Interdisciplinary Doctoral School can be found at https://www.upit.ro/ro/academia-reorganizata/studii-de-doctorat/scoli-doctorale/scoala-doctorala-interdisciplinara

b) The methodology for admission to doctoral university studies is available at https://www.upit.ro/ document/112529/metodologia privind organizarea si desfasurarea concursului de admitere la programele de studii universitare de doctorat din cadrul scolilor doctoral.pdf

c) The doctoral studies contract is available at the address https://www.upit.ro/ document/159487/contract de studii doctorale.pdf

d) The regulations for completion of studies can be found at https://www.upit.ro/ document/30648/metodologie upit de sustinere a tezei de doctorat.pdf,
and the procedure for public defense of the thesis at the addresses https://www.upit.ro/ document/54580/metodologie de finalizare studii doctorale si sustinere a tezei de doctorat in cadrul upit inclusiv in situatii de urgenta 2020.pdf
and
https://www.upit.ro/ document/111710/metodologia de finalizare studii doctorale si sustinere a tezei de doctorat in cadrul universitatii din pitesti inclusiv in situatii de urgenta site.pdf

e) Syllabus can be found at https://www.upit.ro/ro/academia-reorganizata/studii-de-doctorat/scoli-doctorale/scoala-doctorala-interdisciplinara/matematicadoctorat

f) The CVs of the doctoral advisors are available at the addresses https://upit.ro/ document/164621/cv-loredanabalilescu-september2021.pdf and https://upit.ro/ document/164620/cv timofte-2021.pdf.

g) The list of current doctoral students can be accessed at the address https://upit.ro/ document/164630/lista doctoranzilor matematica 2021.pdf

h) The standards for the preparation of the doctoral thesis can be found at https://www.upit.ro/ro/academia-reorganizata/studii-de-doctorat/scoli-doctorale/scoala-doctorala-interdisciplinara

i) Information about theses summaries and the date and place of the defense is available at https://www.upit.ro/ro/academia-reorganizata/studii-de-doctorat/tezelor-de-doctorat

Recommendations: there are no 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

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

Doctoral students have free access to the ANELIS+ platform, which offers access to the databases Web of Science, Science Direct, Springer Link Journals and others of general interest, but also to the Mathscinet database which is specific to the field of Mathematics. Access can be done based on username and password from any location.
Annex:

- Anexa II.C.2.2.1.1 Acces ANELIS

Recommendations: there are no 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

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

Doctoral students can check the similarity of their own papers through their doctoral advisors, using the TURNITIN program. An example is given in:

- Anexa II.C.2.2.2.1 Acces TURNITIN

Recommendations: there are no 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

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

All doctoral students in the field of Mathematics carry out research, mainly in laboratories that belong to the Research Center "Computational methods and programming methodologies":
https://www.upit.ro/ro/academia-reorganizata/facultatea-de-stiinte-educatiefizica-si-informatica/departamente-la-nivelul-facultatii-de-stiinte-educatie-fizica-siinformatica/departamentul-matematica-informatica2/cercetare-tiinifica2/centrucercetare, and access to the research center labs is realized according to the infrastructure access procedure;

- Anexa II.C.2.2.3.1 Procedură de acces la infrastructura MCMP

Recommendations: there are no recommendations
The indicator is fulfilled.

Criterion C.3. Internationalization

Standard C.3.1. There is a strategy in place and it is applied to enhance the internationalization of doctoral studies.

Internationalization represents one of the major directions of the University of Pitești. In the extensive material on Internationalization Strategy of the University of Pitești, in addition to pointing some results achieved so far, the general directions are outlined, as well as specific objectives, which all faculties must achieve.

- Anexa III.3.1 Strategia de internaționalizare a UPIT 2020-2027

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

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

The internationalization of doctoral schools is an objective assumed by IOSUD-University of Pitești. In the Procedure regarding the encouragement of performance in the research activity of doctoral students, it is explicitly stipulated, as a priority objective, to participate in national and international scientific events, as well as to carry out training courses in other

universities. The methods of settlement of expenses related to these activities are presented.

- Anexa III.2.2 Procedură UPIT privind încurajarea performanței în activitatea de cercetare a doct 1

The doctoral field of Mathematics has signed an ERASMUS+ agreement with the University of Vilnius, Lithuania and has accessed the Eugen Ionescu fellowship system

- Anexa II.C.3.1.1.1 Acord international doctorat-VilniusUniv
- Anexa II.C.3.1.1.2 Propuneri Universitatea din Pitesti Tematica Eugen Ionescu doctorate

In addition, steps have been taken to establish new Erasmus+ agreements with the University of Klagenfurt, Austria

- Anexa II.C.3.1.1.3 Demersuri Erasmus Klagenfurt,

but also with other universities in the world

- Anexa II.C.3.1.1.4 Demersuri Acorduri.

The 2 PhD students who defended their thesis in the period 2018-2023 participated in international conferences. Precisely, they participated in 6 international conferences. The percentage of students participating in international conferences was therefore 100%.
It results from the Report that, in the PCE2021 project proposal, unfunded, from UEFISCDI, the program P4-Fundamental and frontier research-Exploratory research projects, financial support was considered for foreign professors/researchers to visit UPIT for collaboration with doctoral students and leading professors of doctorate, but also the movement of doctoral students to the universities of collaborators.

Recommendations: there are no 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

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

The 4 doctoral students advised by Mrs. Prof. Bălilescu also have as their mentor the Associate Prof. Jorge San Martin from University of Chile, and a joint supervision of doctoral studies agreement will be made in the next period. We mention that two of the doctoral advisors have close ties with universities abroad, where they carried out research and didactic activities for a long period. We mention some of the permanent guests to give lectures/lectures for PhD students: Takeo Takahashi (France), Tuhin Ghosh (Germany), among others.

Recommendations: there are no 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

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

The inclusion of international experts in the committees for guiding or supporting doctoral theses is supported. Assoc. Prof. Jorge San Martin from the University de Chile (https://uchile.cl/portafolio-academico/portafolio-academico/academico/26421) is a foreign mentor in the guidance committee of 4 PhD students, but in the future, it is even intended to carry out doctoral theses in co-supervision with the universities of the collaborators of the doctoral advisors.
Annex provided during the visit

- Anexa Stat de functii SDI 2021-2022

Recommendations: there are no recommendations
The indicator is fulfilled.

IV. SWOT Analysis

Strengths:	Weaknesses:
- The scientific value of PhD advisors. Among them, 2 advisors are young, have rich research experience carried out abroad and maintain close connections with some universities abroad. - The Department of Mathematics-Informatics and UPIT have an infrastructure that allows the doctoral program to be carried out under good conditions. - The department provides active support for the doctoral activity, through teaching staff who participate in the guidance committees and through the presence of a research center in	- Currently there are only 2 doctoral advisors who are scientifically active and achieve the minimum CNATDCU standards. - There was insufficient funding for PhD students and PhD advisors, through scholarships and/or settlement of mobility activities.

Mathematics and Informatics.	
Opportunities: - The perspective of recuiting new members in the doctoral school (a young Assoc. Prof. with research experience carried out abroad, tenured in the Department of Mathematics-Informatics, UPIT and an experienced professor from another university in the country who has already submitted the affiliation application to IOSUD-UPIT). - There is a good perspective of substantially widening the spectrum of internationalization, due to the current doctoral supervisors. - In the future, the University will allocate increased amounts to support the research activities carried out by doctoral students. - In Pitesti city area there is an economic environment that can generate research opportunities.	**Threats:** - There are a small number of doctoral grants and scholarships for those who wish to pursue a PhD in mathematics. - The small number of possibilities to access research grants. - The attractiveness that other university centers in the country or abroad can absorb a part of the doctoral students.

V. Overview of judgments awarded and of the recommendations

No.	Type of indicator (*, C)	Performance indicator	Judgment	Recommendations
1.	PI	A.1.1.1. The existence of specific regulations and their application at the level of the Doctoral School of the respective university doctoral study domain: (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 CSD and the evidence of their conduct; c) the Methodologies for organizing and	Fulfilled	

		conducting doctoral studies (for the admission of doctoral students, for the completion of doctoral studies); d) the existence of mechanisms for recognizing the status of a Doctoral advisor and the equivalence of the doctoral degree obtained abroad; e) functional management structures (Council of the doctoral school), giving as well proof of the regularity of 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. - description of the facts, the findings from the assessed institution's documents and the evaluation visit itself - analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself		
2.	PI	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	Fulfilled	
3.	PI	A.1.2.1. The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic background.	Fulfilled	
4.	PI	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.	Fulfilled	
5.	PI	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	Fulfilled	

		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.		
6.	PI *	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%.	Fulfilled	
7.	PI *	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.).	Fulfilled	To continue this distribution of funds from doctoral grants.
8.	**PIC**	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.	Fulfilled	
9.	**PIC**	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	Fulfilled	

		for obtaining the enabling certification.		
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.	Partially Fulfilled	It is recommended that Univ. of Pitesti will support the candidate S. Costea to get the habilitation thesis as soon as possible
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.	**PIC**	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	Fulfilled	

		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. Interviewing the candidate is compulsory, as part of the admission procedure.	Fulfilled	
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.	**PIC**	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.	**PIC**	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.	Fulfilled	
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	Fulfilled	

		years) is at least 1.		
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.	Not applicable	
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; (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.	Fulfilled	
28.	PI *	C.1.1.2. Mechanisms are implemented during the stage of the doctoral study program to enable feedback from doctoral students	Fulfilled	

		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.		
29.	**PIC**	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.	Fulfilled	
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	Fulfilled	

		other existing scientific or artistic works.		
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

1) Only one (1) indicator is partially fullfilled, namely IP*-A.3.1.2. There are very good premises for the remediation of these partially fulfilled indicators, in a short period, because both indicators refer to the human resource and a tenured teaching staff in the Department of Mathematics-Informatics at the University of Pitești achives the CNATDCU minimum standards for obtaining the habilitation certificate and that, shortly, he will start the habilitation procedures. On the other hand, an experienced

professor from a university in the country has already applied for affiliation within the Interdisciplinary Doctoral School, in the field of Mathematics, and his application has already been approved by the Interdisciplinary Doctoral School and by the CSUD, and it will be submitted to the UPIT Senate's approval in the May 2023 meeting.

2) Two (2) recommendations were made.
3) There are valuable doctoral advisors, nevertheless it is necessary that the number of doctoral advisors increases. It is recommended to support the candidate to get the habilitation certificate.
4) The analysis of the representative works of the graduates and the analysis of the publications of the doctoral students who have completed their training proves the quality of the defended theses.
5) The research infrastructure is adequate.
6) It is recommended to continue the distribution of funds from doctoral grants to doctoral students, for developing properly the study program.

VII. Annexes

The report contains the following types of documents:

- The detailed schedule of the evaluation visit.
- The survey questionnaire applied to doctoral students in the doctoral study domain under review, the results and their interpretation.
- Scanned documents requested from the IOSUD during the evaluation visit, which are not found in the internal evaluation file received before the visit.