

The External Evaluation Report of a Doctoral Study Domain

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I. Introduction¹

In this chapter, the following shall be summarized:

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

The evaluation was carried out for the Energy Engineering doctoral domain from 27.9.-1.10.2021. The panel members were prof. G. Lazariu, prof. Kruno Milicevic PhD and student member Teodora Lupu.

Introduction according to the self-assessment document:

Within the Politehnica University of Timișoara Organizing Institution of Doctoral Studies (with the abbreviation IOSUD-UPT in Romanian), in accordance with the Institutional Regulation for the organization and development of doctoral studies at the Politehnica University of Timișoara (RIODSUD-UPT), developed under Law 1/2011 and GD 681/2011, the activity of doctoral studies is carried out within a single doctoral school, the Doctoral School of Engineering Studies, established with the approval of RIODSUD-UPT of the UPT Senate in 2011 (RIODSUD-UPT is Annex 10 to the UPT Charter). The headquarters of the Doctoral School of Engineering Studies is inside the Rectorate UPT building, Victoriei Square, no. 2, Timișoara, floor 1, rooms 103 A, B and C.

The main objective of the Doctoral School of Engineering Studies in IOSUD-UPT and of the doctoral fields coordinated by it, is the training of human resources, within the third cycle of university studies, for the qualification of independent scientific researcher certified by Ph.D. title, defending the doctoral thesis and following the doctoral program composed of (a) the training program based on advanced university studies (1 year) and (b) the individual doctoral scientific research program (at least 2 years).

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

The mission of the Doctoral School of Engineering Studies in IOSUD-UPT is to coordinate the doctoral studies in UPT using the same academic criteria and performance standards applied to all accredited doctoral fields in IOSUD-UPT. The Doctoral School offers an adequate organizational framework for the development of training programs based on advanced university studies, of individual programs of doctoral scientific research as well, and finalization and public defenses of doctoral theses. Also, the Doctoral School provides the organizational framework for the public defenses of the habilitation theses, and the sustainable development of the Ph.D. supervisors affiliated to IOSUD-UPT. The Doctoral School provides, to all Ph.D. students in IOSUD-UPT, transversal courses within the training program based on advanced university studies, which offers the necessary knowledge to Ph.D. students and promotes the appropriate skills and attitudes for scientific research, stimulating the academic standards of performance, originality, respecting the research ethics and deontology.

The Doctoral School of Engineering Studies from IOSUD-UPT manages 13 fields of doctoral university studies, according to GD 778/2015, GD 376/2016, GD 140/2017, GD 158/2018, GD 326/2019 and GD 299/2020.

The Doctoral School of Engineering Studies has a team of Ph.D. supervisors consisting of:

- 148 total IOSUD-UPT affiliated Ph.D. supervisors at the date of this report, of which
 - o 78 full-time Ph.D. supervisors (professors with an employment contract for an indefinite period in IOSUD-UPT), 53 associate Ph.D. supervisors (with a fixed-term employment contract). A small part of the associated Ph.D. supervisors does not have a contract with IOSUD-UPT at the date of this report because they do not currently coordinate Ph.D. students, but are professionally active.
 - o 61 full-time Ph.D. supervisors who have obtained the habilitation certificate.

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.

The methods and tools used in the external evaluation process included:

- The analysis of the internal evaluation report of the doctoral study domain under review and its Annexes;
- The analysis of documents, data and information available on the IOSUD/Doctoral School(s) website, in electronic format;
- Online preliminary meeting for the preparation and harmonization of evaluation steps, in hybrid mode, of doctoral study domains and IOSUD;
- Online meeting with representatives of the institution and of the Council for Academic Doctoral Studies (CSUD);
- Online meeting with the contact person for the doctoral study domain under review and the team who drafted the internal evaluation report;
- Online meeting with Doctoral Schools Council (CSD members);
- Online meeting with PhD students;
- Online meeting with the academic staff corresponding to the doctoral study domain;
- Online meeting with the members of the Ethics Commission;
- Online meeting with the Directors/ persons in charge of the research centers/laboratories within the doctoral study domain;
- Online meeting with employers of Doctoral graduates in the domain;
- Online meeting with graduates for the respective doctoral study domain;
- Internal domain evaluation panel meetings;

III. Analysis of ARACIS's performance indicators

Domain A. INSTITUTIONAL CAPACITY

**general description of domain analysis.*

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

**general description of the criterion analysis.*

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.

**general description of the standard analysis.*

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*

According to the self-assessment document:

Within IOSUD-UPT the following regulations specific to doctoral studies are applied:

(a) Institutional Regulation for the Organization of Doctoral Studies at the Politehnica University Timișoara, Nr. 18.874 / 16.12.2011 (Annex 10 to the UPT Charter): Annex_A.1.1.1.a.

publicly available at:

http://upt.ro/img/files/carta/anexe/Anexa_10_CartaUPT_Regulament_doctorat.pdf

Considering that in the frame of IOSUD-UPT there is only one doctoral school, the Doctoral School of Engineering Studies that coordinates all doctoral fields, there is a single document that includes regulations for organizing the doctoral studies.

(b) The methodology for organizing the elections at the CSD level is provided in:

1. The Institutional Regulation for Organizing the Elections for the Organizational Structures and Management Functions of the Doctoral Studies at IOSUD-UPT Level, approved by HS 13 / 10.05.2012, for the legislature 2012-2016: Annex_A.1.1.1.b-1.

publicly available at:

http://www.upt.ro/administrare/dgac1/file/2011-2012/regulamente/IOSUD-UPT_CSUD2012.pdf

• The elections at the level of CSUD / CSD in the legislature 2012-2016 can be found in Annex_A.1.1.1.b-2.

publicly available at:

http://www.upt.ro/Informatii_alegeri-consiliu-csud_299_en.html

• The decision on the appointment of CSUD members in 2012-2016 can be found in Annex_A.1.1.1.b-3.

publicly available at:

<http://www.upt.ro/administrare/dgac1/file/2011->

[2012/doctorat/alegeri_csud/Numire_membri_CSUD_22_06_2012.pdf](http://www.upt.ro/administrare/dgac1/file/2011-2012/doctorat/alegeri_csud/Numire_membri_CSUD_22_06_2012.pdf)

• The elections for the CSUD director for the 2012-2016 legislature can be found in Annex_A.1.1.1.b-4.

publicly available at:

http://www.upt.ro/Informatii_concurs-public---director-al-csud_298_en.html

• The decision to appoint the director of CSUD in 2012-2016 can be found in Annex_A.1.1.1.b-5.

• The decision to appoint the director of CSD in 2012-2017 can be found in Annex_A.1.1.1.b-6.

publicly available at:

http://www.upt.ro/img/files/2017-2018/doctorat/Decizie_numire_DSD_Andreescu_Gh-Daniel.pdf

2. The regulation for organizing the processes for establishing the managing structures and for electing / designating competition regarding the management positions at the Politehnica University Timisoara for the 2016-2020 legislature is attached Anexa_A.1.1.1.b-7.

publicly available at:

http://www.upt.ro/img/files/hs/HS_207_26.11.2015_Regulament_alegeri.pdf

• Organizing the elections for CSUD / CSD members for the 2016-2020 legislature can be found in Annex_A.1.1.1.b-8.

publicly available at:

http://www.upt.ro/Informatii_alegerea-membrilor-csud-si-csd-pentru-mandatul-2016-2020_840_en.html

• The report of the electoral commission on the appointment of CSUD members in 2016-2020 can be found in Annex_A.1.1.1.b-9. publicly available at:

http://www.upt.ro/img/files/alegeri_2016/mcsud_mcsd/Raport_comisie_electorala_CSUD_CSD.pdf

• The decision to appoint the director of CSUD in 2016-2020 can be found in Annex_A.1.1.1.b-10.

publicly available at:

http://www.upt.ro/img/files/alegeri_2016/csud/Decizie_numire_director_CSUD_2016.pdf

• The decision to appoint the director of CSD in 2017-2022 can be found in Annex_A.1.1.1.b-11.

publicly available at:

http://www.upt.ro/img/files/2017-2018/doctorat/Decizie_numire_DSD_Dorin_Lelea.pdf

3. The regulation for organizing the processes for establishing the managing structures and for electing / designating competition regarding the management positions at the Politehnica University Timisoara for the 2020-2024 legislature is attached in Annex_A.1.1.1.b-12.

publicly available at:

http://upt.ro/img/files/carta/anexe/Anexa23_CartaUPT_Regulament_alegeri-2020.pdf

• The proof of the competition for CSUD director in the 2020-2024 legislature is presented in Annex_A.1.1.1.b-13. publicly available at:

http://www.upt.ro/Informatii_concurs-pentru-ocuparea-functiei-de-director-al-csud-pentru-_1533_en.html

• The decision to appoint director of CSUD in 2020 (Annex_A.1.1.1.b-14.).

publicly available at:

http://www.upt.ro/img/files/csud/Decizie_numire_director_CSUD_2020.pdf

- Election of the student representative in the CSD (Annex_A.1.1.1.b-15.)

publicly available at:

http://www.upt.ro/img/files/alegeri_2016/mcsud_mcsd/PV_CSD_drd.pdf

- Election of the student representative in the CSUD (Annex_A.1.1.1.b-16.)

publicly available at:

http://www.upt.ro/img/files/alegeri_2016/mcsud_mcsd/PV_CSUD_drd.pdf

- By HS no. 38 / 21.01.2021, the mandate of CSUD / CSD members was extended until 17.07.2021 (Annex_A.1.1.1.b-17.)

publicly available at:

http://www.upt.ro/img/files/hs/2021/21.01.2021/HS_38_21.01.2021_Prelungire-mandat-membri-CSUD-and-CSD.pdf

c) Within IOSUD-UPT are used:

- The institutional procedure regarding the organization of the admission to doctoral studies in UPT session 2019, approved by HCA-UPT no. 54 / 11.06.2019 is presented in Annex_A.1.1.1.c-1.

publicly available at:

http://www.upt.ro/img/files/2018-2019/admitere/doctorat/IOSUD-UPT-admitere-2019_procedura.pdf

- The Institutional Procedure for organizing the admission to Doctoral Studies at the Politehnica University Timișoara, 2018 session, approved by HCA no. 18 / 24.04.2018 (in Annex_A.1.1.1.c-2. The version used in September 2018 is presented),

publicly available at:

http://www.upt.ro/img/files/2017-2018/admitere/doctorat/IOSUD-UPT-admitere-2018_PROCEDURA_ANEXE.pdf

- The Institutional Procedure for organizing the admission to Doctoral Studies at the Politehnica University Timișoara, the 2017 session approved by HCA no. 31 / 16.05.2017- presented in Annex_A.1.1.1.c-3.

publicly available at:

http://www.upt.ro/img/files/2016-2017/admitere/doctorat/IOSUD-UPT-admitere-2017_PROCEDURA_ANEXE.pdf

- The Institutional Procedure for organizing the admission to Doctoral Studies at the Politehnica University Timișoara - September 2016 approved by HCA no. 37 / 30.06.2015. In Annex_A.1.1.1.c-4. the version used in September 2016 is presented,

publicly available at:

http://www.upt.ro/img/files/2015-2016/admitere/doctorat/Procedura_admitere_doctorat_2015-2016.pdf

- The Institutional Procedure for organizing the admission to Doctoral Studies at the Politehnica University Timișoara - September 2015 approved by HCA no. 37 / 30.06.2015. In Annex_A.1.1.1.c-5. the version used in September 2015 is presented,

publicly available at:

http://www.upt.ro/img/files/2014-2015/admitere/doctorat/Procedura_admitere_doctorat_2015.pdf

- The procedure for public defense of the doctoral thesis and set up the doctoral file of the Ph.D. student in IOSUD-UPT, 2016 (Annex_A.1.1.1.c-6.),

publicly available at:

http://www.upt.ro/img/files/2015-2016/doctorat/Procedura_sustinere_teza_incepan_dcu_04-2016.pdf

- The procedure for the completion of doctoral studies and the public defense of the doctoral thesis in UPT, adopted by HCA 5 / 15.01.2019 (Annex_A.1.1.1.c-7.),

publicly available at:

<http://upt.ro/img/files/2019->

[2020/doctorat/HCA_5_din_2019_Instructiune_de_lucru_sustinere_teze_doctorat.pdf](http://upt.ro/img/files/2019-2020/doctorat/HCA_5_din_2019_Instructiune_de_lucru_sustinere_teze_doctorat.pdf)

- IOSUD-UPT has adopted, acc. Art 83 of RIODSUD, its own minimum performance criteria for the public defense of doctoral theses (publishing minimum 2 papers indexed Web of Science), a criterion currently correlated with the minimum standards of CNATDCU (National Council for Attestation of University Degrees, Diplomas and Certificates) for granting the title of doctor acc. OM 5110/2018.

- In the current epidemiological context, for the online defense of doctoral theses, the "Procedure for online defense of doctoral theses in UPT is established for academic year 2019-2020" (HS no.111 / 14.05.2020) presented in Annex_A.1.1.1.c-8.

publicly available at:

http://www.upt.ro/img/files/hs/2020/14.05.2020/HS_111_14.05.2020_Procuctura-sustinere-online-teze-doctorat.pdf

- Through HS 231 / 17.09.2020 (Annex_A.1.1.1.c-9.) the validity of the Procedure for the online defense of doctoral theses in UPT for the academic year 2020-2021 has been extended.

(d) IOSUD-UPT through the Doctoral School uses its own procedure for the recognition of the doctoral diploma and the doctoral title obtained abroad (Annex_A.1.1.1.d-1.).

In the annex Annex_A.1.1.1.d. the Recognition Certificates issued by IOSUD-UPT are presented for doctoral diplomas recognized by IOSUD-UPT.

Also, IOSUD-UPT collaborates permanently with CNRED regarding the recognition process, and sends periodically to CNRED a list of the recognition requests.

IOSUD-UPT through the Doctoral School uses its own procedure for recognizing the quality of doctoral coordinator obtained in other states (Annex_A.1.1.1.d-2.).

(e) According to the regulation in Annex_A.1.1.1.a. IOSUD-UPT operates under the coordination of the Rector of UPT having all the structures provided by law. The structures are transparent: The UPT management structure is presented in Annex_A.1.1.1.e-1., the CSUD / CSD structure is presented in Annex_A.1.1.1.e-2.

publicly available at:

http://www.upt.ro/Informatii_conducerea-universitatii-politehnica-timisoara_311_en.html

http://www.upt.ro/Informatii_consiliul-pentru-studii-universitare-de-doctorat---scoala-do_310_en.html

The register of minutes of CSUD / CSD meetings can be consulted at the headquarters of the Doctoral School of Engineering Studies. Meetings are organized whenever the situation requires it (analysis and approval of CSUD / CSD decisions, updating methodologies and instructions for doctoral studies, etc.).

(f) The relationship between IOSUD-UPT, the doctoral student and the Doctorate coordinator is formalized according to the law through the Contract for doctoral studies.

In Annex_A.1.1.1.f-1., Annex_A.1.1.1.f-2., Annex_A.1.1.1.f-3., Annex_A.1.1.1.f-4., Annex_A.1.1.1.f-5., the versions of the Contract used in the period 2019 - 2015 are presented.

(g) The Doctoral School aims to ensure the correlation of the topics of training programs based on advanced university studies with the research topics proposed by doctoral coordinators and assumed by IOSUD-UPT, doctoral coordinators and doctoral students through doctoral university contracts.

The training program based on advanced university studies is developed on the basis of an individual training plan based on advanced university studies (Annex 1 to the doctoral studies contract) developed solely and independently by the doctoral coordinator for each doctoral student, after admission to doctoral studies.

Based on the IOSUD-UPT Procedure for analysis and approval of proposals on the subject of the training program based on advanced university studies (Annex_A.1.1.1.g-1.), The Doctoral School Council, through the Director of the Doctoral School issues a decision that approves the plans for individual training based on advanced university studies for the current academic year (Annex_A.1.1.1.g-2.).

The meetings did not raise any doubts about the indicator.

Recommendations: None

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

According to the self-assessment document:

According to art.17, par. 5 of GD of the single doctoral school within IOSUD-UPT (681/2011 The regulation) – (Annex_A.1.1.1.a.) establishes mandatory criteria, procedures and standards regarding the following aspects:

a) acceptance of new doctoral coordinators, as well as the regulations regarding the method by that a doctoral coordinator may be revoked as a member of the doctoral school (Art. 16, 17);

b) the mechanisms through which decisions are taken regarding the opportunity, structure and content of the training program based on advanced university studies (Art. 55-67);

c) the procedures for changing the doctoral coordinator of a certain doctoral student and the procedures for mediating the conflicts (Art. 15, 25);

d) the conditions under which the doctoral program may be interrupted (Art. 47, 48);

e) ways to prevent fraud in scientific research, including plagiarism (Art. 77, 79, 85);

f) ensuring access to research resources; (Art. 68-72)

g) The attendance obligations of doctoral students (Art. 41, 53).

The meetings did not raise any doubts about the indicator.

Recommendations: None

The indicator is fulfilled.

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

**general description of the standard analysis.*

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

According to the self-assessment document:

The computer system for the record of doctoral students and the academic career used in the IOSUD-UPT comprises mainly of the ENROLL platform and ACCESS database. Instructions for completing the admission file in the ENROLL platform are presented in Annex_A.1.2.1-1. In Annex_A.1.2.1-2., examples of database usage are presented - List of doctors in the period 2016-2020 in the field of Energy Engineering.

The meetings did not raise any doubts about the indicator. Well, students have implied that they don't use the IT system, but they didn't complain about the lack of online services.

Recommendations: Promote the usage of IT systems towards students, ask them how to improve the online services in order to improve the IT systems and attract the students to use the system more often.

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

According to the self-assessment document:

IOSUD-UPT performed the verification of the similarity percentage in the doctoral theses elaborated starting with 2016, using the following computer programs, approved by MENCS acc. OM 3485/2016.

- Plagiat.pl, through the computer platform doct.edu.ro/doct of the Ministry of Education, between June 2016 and July 2017.

- SemPlag, through the platform uefiscdi-direct.ro/semplag/index.php, between August 2017 and September 2017.

- iThenticate (purchased by UPT), October 2017 - present.

- In Annex_A.1.2.2-1., there is a list of PhD students in the field of Energy Engineering for which computer programs were used to verify the percentage of similarity.

- In Annex_A.1.2.2-2., examples of using the similarity software for PhD students in the field of Energy Engineering.

The meetings did not raise any doubts about the indicator. For example, on the meeting with the ethical committee it was discussed an example where overlapping of 85,24% of content was reported and successfully resolved.

Recommendations: None

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.

**general description of the standard analysis.*

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

According to the self-assessment document:

List of grants for the field of Energy Engineering:

- The doctoral coordinators from the field of Energy Engineering participated, in the reference period, in implementation of grants presented in Annex_A.1.3.1. The involvement was both in research and in institutional grants.

- At the time of submitting the evaluation file, the situation of research grants is as follows:

- Research or institutional development grants / human resources in implementation: 1

- Research or institutional development grants / human resources obtained by doctoral coordinators in the last 5 years: 0

- Total contracts in the referenced field (2016-2020): 6.

Although the indicator is numerically met, it is recommended to apply more EU and international projects. The list of all active projects, acquired upon additional request, reveals that most of the projects are national, i.e. EU and international projects are not numerous.

The meetings did not raise any doubts about the indicator.

Recommendations: Support more applications of EU and international projects.

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

According to the self-assessment document:

- Existing doctoral students at the time of evaluation: 25

- Doctoral students existing at the time of evaluation who benefit from sources of funding other than government funding: 8

- $8/25 * 100 = 32 \%$

The meetings did not raise any doubts about the indicator.

Recommendations: Support more applications of projects with the possibility of funding the scholarships. Focus on EU and international projects that would enable this kind of cost. Also, cooperation with the industry and joint projects with partner companies are possible ways to fund the scholarships of students involved in such cooperation.

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 self-assessment document:

The data related to the application of the indicator are given in Annex_A.1.3.3.

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.

In summary, according to the annex: $S1 / S2 * 100 = 33.39 \%$ CRITERION FULFILLED $\geq 10\%$

The meetings did not raise any doubts about the indicator.

Recommendations: None.

The indicator is fulfilled.

Criterion A.2. Research infrastructure

**general description of the criterion analysis.*

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

**general description of the standard analysis.*

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

According to the self-assessment document:

The spaces and infrastructure of IOSUD / Doctoral School allow the implementation of research activities in the evaluated field, in accordance with the mission and objectives assumed (computers, specific software, equipment, laboratory equipment, library, access to international databases, etc.).

The meetings did not raise any doubts about the indicator, i.e. PhD supervisors, academic staff and PhD students confirmed their satisfaction with the equipment. Furthermore, the Doctoral School sent videos presenting the laboratories, which have confirmed that this indicator is fulfilled.

Recommendations: None

The indicator is fulfilled.

Criterion A.3. Quality of Human Resources

**general description of the criterion analysis.*

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

**general description of the standard analysis.*

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

According to the self-assessment document:

Within the field of Energy Engineering, 6 doctoral coordinators are affiliated to IOSUD - UPT. 4 of them meet the minimum CNATDCU criteria imposed by OMEN 6129/2016:

- $4/6 \times 100 = 66.6\%$ meet the standards.

The meetings did not raise any doubts about the indicator.

Recommendations: None

The indicator is 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

According to the self-assessment document:

Within the field of Energy Engineering, 6 doctoral coordinators are affiliated to IOSUD-UPT. 3 of them are tenured professors within IOSUD UPT. Details are presented in Annex A.3.1.2.

The meetings did not raise any doubts about the indicator.

Recommendations: None

The indicator is fulfilled.

Performance Indicator A.3.1.3. *The study subjects in the education program based on advanced higher education studies pertaining to the doctoral domain are taught by teaching staff or researchers who are doctoral thesis advisors / certified doctoral thesis advisors, professors / CS I or lecturer / CS II, with proved expertise in the field of the study subjects they teach, or other specialists in the field who meet the standards established by the institution in relation with the aforementioned teaching and research functions, as provided by the law.*

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

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

According to the self-assessment document:

The training program based on advanced university studies includes the following types of courses:

- CROSS-CURRICULAR COURSE named "Ethics and academic integrity in scientific research and dissemination of results"

- MASTER degree courses, which were not previously attended by the doctoral student.

- TUTORIAL courses: in the subject of doctoral research (based on individual study program proposed and coordinated by the doctoral coordinator).

For all courses within the training program based on advanced university studies, the courses are sustained by professors or researchers who have the level of doctoral coordinator / holders of habilitation degree, professor / CS I or associate professor / CS II with proven expertise in the field of taught subjects.

In Annex_A.3.1.3., the courses of the training program based on advanced university studies and their tenures are exemplified (which constitute Annex 1 to the doctoral study contract for each doctoral student).

The meetings did not raise any doubts about the indicator.

Recommendations: None

The indicator is fulfilled.

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

- 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.

According to the self-assessment document:

The list of doctoral coordinators and the number of doctoral students coordinated at the date of this report, is included in Annex_A.3.1.4.

Out of the total of 6 doctoral coordinators in the field of Energy Engineering, one doctoral coordinator supervises at the same time more than 8 doctoral students, but not more than 12, during their doctoral studies (3 or 4 years, depending on the doctoral field, to which are added the legally granted extension periods). Therefore, the percentage is: $(1/6) * 100 = 16.6\%$

The meetings did not raise any doubts about the indicator.

Recommendations: None

The indicator is fulfilled.

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

**general description of the standard analysis.*

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

According to the self-assessment document:

Five of the doctoral coordinators from the field of Energy Engineering fulfilled this criterion.

$5/6 * 100 = 83.3\%$

In Annex_A.3.2.1-1. - The lists with 5 publications or other achievements, are presented for each doctoral coordinator. At least 5 publications indexed Web of Science or ERIH are published in journals with impact factor or other achievements, with relevant significance to the evaluated doctoral field.

Upon additional asking, number of citation was provided for published papers. The number of (international) citations should be increased, i.e. international visibility should be improved.

The meetings did not raise any doubts about the indicator.

Recommendations: Define measures to increase the international visibility of the research (measurable through international citations of published papers).

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

According to the self-assessment document:

Five of the doctoral coordinators fulfill the criterion (at least 25% of the score requested by the minimal CNATDCU standards): $(5/6) * 100 = 83.3\%$

The meetings did not raise any doubts about the indicator.

Recommendations: None

The indicator is fulfilled.

Domain B. EDUCATIONAL EFFECTIVENESS

**general description of domain analysis.*

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

**general description of the criterion analysis.*

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.

**general description of the standard analysis.*

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

According to the self-assessment document:

The ratio between the number of master's degree graduates of other higher education institutions in the country or abroad who have registered for the competition for admission to doctoral studies in the last 5 years and the number of positions financed from the state budget considered for competition in the doctoral field is 0.11.

The ratio of the number of candidates in the last five years and the number of positions financed from the state budget considered for competition in the doctoral field is at least 1.2.

Recommendations: Although the indicator is formally met, it is evident that one indicator is not fulfilled. Thus, it is needed to improve the promotion of the study program to attract more candidates.

The indicator is fulfilled.

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

**general description of the standard analysis.*

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

According to the self-assessment document:

Admission to doctoral studies in IOSUD-UPT is regulated by the Institutional Procedure regarding the organization of admission to doctoral studies in IOSUD-UPT, updated annually with legislative acts.

According to this procedure, there is a set of selection criteria (Annex 7 of the Admission Procedure) for candidates – Annex_B.1.2.1.

- Academic performance is quantified by grades N1-N4 in the Selection Criteria.

- The interview with the applicant – related to the quality and clarity of the research directions and intentions of study, in line with the presentation of the research topic proposal - is quantified on the basis of grade N5

- The interest for the scientific research is quantified with the grades N6 - N8

- publications in the field are quantified with the grades N9 - N10
- The meetings did not raise any doubts about the indicator.

Recommendations: None
The indicator is fulfilled.

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

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

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

According to the self-assessment document:

Total enrolled (2015-2019): 29

Expelled in the first 3 years: 0

Abandonment rate = $(0/29) \times 100 = 0\%$

Details can be found in Annex B.1.2.2.

The meetings did not raise any doubts about the indicator.

Recommendations: None
The indicator is fulfilled.

Criterion B.2. The content of doctoral programs

**general description of the criterion analysis.*

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.

**general description of the standard analysis.*

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

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.

According to the self-assessment document:

The individual plan for the training of the doctoral student through advanced university studies, representing Annex 1 to the Contract of doctoral studies, contains three courses relevant for the scientific research training of the doctoral student.

The evidence of the results, obtained for the courses from the individual training plan, is kept at the UPT Doctoral School in examination minutes, summarized in Annex 2 of the Contract of the doctoral studies (Annex_B.2.1.1-2.).

Recommendations: Include students more in project teams and involve them more in writing project proposals.

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

According to the self-assessment document:

Within the advanced university training program for doctoral students from IOSUD-UPT, the discipline is included, mandatory for all doctoral students

"Scientific research, communication and deontology" (2008-2017).

The subject content sheet is public and can be found at the following addresses:

http://www.upt.ro/Informatii_cscs_419_en.html

http://www.upt.ro/img/files/2016-2017/doctorat/cscd/170511_CSCD.pdf

Starting with the year 2018 the cross-curricular course has been entitled "Ethics and academic integrity in scientific research and dissemination of results".

The subject content sheet is public and can be found at:

http://www.upt.ro/img/files/2019-2020/doctorat/EIACSDR/200528_Fisa_disciplinei_EIACSDR-2019-2020.pdf

The subject content sheets related to the academic years 2018/2019 and 2019/2020 are presented in Annex_B.2.1.2.

The meetings did not raise any doubts about the indicator.

Recommendations: None

The indicator is fulfilled.

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

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

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

According to the self-assessment document:

The main objective of doctoral study programs is to prepare doctoral students, through mentored doctoral research, to become independent scientific researchers, confirmed by obtaining the doctoral degree after publicly defending the doctoral thesis, meeting the minimum performance indicators established by IOSUD-UPT, or the indicators established by the CNATDCU specialized commissions if they exceed the minimum UPT indicators.

The completion of the courses from the training program based on advanced university studies or doctoral research activities aims at acquiring the competencies and abilities related to level 8 of qualifications, according to the National Qualifications Framework (CNC). Consequently, IOSUD-UPT applies a procedure for verifying the fulfillment of the exigencies of the doctoral university studies (Annex_B.2.1.3.).

The meetings did not raise any doubts about the indicator.

Recommendations: None

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.*

- 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 self-assessment document:

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.

After the enrollment of the doctoral student following the admission session for doctoral studies in IOSUD-UPT, the doctoral coordinator proposes the composition of the advising commission, which is approved by the Director of the Doctoral School.

- The advising commission includes specialists in the field and subject of the doctoral thesis, who assist and guide the doctoral student on specific aspects of the doctoral research program.
- The advising Commission members participates in all public meetings where the doctoral student presents the doctoral research project, respectively the research reports, on the dates established in the summary sheet of the research program.
- The advising Commission notifies the doctoral student's presentation of the activities provided in the summary sheet of the scientific research program and mentions whether the activity is identical to the one provided in it, expressing its point of view on the importance and level of activity performed (footnote 4 of the minutes for evaluation of the activities of the scientific research program).

In Annex_B.2.1.4. are presented the documents related to proposal for the advising commission members and minutes supporting the doctoral research project and research reports of the doctoral students in the field of Energy Engineering.

Although students confirm good relationship with PhD supervisors, they actually do not know official procedure if some problems arise.

The meetings did not raise any doubts about the indicator.

Upon additional asking, written evidence for meetings and counseling were provided:

- Research report 1
- Research report 2
- Published ISI papers
- Published IDB papers

Recommendations: Acquaint students with official procedures for solving possible problems/conflicts with supervisors.

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

According to the self-assessment document:

In Annex_B.2.1.5. the doctoral students existing at the time of the evaluation and the composition of the advising commissions are presented for the field of Energy Engineering.

Nr. doctoral students (PhD): 25

Nr. professors in advising commissions (CD): 10

Ratio Drd/CD: 2.5

The meetings did not raise any doubts about the indicator.

Recommendations: None.

The indicator is fulfilled.

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

**general description of the criterion analysis.*

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

**general description of the standard analysis.*

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

The paper:

- Artificial Intelligence Techniques for Optimal Power Flow; C. Barbulescu, S. Kilyeni, A. Simo, C. Oros aims to elaborate an original mathematical model focused on genetic algorithms (GA). The case study refers to real large scale power system. The improvement of the real power losses are significant (17 %) when all three control variables mentioned in section II are considered. There is also a conclusion that random mutation does not provide satisfactory results for large power systems. Thus, the paper contains significant original contributions in the respective domain.

In the paper:

- Distribution Network Expansion Planning. Real Distribution Network Case Study; C. Barbulescu, St. Kilyeni, A. Simo, C. Oros, F. Petrica

the power flow is computed using conventional methods, but the optimal power flow and distribution network expansion are performed using genetic algorithms (GA). The paper's focus is a developed software tool that can be used in the case of large scale, complex distribution networks. It behaves as a hybrid software tool, the genetic algorithm being used for the OPF and network expansion stages. Although helpful, the developed tool and the paper, in general, cannot be considered to be a significant original contribution.

In the paper:

- GA Based Distribution Network Expansion. Part 2. Case study: IEEE-30 Test System; St. Kilyeni, C. Barbulescu, C. Oros, A. Deacu

network expansion is discussed in two cases: with and without renewable sources. The obtained expansion solutions are analyzed and the authors propose a final one. To achieve this goal, network

reconfiguration and N-1 contingencies are performed. The optimal power flow and distribution network expansion performed using genetic algorithms (GA) can be considered as significant original contributions in the respective domain.

The paper:

- Network Usage With Probabilistic Distribution Factors Method; Cosmin OROS, Constantin BARBULESCU, Oana POP, Stefan KILYENI

presents a probabilistic network usage computing using distribution factors method. A software tool is developed in Matlab environment and contains a part dedicated to probabilistic power flow computing and another part allocated to network usage allocated to generators and consumers.

Usage of probabilistic power flow computing can be considered to be a significant original contribution.

The paper:

- Transient Response of Synchronous Generator to Faults on the Evacuation Overhead Line; Flaviu Dilerteu, Flaviu-Dan Surianu

presents two events occurring on the evacuation overhead power line of Râul Mare Retezat Hydroelectric Power Plant, describing perturbations caused by faults occurring on the evacuation overhead power line.

The paper clearly shows a case study without any significant original contribution.

Recommendations: None

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

According to the self-assessment document:

• Number of doctoral students who obtained the doctoral degree in the period 2016-2020: 2

• Number of articles presented at conferences: 9

Each doctoral student has at least one paper presented at prestigious international events, the details can be found in Annex_B.3.1.2. - List of students who obtained the title of doctor in the period 2016-2020 and the number of participations in conferences - field of Energy Engineering.

The meetings did not raise any doubts about the indicator.

Recommendations: None

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.

**general description of the standard analysis.*

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

According to the self-assessment document:

For the field of Energy Engineering, in the period 2016-2020, THERE WERE NO cases in which the same expert was part of more than two doctoral commissions for the public defense of theses coordinated by the same doctoral coordinator in the same year, as follows:

- 2016: No thesis defended.
- 2017: No thesis defended.
- 2018: 1 thesis defended.
- 2019: 1 thesis defended.
- 2020: No thesis defended.

List of students who defended their doctoral theses in the period 2016-2020 and the commissions of scientific experts - the field of Energy Engineering are presented in Annex_B.3.2.1.

The meetings did not raise any doubts about the indicator.

Recommendations: None

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

According to the self-assessment document:

The maximum ratio is not calculated because the number of doctoral theses defended in the last 5 years is $2 < 10$.

Recommendations: None

The indicator is not relevant.

Domain C. QUALITY MANAGEMENT

**general description of domain analysis.*

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

**general description of the criterion analysis.*

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

**general description of the standard analysis.*

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

- (a) the scientific work of Doctoral advisors;*
- (b) the infrastructure and logistics necessary to carry out the research activity;*
- (c) the procedures and subsequent rules based on which doctoral studies are organized;*
- d) the scientific activity of doctoral students;*
- e) the training program based on advanced academic studies of doctoral students;*
- f) social and academic services (including for participation at different events, publishing papers etc.) and counselling made available to doctoral students.*

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

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

According to the self-assessment document:

C.1.1.1-a. In UPT, the teaching and research staff periodically present the results of the research activity to the management of the department / faculty / university. The results are presented in documents standardized at the national level, centralized at department and university level and uploaded on the IT platform of Ministry of Education (ME). The results are considered for the process of allocating funding by ME and verified / validated by CNFIS.

In addition to these reports, there are also internal reports in UPT that are used in the process of allocating funding to departments (eg. internal reports made on the electronic platform COGITO, models

/ electronic evaluation grids used for evaluation of the teaching and research results to obtain the degree of merit).

These results are discussed, analyzed by the Board of Directors and departments, and presented and validated in the Annual Report of the Rector of UPT and in other institutional documents, such as, for example, Research Report.

The reports are used to monitor and evaluate the results and performances of teaching and research activities, both in terms of meeting the minimum standards developed / approved based on art. 303 para. (4) of LEN 1/2011, acc. HS no. 135 / 17.04.2014 as well as the fulfillment of OMENCȘ no. 6129/2016, regarding the approval of the minimum necessary and obligatory standards for granting the didactic titles in higher education, of the professional degrees of research-development, of the quality of doctoral coordinator and of the habilitation degree.

C.1.1.1-b. "UPT's strategic development plan for the period 2016-2020" considered the continuation of activities and the development of mechanisms to support research excellence in the university. In order to achieve these goals, the constant development of UPT's research infrastructure at the level of international standards, is necessary.

UPT's research activity is mainly carried out in the frame of 25 UPT research centers. Their research infrastructure is highlighted on the ERRIS platform, at the following link:

<https://eeris.eu/ERIO-2000-000R-0036>

Among the most important research infrastructures in UPT we can emphasize the Research Institute for Renewable Energies - ICER. It was funded by the POSCCE operational program, priority axis 2 "Competitiveness through Research, Technological Development and Innovation", in a period 2009–2014. The total value of the project was 66 882 357 lei. 18 new research laboratories were created and 5 were modernized, 120 equipments were purchased, 12 of them with a value of over 100,000 EUR. Many of the existing high-performance equipment at ICER are unique within the Timisoara University Center. These are used for research grants in interdisciplinary fields proceeding in UPT: Complex projects, PED, Bridge, H2020, cross-border projects, etc.

Another research center of UPT with a remarkable infrastructure is the Research Center for Materials Mechanics and Structural Safety (CEMSIG), established in 1999. The research areas emphasis on cold formed metal structures and the performance of metal and composite structures under seismic actions, fire and other natural and human hazards, as well as on high-performance materials for metal structures located in seismic regions. Through a POSCCE-contract ACTEX, CEMSIG benefited from research infrastructure worth 21 000 000 lei.

The development of UPT's research infrastructure is achieved through research and development contracts carried out in the university, obtained through national and international competitions, but also through UPT's internal research grants, organized in recent years and financed from UPT's own revenues and oriented to young researchers.

C.1.1.1-c. - Continuous updating of regulations, procedures, and working instructions in accordance with national legislation, but also with the evolution of the requirements of doctoral students or doctoral coordinators.

The procedure for admission to doctoral studies is updated periodically, in accordance with the modifications of national legislation.

For the academic year 2019-2020, the procedure can be found at:

http://www.upt.ro/img/files/2018-2019/admitere/doctorat/IOSUD-UPT-admitere-2019_procedura.pdf

The contract for doctoral studies is updated annually.

The documents related to doctoral students enrolled in the period 2015-2019 can be found publicly at:

http://www.upt.ro/Informatii_documentele-doctoranzilor-inmatriculati-in-perioada-2005-201_289_en.html

C.1.1.1-d. - According to the internal regulations of IOSUD - UPT, the minimum criterion for defending the doctoral thesis is the publication of 2 scientific papers indexed in the WOS database. This aspect is regulated in the Contract for doctoral studies, by art. 16.

Also, the scientific activity of doctoral students is monitored by the advising commissions during the doctoral study.

At the same time, within IOSUD-UPT, during the reporting period, the program to support doctoral students for the publication of papers in WOS indexed journals as well as the participation at conferences with WOS indexed procedures, was carried out. Details can be found at:

http://www.upt.ro/international/Mobilitati-Si-Cooperari-Internationale_Programul-de-finantare-ISI_27_ro.html

C.1.1.1-e. The courses of the training program based on advanced university studies related to the doctoral field are sustained by professors or researchers who have the quality of doctoral coordinator / professor / CS I or associate professor / CS II with proven expertise in the field of taught subjects.

The training program based on advanced university studies includes already described three types of courses.

C.1.1.1-f. Within IOSUD-UPT, the Career Counseling and Guidance Center operates as a structure of the Politehnica University Timișoara (UPT) with the mission to offer the best possible information, professional orientation and social integration of students:

<https://www.cicoc.upt.ro/>

<https://www.facebook.com/CCOC.UPT>

Also, within the cross-curricular course of "Ethics and academic integrity in scientific research and dissemination of results", lectures and seminars are organized in order to advise the doctoral students in participation at scientific events and the publication of articles in specialized journals:

http://www.upt.ro/img/files/2020-2021/doctorat/EIACSDR/210421_Fisa_disciplinei_EIACSDR-2020-2021.pdf

At the same time IOSUD-UPT financially supports the participation of doctoral students in scientific events and publication of scientific papers in WOS indexed journals:

http://www.upt.ro/international/Mobilitati-Si-Cooperari-Internationale_Programul-de-finantare-ISI_27_en.html

In 2018 within IOSUD-UPT, a scholarship program was developed for doctoral students participating in prestigious international conferences organized by UPT:

http://www.upt.ro/international/Mobilitati-Si-Cooperari-Internationale_Burse-pentru-doctoranzi-care-participate-in-conferences-organized-by-UPT_126_en.html

The meetings did not raise any doubts about the indicator.

Recommendations: None

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

According to the self-assessment document:

During the doctoral studies, doctoral students are periodically interviewed about the level of satisfaction regarding the advanced university training program (Annex_C.1.1.2-1.) and the scientific research program (Annex_C.1.1.2-2.).

In the Annex_C.1.1.2-3. a set of anonymous questionnaires from doctoral students is presented. Following the processing of questionnaires and the analysis of the answers offered by doctoral students, a set of measures is established to improve the general level of satisfaction with doctoral studies (Annex_C.1.1.2-4.).

Upon additional asking, the most efficient measures defined and carried out based on student questionnaires were provided:

- obtained the access of PhD students in various companies, to execute experimental determinations that could not be performed in the laboratory;
- exams for the subjects included in the training program were performed orally, as an opportunity for PhD students to learn to present their ideas.

The meetings did not raise any doubts about the indicator.

Recommendations: None

The indicator is fulfilled.

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

**general description of the criterion analysis.*

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

**general description of the standard analysis.*

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

- (a) the Doctoral School regulation;

- (b) the admission regulation;
- (c) the doctoral studies contract;
- (d) the study completion regulation including the procedure for the public presentation of the thesis;
- (e) the content of training program based on advanced academic studies;
- (f) the academic and scientific profile, thematic areas/research themes of the Doctoral advisors within the domain, as well as their institutional contact data;
- (g) the list of doctoral students within the domain with necessary information (year of registration; advisor);
- (h) information on the standards for developing the doctoral thesis;
- (i) links to the doctoral theses' summaries to be publicly presented and the date, time, place where they will be presented; this information will be communicated at least twenty days before the presentation.
 - description of the facts, the findings from the assessed institution's documents and the evaluation visit itself
 - analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

According to the self-assessment document:

The Doctoral School of Engineering Studies within IOSUD-UPT presented on the UPT website, in the section related to doctoral studies, http://www.upt.ro/Informatii_studii-universitare-de-doctorat_266_ro.html updated information on all above-mentioned points.

The meetings did not raise any doubts about the indicator.

Recommendations: None

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.

**general description of the standard analysis.*

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

According to the self-assessment document:

All PhD students have free access, from any computer with IP on the UPT campus, to the electronic resources and databases of the UPT Central Library. The Library databases can be accessed at:

- <https://library.upt.ro/baze-de-date/>

or

- directly from the PRIMO search system module, by selecting Primo, Central Index and Subscribed Databases

The meetings did not raise any doubts about the indicator.

Recommendations: None

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*

According to the self-assessment document:

IOSUD-UPT has purchased the computer program iThenticate (<http://www.ithenticate.com/>) used to analyze the degree of similarity of the content of doctoral theses with other documents.

In the final phase of the doctoral thesis, the Doctoral School, through the person specifically designated for similarity analysis, generates a similarity report with the iThenticate computer program. The similarity report is sent to the doctoral coordinator of the thesis.

Such similarity reports can be generated, at the request of the doctoral student or doctoral coordinator, in different phases of elaboration of the doctoral thesis, or of the scientific papers associated with the doctoral research program.

For the specific doctoral thesis, the doctoral coordinator elaborates a similarity report, associated by the report generated by the iThenticate as an annex. Annex_C.2.2.2., presents examples of using the computer program for doctoral students in the field of Energy Engineering.

The meetings did not raise any doubts about the indicator.

Recommendations: None

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*

According to the self-assessment document:

The doctoral studies contract, settled between IOSUD-UPT and each enrolled doctoral student, explicitly stipulates the obligations assumed by IOSUD-UPT regarding the access of doctoral students to the research infrastructure / facilities, as follows:

- Art.6.B.3 - to ensure the access of the doctoral student to the education and research infrastructure within the doctoral studies (Annex_C.2.2.3. - Doctoral studies contract).
- Depending on the specifics of the research laboratory, the doctoral student is trained in order to strictly follow the rules of labor protection and fire prevention and extinguishing.

In the meetings, the students did not complain about the accessibility of research laboratories or other facilities.

Recommendations: None

The indicator is fulfilled.

Criterion C.3. Internationalization

**general description of the criterion analysis.*

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

**general description of the standard analysis.*

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

According to the self-assessment document:

● In Annex_C.3.1.1-1. the ERASMUS mobility agreements between UPT and foreign universities are presented.

● The ERASMUS mobility agreements between UPT and foreign universities can be found publicly at: http://www.upt.ro/international/Mobilitati-Si-Cooperari-Internationale_Acorduri-bilaterale-Erasmus+_8_en.html

● The framework agreements between UPT and national or foreign universities can be found publicly at:

http://www.upt.ro/international/Mobilitati-Si-Cooperari-Internationale_Acorduri-cadru-de-cooperare-cu-universitati-din-tara-si-strainatate_31_ro.html

• Cooperation agreements with enterprises, associations and research centers can be found publicly at:
http://www.upt.ro/international/Mobilitati-Si-Cooperari-Internationale_Acorduri-de-cooperare-cu-intreprinderi,-asociatii-si-centre-de-cercetare_65_ro.html

The list of the doctoral students who have completed mobility internships for the field of Energy Engineering is presented in Annex_C.3.1.1. In total 118% is the ratio of students who performed mobility / existing students and Doctors number.

IOSUD-UPT has the constant concerns for increasing the degree of internationalization of students, implemented through the Strategic Plan for the internationalization of the higher education (2015-2020 and 2021-2028 respectively):

The meetings did not raise any doubts about the indicator.

http://www.upt.ro/img/file/Proceduri/Strategy%20for%20Internationalisation_UPT_2021_2028.pdf
http://www.upt.ro/img/file/Proceduri/Strategy_for_internationalisation_UPT_2015_2020.pdf

Recommendations: None.
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

According to the self-assessment document:

Between January 2016 and December 2020, no thesis was co-supervised with foreign experts in the field of Energy Engineering. At the level of IOSUD UPT, 2 international co-supervised theses were defended during this period. Currently in IOSUD - UPT there are 3 doctoral students whose thesis are co-supervised with foreign experts. The data are presented in detail in Annex_C.3.1.2-1. - The minutes of public defense of the doctoral theses co-supervised with foreign experts and the list of doctoral students from IOSUD-UPT whose theses are co-supervised with foreign experts.

• Annex_C.3.1.2-2. - presents the list of guests - senior experts who have given courses / lectures for doctoral students.

• Annex_C.3.1.2-3. - presents the list of the experts who gave courses / lectures for doctoral students as the outcome of mobility, through the program P1: Development of the national system of research - development Subprogram 1.1 - Human resources "Mobility projects for young researchers from diaspora".

The meetings did not raise any doubts about the indicator.

Recommendations: None.

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

According to the self-assessment document:

The internationalization of activities is supported by: short-term mobility abroad for doctoral students, participation of doctoral students in summer schools, conferences and other events abroad (Annex_C.3.1.1.); inviting leading experts who have given courses and lectures for doctoral students in UPT (Annex_C.3.1.2-2. and Annex_C.3.1.2-3.); informing the public and stakeholders regarding the doctoral field by posting on the Study in Romania platforms (Annex_C.3.1.3-2.); increasing the degree of international visibility of doctoral coordinators and implicitly of the Doctoral School through relevant publications in the field (Annex_A.3.2.1-1.), members of the scientific committees of international publications and conferences, members of the boards of international professional associations; invited to conferences or groups of experts held abroad, members of commissions for the defense of doctoral theses at top foreign universities (Annex_A.3.2.1-2.).

For the internationalization of the activities within the doctoral school, IOSUD - UPT participated in various promotion missions, at educational fairs to attract international doctoral students, preparing collaboration agreements with prestigious universities. Details can be found at:

http://www.upt.ro/Informatii-utile_apt-la-conferinta-si-expozitia-anuala-nafsa-2019_385_ro.html

http://www.upt.ro/Informatii-utile_firmele-italiene-vor-o-relatie-mai-stransa-cu-upt_351_ro.html

http://www.upt.ro/Informatii-utile_ambasadorul-mexicului-la-upt_324_ro.html

http://www.upt.ro/Informatii-utile_un-nou-acord-semnat-de-upt_344_ro.html

http://www.upt.ro/Informatii-utile_un-nou-acord-international-semnat-de-upt_276_ro.html

http://www.upt.ro/Informatii-utile_apt-a-semnat-un-acord-de-colaborare-cu-universitatea-din-ovi_229_ro.html

http://www.upt.ro/Informatii-utile_reprezentantii-apt-la-aniversarea-tu-munchen_227_ro.html

http://www.upt.ro/Informatii-utile_acord-de-colaborare-intre-apt-si-tu-graz_203_ro.html

http://www.upt.ro/Informatii-utile_parteneriat-apt----universitatea-khazar-azerbaidjan_121_ro.html

Details regarding doctoral theses defended in IOSUD - UPT in the period 2016-2020, having as references foreign experts, are presented in Annex_C.3.1.3.

In the field of Energy Engineering in the period 2016-2020, no doctoral thesis was defended with foreign expert as the member of the commission for public defense.

The meetings did not raise any doubts about the indicator.

Upon additional asking, some of the most efficient measures for improving the mobility of students were named:

- Concluding new Erasmus+ bilateral agreements ;
- Regular discussions with PhD students, to present the advantages of performing certain mobilities;
- Reimbursement of expenses related to mobility performed by PhD students, from the existing research contracts in the field of Power Engineering.

Recommendations: Define measures for increasing the number of foreign experts as members of the commission for public defense.

The indicator is fulfilled.

IV. SWOT Analysis

<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - good relationship between students and PhD advisors - support by the Doctoral school and the University - well-equipped laboratories, access to scientific journals and literature in general - well-functioning ethical committee - research and PhD dissertations based on real-world data provided by the companies 	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - low number of EU and international projects - low number of scholarships funded through additional sources - low number of master's degree graduates of other higher education institutions in the country or abroad who have registered for the competition for admission to doctoral studies
<p><u>Opportunities:</u></p> <ul style="list-style-type: none"> - stronger formalized cooperation with the industry and deeper involvement of alumni and employers in defining research plan and content of PhD study programs - cooperation with companies could result in joint projects funded by the companies - stronger internationalization based on existing agreements with universities from Europe - big EU and international projects for raising the international visibility 	<p><u>Threats:</u></p> <ul style="list-style-type: none"> - too short deadline for finishing the PhD study - there is an intention to increase the criteria for PhD supervisors. It is a welcomed QA measure, but it could endanger the minimum number of PhD supervisors needed for the domain - the research using soft computing methods could have the disadvantage of being abstract, i.e. having no reference in real-world applications. This should be avoided in the case of Energy Engineering domain, i.e. soft computing methods should be applied strictly to real-world problems from the energy engineering domain. This should be also communicated to interested PhD candidates in order to attract them more to interdisciplinary research.

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V. Overview of judgments awarded and of the recommendations

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
1.	PI	<p>A.1.1.1. The existence of specific regulations and their application at the level of the Doctoral School of the respective university doctoral study domain:</p> <p>a) the internal regulations of the Doctoral School;</p> <p>b) the Methodology for conducting elections for the position of director of the Council of doctoral school (CSD), as well as elections by the students of their representative in CSD and the evidence of their conduct;</p> <p>c) the Methodologies for organizing and conducting doctoral studies (for the admission of doctoral students, for the completion of doctoral studies);</p> <p>d) the existence of mechanisms for recognizing the status of a Doctoral advisor and the equivalence of the doctoral degree obtained abroad;</p> <p>e) functional management structures (Council of the doctoral school), giving as well proof of the regularity of meetings;</p> <p>f) the contract for doctoral studies;</p> <p>g) internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs based on advanced academic studies.</p>	Fulfilled	None
2.	PI	<p>A.1.1.2. The doctoral school' Regulation includes mandatory criteria, procedures and standards binding on the aspects specified in Article 17, paragraph (5) of the Government Decision No. 681/2011 on the approval of the Code of Doctoral Studies with subsequent amendments and additions.</p>	Fulfilled	None
3.	PI	<p>A.1.2.1. The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic background.</p>	Fulfilled	Promote the usage of IT students towards students, ask them how to improve the online services in order to improve the IT systems and

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
				attract the students to use the system more often.
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	None
5.	IP	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.	Fulfilled	Support more applications of EU and international projects.
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	Support more applications of projects with the possibility of funding the scholarships. Focus on EU and international projects that would enable this kind of cost. Also, cooperation with the industry and joint projects with partner companies are possible ways to fund the scholarships of students involved in such cooperation.
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	None
8.	CPI	A.2.1.1. The venues and the material equipment available to the doctoral school	Fulfilled	None

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		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		
9.	CPI	A.3.1.1. Minimum three doctoral thesis advisors within that doctoral domain, and at least 50% of them (but no less than three) meet the minimum standards of the National Council for Attestation of University Degrees, Diplomas and Certificates (CNATDCU) in force at the time when the evaluation is carried out, which standards are required and mandatory for obtaining the enabling certification.	Fulfilled	None
10.	PI *	A.3.1.2. At least 50% of all doctoral advisors have a full-time employment contract for an indefinite period with the IOSUD.	Fulfilled	None
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	None
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	None

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
13.	CPI	A.3.2.1. At least 50% of the doctoral thesis advisors in the evaluated domain have at least 5 Web of Science- or ERIH-indexed publications in magazines of impact, or other achievements of relevant significance for that domain, including international-level contributions that indicate progress in scientific research - development - innovation for the evaluated domain. The aforementioned doctoral thesis advisors enjoy international awareness within the past five years, consisting of: membership on scientific boards 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.	Fulfilled	Define measures how to increase international visibility of the research (measureable through international citations of published papers).
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	None
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	Fulfilled	Although the indicator is formally met, it is evident that one indicator is not fulfilled. Thus, it is needed to improve the promotion of the study program in order to attract more candidates.

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		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.		
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	None
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	None
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	Include students more in project teams and involve them more in writing project proposals.
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	None
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	None
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	Acquaint students with official procedures for solving possible problems/conflicts with supervisors.

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
22.	CPI	B.2.1.5. For a doctoral study domain, the ratio between the number of doctoral students and the number of teaching staff/researchers providing doctoral guidance must not exceed 3:1.	Fulfilled	None
23.	CPI	B.3.1.1. For the evaluated domain, the evaluation commission will be provided with at least one paper or some other relevant contribution per doctoral student who has obtained a doctor's title within the past 5 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	None
24.	PI *	B.3.1.2. The ratio between the number of presentations of doctoral students who completed their doctoral studies within the evaluated period (past 5 years), including posters, exhibitions made at prestigious international events (organized in the country or abroad) and the number of doctoral students who have completed their doctoral studies within the evaluated period (past 5 years) is at least 1.	Fulfilled	None
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	None
26.	PI *	B.3.2.2. The ratio between the doctoral theses allocated to one scientific specialist coming from a higher education institution, other than the institution where the defense on the doctoral thesis is organized, and the number of doctoral theses presented in the same doctoral study domain in the doctoral school should not exceed 0.3, considering the past five years. Only those doctoral study domains in which minimum ten doctoral theses have been presented within the past five years should be analyzed.	Fulfilled	None

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
27.	PI	<p>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:</p> <p>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.</p>	Fulfilled	None
28.	PI *	<p>C.1.1.2. Mechanisms are implemented during the stage of the doctoral study program to enable feedback from doctoral students allowing to identify their needs, as well as their overall level of satisfaction with the doctoral study program in order to ensure continuous improvement of the academic and administrative processes. Following the analysis of the results, there is evidence that an action plan was drafted and implemented.</p>	Fulfilled	None
29.	CPI	<p>C.2.1.1. The IOSUD publishes on the website of the organizing institution, in compliance with the general regulations on data protection, information such as:</p> <p>a) the Doctoral School regulation; 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;</p>	Fulfilled	None

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		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.		
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	None
31.	PI	C.2.2.2. Each doctoral student shall have access, upon request, to an electronic system for verifying the degree of similarity with other existing scientific or artistic works.	Fulfilled	None
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	None
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	None
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	Fulfilled	None

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		leading experts to deliver courses/lectures for doctoral students.		
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	Define measures for increasing the number of foreign expert as the member of the commission for public defense.

The recommendations contained in the report shall be resumed in the indicators' analysis. Other general recommendations may be made that do not fit within a particular indicator.

VERY IMPORTANT!!! – Each identified weakness must be correlated with at least one recommendation to improve the situation!

VI. Conclusions and general recommendations

Several important issues raised during the evaluation are resumed and some general conclusions are drawn on the quality of the education provided within the doctoral study domain under review; the Experts' Panel also presents general assessments about the institution. Other general recommendation may also be presented, which cannot be related to a specific indicator and have not been presented at point V.

A decision is proposed, together with the reasons for granting it (if the Experts' Panel members do not reach a consensus, each of them can propose and argue his/her own decision).

VII. Annexes

The following types of documents shall be attached:

- *The detailed schedule of the evaluation visit – MANDATORY.*
- *The survey questionnaire applied to doctoral students or academic staff in the doctoral study domain under review, the results - optional (e.g., in graphic form) and their interpretation - if applicable.*
- *Scanned documents – any document requested from the IOSUD during the evaluation visit and received, which is not found in the internal evaluation file received before the visit and referred to in the report.*
- *Pictures – if relevant issues are raised regarding the condition of the student residences, cafeterias, premises for teaching and learning activities, library etc.*
- *Screenshots/Print screens of the Doctoral School/IOSUD website proving specific claims in the report, accompanied by the date when they were accessed and saved.*
- *Any other documents relevant to the evaluation process referred to in the report.*



14.10.2021.

X

Signed by: Kruno Miličević