



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 13.9.-17.9.2021. The panel members were prof. univ. dr. COSTINAS Sorina, prof.dr.sc. Kruno Milicevic PhD and student member Voina Mircea.

Introduction according to the self-assessment document:

"Gheorghe Asachi" Technical University of Iași (TUIASI) is an accredited state institution of higher education and advanced research. Since its establishment in 1937, it functioned without interruption under other names, too, such as: "Gh. Asachi" Polytechnic school (Annex 1.1. Official Gazette no. 284 of 08.12.1937_TUIASI) and "Gheorghe Asachi" Polytechnic Institute (1948). The new namedates back to 1993 (Annex 1.2. Government Decision no. 209 of May 17 1993_ TUIASI), and the current structure is established through Government Decision HG 580/ 2014 (Annex 1.3. University structure).

The start of the re-organizing procedure for all ten doctoral schools of TUIASI in a single doctoral school was accomplished through Senate decision no. 347/October 27 2017. After the validation of elections for the position of Doctoral School Director and the members of the Doctoral School Council by the TUIASI Senate on March 30, 2018, the Doctoral School started to function.

SD-TUIASI organises doctoral studies in the following areas:

- Chemistry, Environmental Engineering, at "Cristofor Simionescu" Faculty of Chemical Engineering and Environmental Protection;

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



- Chemical Engineering, at the “Cristofor Simionescu” Faculty of Chemical Engineering and Environmental Protection and the Faculty of Industrial Design and Business Management;
- Mechanical engineering, at the Faculty of Mechanics and the Faculty of Machine Manufacturing and Industrial Management;
- Electrical engineering; Energy engineering, at the Faculty of Electrical Engineering, Energetics and Applied Informatics;
- Electronic engineering, telecommunications and information technologies, at the Faculty of Electronics, Telecommunications and Information Technology;
- Computer engineering and information technology; system engineering; at the Faculty of Automatic Control and Computer Engineering;
- Industrial engineering, at the Faculty of Machine Manufacturing and Industrial Management and the Faculty of Industrial Design and Business Management;
- Civil engineering and Building Services, at the Faculty of Civil Engineering and Building Services and The Faculty of Hydrotechnics, Geodesy and Environmental Engineering;
- Materials engineering, at the Faculty of Materials Science and Engineering, “Cristofor Simionescu” Faculty of Chemical Engineering and Environmental Protection and the Faculty of Mechanics.
- Engineering and management, at the Faculty of Industrial Design and Business Management.

The Power Engineering area of study has a long-standing tradition at “Gheorghe Asachi” Technical University of Iași (IOSUD-TUIASI), being the place where prestigious scholars conducted research (Dumitru Barbulescu, Gheorghe Savin, Leopold Sebastian, Ioan Bejan, Alexandru Poeată, Mihai Antoniu, Gheorghe Vasiliu, Nicolae Boțan, and Emil Luca). Over the course of time, the Power Engineering area of study has kept up with the academic, social and economic context, as well as with its mission and objectives. At present, doctoral activities in the Power Engineering doctoral area of study take place at the Faculty of Electrical Engineering, Energetics and Applied Informatics.

In order to accomplish its mission, the fundamental goal of PhD studies in the Power Engineering area of study is to develop professional competence, as well as transversal skills particular to the field, in the education programme based on advanced higher education studies, as well as in the scientific research programme.

The education programme based on advanced higher education studies has an advanced training component and a research one. The Power Engineering area of study provides PhD students with an advanced education programme which includes subjects whose aim is the unitary approach of matters pertaining to the formation of a researcher able to conduct high-level research using scientific methods and to use the research results in projects, publication and communication, all in compliance with the principles of academic ethics and integrity, research deontology and the right to intellectual property. The curriculum

is flexible and periodically updated in keeping with the novelties particular to the research field and the requirements of generation of PhD students.

The scientific research programme is developed in “Gheorghe Asachi” Technical University of Iași research labs, Faculty of Electrical Engineering, Energetics and Applied Informatics, under the supervision of 5 doctoral advisors.

The evolution of the number of PhD students and completed theses confirmed by minister’s orders in the past five years is briefly presented as follows (Year/Total no. of PhD students/Confirmed PhDs):

- 2016/26/0



- 2017/36/0

- 2018/38/0

- 2019/41/2

- 2020/48/3

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:

The institution organizing doctoral studies (IOSUD) has implemented the effective functioning mechanisms provided for in the specific legislation on the organization of doctoral studies. It has provided as annexes of self-assessment document all needed documents, which are also available on the site of TUIASI (www.doctorat.tuiasi.ro):

a) regulation of the Doctoral School:

http://www.doctorat.tuiasi.ro/doc/Regulamente/Regulament_SD_03.2021.pdf

b) methodology for the organisation of elections for the position of director of the Doctoral School Council (DSC), as well as for the election by the students of their representative in DSC and evidence of them having taken place;

http://www.doctorat.tuiasi.ro/doc/Proceduri_Alegeri%20Director%20CSUD_CCPD_DSD/PO.CSUD_09_E1R0_Membri%20CSUD_semnata.pdf

http://www.doctorat.tuiasi.ro/doc/Proceduri_Alegeri%20Director%20CSUD_CCPD_DSD/PO.CSUD_10_E1R0_Director%20SD_CSD.pdf

http://www.doctorat.tuiasi.ro/doc/Proceduri_Alegeri%20Director%20CSUD_CCPD_DSD/PO.CSUD_08_E1R0-1_Directori%20CCPD_Consilii.pdf

- methodologies for the organisation and delivery of doctoral studies (admission examinations for doctoral students, completion of doctoral studies):

- admission:

http://www.doctorat.tuiasi.ro/Htm/Admiterea_2021.htm

http://www.doctorat.tuiasi.ro/doc/Procedura%20admitere_02.2021.pdf

- completion of studies:

http://www.doctorat.tuiasi.ro/doc/DOCUMENTE_SUSTINERE/Procedura_Anexe/Revizie%2010.2020/PO.CSUD.01%20E2R0%20Procedura%20%20sustinere%20teza.pdf

d) existence of mechanisms for the recognition of the capability to supervise doctoral research and for the equivalency of doctorate degrees obtained in other states;

http://www.doctorat.tuiasi.ro/doc/Procedura%20echivalare%20conducere%20doctorat/PO.CSUD_03_E1R3.pdf



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

- http://www.doctorat.tuiasi.ro/Htm/Componenta_CSUD-2020.htm

f) doctoral studies agreement;

- <http://www.doctorat.tuiasi.ro/Htm/Contract%20doctorat.htm>

g) internal procedures for the analysis and approval of propositions regarding the topics of the training programme based on advanced university studies

- <http://www.doctorat.tuiasi.ro/Htm/Teme%20cercetare.htm>

- the procedure of initiation, approval, monitoring

and periodic evaluation of PhD programmes (art. 15, 16 and Annex 3):

http://www.doctorat.tuiasi.ro/doc/Proceduri_diverse/PO.CSUD.13/PO.CSUD.13%20E1R0_semnata.pdf

- Regulation of the DS (art. 1, art. 10, art.11):

http://www.doctorat.tuiasi.ro/doc/Regulamente/Regulament_SD_03.2021.pdf

Further details are to be found in Annex 2.1.

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:

The Regulation of the Doctoral School includes under:

-art. 13: specific references to the way new members who are doctoral advisors are accepted;

-art. 10, 11: references to the mechanisms by means of which the decisions regarding the content of the training programme are made;

-art. 14, 15, 16 in the regulation of DSC with references to the procedures for the doctoral advisor's replacement;

-art. 22, 23, 24, 25 in the regulation of DSC with references to the conditions under which the PhD programme can be interrupted;

-art. 32 in the regulation of DSC with references to the modalities to prevent fraud;



-art. 21 in the regulation of DSC and art. 15 in the regulation of DSC with references to the way access to research resources is ensured;
-the methodology regarding attendance obligations in accordance with a methodology elaborated by the Ministry of Education was not issued.

Details and links to these regulations are presented in Annex 2.2.

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 Doctoral School keeps the doctoral students' record by its own IT system consisting of a database, and by means of the Unique Matriculation Register (UMR). Print screens are shown in Annex 2.3. The meetings did not raise any doubts about the indicator. Well, students have implied that they don't use the IT system so often, but the usage frequency is not relevant for this indicator.

Recommendations: None

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:

Plagiarism Detector application is used (<http://www.plagiarism-detector.com/c/en/index.php>) on the basis of a contract concluded between TUIASI and Plagiati-Sistem Antiplagiat prin Internet SRL. A copy of the contract is presented in Annex 2.4, together with pieces of evidence of its use.



The meetings did not raise any doubts about the indicator.

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:

In the doctoral area of study Power Engineering, the situation is as follows:

- the number of research grants under implementation at the moment of submission of the application: 0

- the number of institutional/human resources development grants under implementation at the moment of submission of the application: 1

- the number of research or institutional/human resources development grants obtained by the doctoral advisors in the evaluated area within the last 5 years: 9

Details in Annex 2.5.

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, and there are some internal projects, 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:

The number of doctoral students on the budget funded places on period (1.10.2015 – 30.09.2020): 36

Doctoral students members in research grants: 4

The corresponding percentage: $4/36 = 0.11$ (11,11 %)

Details and copies of the agreements to be found in Annex 2.6

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 partially 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:

Sum of revenues Oct. 2015 – Sept 2020: 771229,48

Sum of expenses Oct. 2015 – Sept 2020: 27981349,15

Details about the calculation method and about data specific to the area are presented in Annex 2.7. Students at the meetings did not report any lack of support, i.e. it seems that students are not motivated enough to participate more in professional training.

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.



Recommendations: It is needed to define measures on how to increase motivation of students to participate more in professional training (attending conferences, summer schools, training, programs abroad, publication of specialty papers or other specific forms of dissemination etc.).

The indicator is partially 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 research infrastructure and the research services offer are presented publicly by the platform ERRIS, at (link):

<https://eeris.eu/ERIF-2000-000G-0868>

The research infrastructure purchased and developed over the past 5 years is presented in detail in Annex 2.8.

The learning spaces and the material equipment of the Doctoral School allow for research activities in the area of Power Engineering to take place, in accordance with the targeted mission and objectives.

The material equipment includes computers, specific software, equipment, laboratory equipment, library, access to international databases, etc.

Students reported at the meetings that some experimental research can not be carried out due to astronomical expenses, but they are satisfied with some cheaper alternative solutions. Nevertheless, it is needed to try to purchase related equipment and software, e.g. through EU and international projects.

Recommendations: Apply for projects that could enable procurement of needed, more expensive equipment and software.

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 doctoral area of study, there are 5 doctoral advisors and 5 meet the NCAUTDC minimal standards that are required and compulsory in order to obtain the habilitation qualification. The corresponding percentage is 100 %. Evidence for the fact that NCAUTDC are met is presented in Annex 2.9. 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:

The total number of doctoral advisors in the doctoral area of study Power Engineering: 5

Tenured doctoral advisors in the area of study: 4

The corresponding percentage: 80%

Details are presented in [Annex 2.10](#).

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 43 subjects in the education programme based on advanced higher education studies corresponding to the area Power Engineering are delivered full by lecturers holding the title of professor or associate professor, with expertise in the area of the subjects they teach within the evaluated area, according to the Curricula available online at:

<http://www.doctorat.tuiasi.ro/Htm/Planuri%20invatamant.htm>

Details are presented in Annex 2.11. (List of the papers) and Annex 2.11 (CV)

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

According to the self-assessment document:

The number of doctoral advisors in the area of Power Engineering supervising a number of no more than 8 doctoral students is 5. The number of doctoral advisors in the area of Power Engineering supervising a number of 8-12 doctoral students is 0. There are no doctoral advisors supervising more than 12 doctoral students during their doctoral studies period.

The corresponding percentage is 0%. Details in Annex 2.12.

The meetings did not raise any doubts about the indicator.

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.



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:

The number of doctoral advisors in the area who have no less than 5 Web of Science-indexed or ERIH-indexed publications in journals with an impact factor is 5. The number of doctoral advisors in the area who are members in the scientific or organising boards of international conferences within the past 5 years is 5. The corresponding percentage: 100%. Details and supporting documents are to be found in [Annex 2.13](#).

The meetings did not raise any doubts about the indicator.

Recommendations: None

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:

The number of doctoral advisors in the area of study who are still active in their scientific field, obtaining, on the basis of scientific results within the past 5 years, more than 25% of the score requested by NCAUTDC minimal standards in order to obtain the habilitation qualification (100%) is 5. The corresponding percentage is 100%. Details and supporting documents are to be found in Annex 2.14. 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:

In the past five years, there have been 43 budget funded places in the area of study. During this time, a number of 5 graduates from other institutions registered for the admission exam, amounting to a ratio of 0.12. The ratio between the number of candidates in the past five years (52 candidates) and the number of budget-funded places advertised in the Power Engineering area of study (43 budget-funded places) is $1.209 > 1.2$.



Details in [Annex 2.15](#). Although the indicator is numerically met, it is evident that one indicator is not fulfilled and another one is hardly met. Thus, it is needed to improve the promotion of the study program in order to attract more candidates.

Recommendations: Improve the promotion of the study program in order 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 programs in the area of Power Engineering is conducted according to selection criteria that include: academic, research and professional merit, interest in scientific or artistic/sports research, publications in the field and a research proposal. An interview with the applicant is a compulsory part of the admission procedure. Details and admission criteria in the past five years are presented in [Annex 2.16.a](#).

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:

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.



Total of registered students 2015-2019: 41.

PhD students expelled after 3 years: 4.

Dropout rate: 9.75% < 30%.

Details in Annex 2.16.b.

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

According to the self-assessment document:

The curricula show the existence of at least three important subjects for the PhD students' education for scientific research and one subject dedicated research methods, according to recommendations. The curricula for the past academic year (2020-2021) are:

http://www.doctorat.tuiasi.ro/doc/Planuri%20invatamant/Planuri%20invatamant_2020-2021.pdf

where one can notice the presence of three subjects relevant to the all the PhD students' education, that is:

- Academic ethics and integrity

- Research methods

- A specialised subject of the PhD advisor's choice, in collaboration with the PhD student.

- Individual study (as an optional subject, to be chosen by the CCPD)

The subject 'Research Methods' consists of in-depth notions on research methodologies and/or the statistical processing of data, according to the subject outline attached to this file.

Details and supporting documents are presented in Annex 2.17.

Although not directly connected to this indicator, it is important to mention that students have reported in the meetings that they are not included in writing project proposals, which is important for their future careers as researchers seeking funding. Furthermore, they are seldom included in project teams.

The meetings did not raise any doubts about the indicator.

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:

The subject 'Academic Ethics and Integrity', taught by prof. Nicolae Seghedin and prof. Mariana Gavrilesescu is offered by the Doctoral School.

<http://www.doctorat.tuiasi.ro/doc/Planuri%20invatamant/Planuri%20invatamant%202018-2019.pdf>

The subject outline is presented in Annex 2.18.

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 IOSUD established these mechanisms through the DSC, the DS regulations and the procedures drafted by DSC, where these skills are listed. In addition to the basic procedures there also specific procedures that regulate the mechanisms by which the education programme based on advanced higher education studies associated with the evaluated area

aim at learning outcomes, stating the knowledge, skills, duties and autonomy that PhD students should acquire after the completion of each subject or by conducting research.

http://www.doctorat.tuiasi.ro/Htm/Legislatie_Noutati.htm

and the procedure for the initiation, approval, monitoring and periodic evaluation of doctoral programmes:

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.



http://www.doctorat.tuiasi.ro/doc/Proceduri_diverse/PO.CSUD.13/PO.CSUD.13%20E1R0_semnata.pdf

Details are to be found in **Annex 2.19**.

Upon additional request, the DS has provided an example of study program changes for doctoral school, which have resulted from some shortcomings detected during the evaluation of the programs:
- in the education programme based on advanced higher education studies 2019-2020 new disciplines have been introduced such as "Eco-technologies and Recyclability", "Distributed Monitoring Systems", or "Information Technologies in product design and services".

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:

For the entire duration of the doctoral programme, PhD students in the area of Power Engineering benefit from the counselling/guidance of functional advisory committees, also reflected in guidance and opinions expressed in writing or during regular meetings.

Details regarding the existence and function of advisory committees are to be found in Annex 2.20.a, as well as the papers published by the PhD students with the members of the guidance committee, as a proof for good guidance.

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.

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:



Number of PhD students at the time of the evaluation: 51

Number of instructors/researchers providing guidance: 17

The ratio between the number of PhD students and the number of instructors/researchers providing guidance: 3:1

The ratio is equal with 3:1.

Details are to be found in [Annex 2.20.b](#)

Although numerically satisfying, the indicator is hardly met. Thus, it is needed to define measures how to increase teaching staff/researchers providing doctoral guidance.

The meetings did not raise any doubts about the indicator.

Recommendations: It is needed to define measures on how to increase teaching staff/researchers providing doctoral guidance.

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:

- Bayesian Networks Utilization for Reliability Evaluation of Power Systems; Alexandra Ciobanu, F. Munteanu, C. Nemes, Department of Power Engineering "Gheorghe Asachi" Technical University Iasi, Romania

presents how the method based on Bayes' theorem of conditional probability can be used for reliability evaluation of different architectures of power system nodes and electricity supply chains. The usage of the Bayesian networks as a highly versatile tool for automated reasoning for systems driven by probabilistic variables is an excellent example of a multidisciplinary approach and is a significant original contribution.

The paper:

- Wind Farm Optimal Grid Integration based on Voltage Stability Assessment; Radu Toma, Mihai Gavrilas



Faculty of Electrical Engineering, "Gheorghe Asachi" Technical University, Iasi, Romania

presents a comparative study for a real network before and after the integration of a doubly-fed induction generator (DFIG) based wind farm (WF) and after using the voltage stability (VS) analysis to optimize the WF location from the VS point of view. The paper has no significant original contribution because the paper presents the study of the effects that the location of a WF in the HV sub-transmission grid in Eastern Romania can have on the voltage stability, i.e. the analyzed case is too specific for wider application.

Recommendations: None

The indicator also depends on the reviews of other panel members.

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 PhD students who completed the doctoral studies programme in the past five years: 5. Number of presentations per area of study: 16. Ratio: 3.2 >1.

Details are presented in Annex 2.22..

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:

Decision copies following the public defense of PhD theses are presented in Annex 2.23.



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:

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

Details are presented in [Annex 2.24](#).

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:

The main applicable procedure is:

- THE PROCEDURE FOR THE INITIATION, APPROVAL, MONITORING AND PERIODIC EVALUATION OF DOCTORAL PROGRAMMES, CODE PO.CSUD.13:

http://www.doctorat.tuiasi.ro/doc/Proceduri_diverse/PO.CSUD.13/PO.CSUD.13%20E1R0_semnata.pdf

Supporting procedures:

- THE PROCEDURE FOR THE EVALUATION OF PHD SUPERVISORS BY THE MANAGEMENT STRUCTURES, CODE PO.CSUD.12:

http://www.doctorat.tuiasi.ro/doc/Proceduri_diverse/PO.CSUD.12%20E1R0_semnata.pdf

- Annex PO.CSUD.13-A3 of PO.CSUD.13 contains specific details regarding the periodic evaluation process in all mentioned aspects concerning this criterion.

- THE PROCEDURE FOR THE ACCOMODATION OF STUDENTS DORMITORIES:

https://www.tuiasi.ro/wpcontent/uploads/2020/10/PO.PRS_01_E1R5.pdf

- The regulation for the organisation and running of the sports facility:

<https://campus.tuiasi.ro/wp-content/uploads/ROFBaza-Sportiva.pdf>

- Access to the TUIASI dispensary.

- Free access to the TUIASI library:

<https://biblioteca.tuiasi.ro/>

- The regulation for the running and organisation of the TUIASI Center for career orientation, counselling and social inclusion <https://campus.tuiasi.ro/centrul-de-consiliereorientare-in-cariera-si-incluziune-sociala/>

The listed procedures also establish evaluation mechanisms concerning:

- a) the PhD advisors' scientific activity;
- b) the infrastructure and logistics necessary for conducting research;
- c) the regulations and procedures on which the organisation of doctoral studies is based;
- d) the PhD students' scientific activity;
- e) the PhD students' education programme based on advanced higher education studies;
- f) the social and academic support services;
- g) counselling services.

The social and academic support services (including regarding participation to various events, the publication of articles etc.) and counselling at the PhD students' disposal can be identified through:

- professional counselling;

- accommodation;

- access to campus facilities;

- the posting of local, national and international events regarding doctoral studies.

Details regarding implemented procedures and support services provided to PhD students are to be found in [Annex 2.25](#).

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:

The Doctoral school is constantly preoccupied with the PhD students' level of satisfaction. The first questionnaire testing the level of satisfaction was distributed in 2018, followed by a series of questionnaires which included:

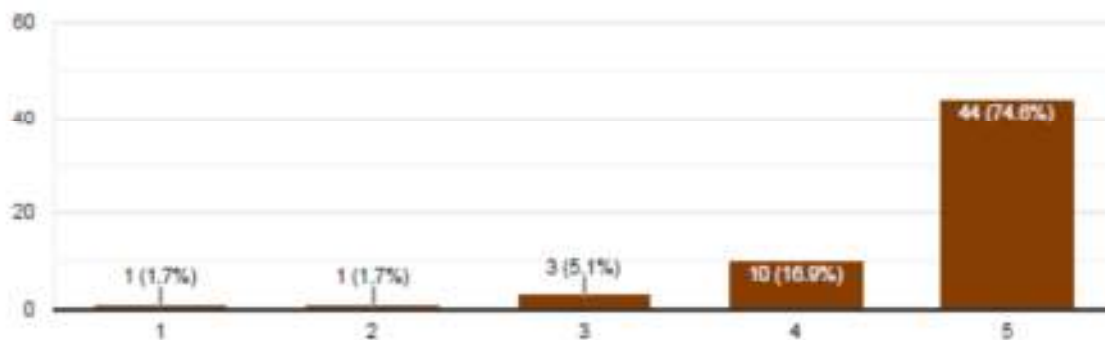
- The administrative services;
- The education programme based on advanced higher education studies;
- Assessment and grading;
- Communication with the PhD advisor;
- Research infrastructure;
- The scientific relationship with the PhD advisor;
- The relationship with the DSC and DS;
- The need to implement various measures;
- Other criteria.

A plan of action was drafted and implemented as a result of the analysis of the obtained results, as seen in detail in [Annex 2.26](#).

Upon additional request, the DS has emphasized the close collaboration with the guidance committee members as the most efficient measure. In fact, in the statistics associated with the questionnaires sent by the PhD students, which are anonymous, the answer is presented in the figure below. It can be seen that about 75% consider this collaboration to be very effective.

Cat de eficienta este colaborarea cu comisia de indrumare?

59 responses



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:

All regulations and procedures published at the link below:

<http://www.tuiasi.ro/rectorat/consiliul-pentrustudiile-universitare-de-doctorat>
www.doctorat.tuiasi.ro

Details and individual links can be found in Annex 2.27.

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 access to international databases particular to their area of study on any computer registered in the TUIASI network through the ANELIS (National Electronic Access to the Scientific Literature for Supporting the Research and Education System in Romania) contract. The databases provide access to: Web of Science, SCOPUS, Science Direct, IEEE, Springer etc. Details and a copy of the contract are to be found in [Annex 2.28](#).

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:

TUIASI signed a contract of service with the 'Plagiat-Sistem Antiplagiat prin internet SRL' (Plagiarism-Anti-plagiarism System via the Internet LLC) company to check the degree of similarity. Each PhD student has access, upon request, through their PhD supervisor, to an electronic system to check the degree of similarity with other scientific works. Access is free for up to 50000 signs annually, anything exceeding this number requiring payment. Access details and payment rules are to be found in detail in [Annex 2.29](#).

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:

PhD students have access to research laboratories with the endorsement of the laboratory head instructor, also mentioned by DSC regulations. Furthermore, a specific access regulation was developed considering the situation in the country starting with March 2020. Details are to be found in Annex 2.30.

The meetings did not raise any doubts about the indicator.

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:

The number of mobility agreements with foreign universities: 22

Number of PhD students with mobilities/ participation to international scientific conferences:

12. However, during the visit to Iasi, it was discovered that there were 13 students who benefited from Erasmus mobilities. The mobility percentage being $13/36 = 36\%$ (from total number of the students on the budget-funded places on period (1.10.2015 – 30.09.2020: 36)

The IOSUD develops and implements policies and action plans designed to increase of the number of PhD students participating in scholarships abroad to up to at least 20%, the target of the European Higher Education Area. Briefly, among these measures we can find:

- the development of the Erasmus programme;



- the partnership with the platform phd-hub.eu;
- the set-up of summer schools for PhD students;
- the introduction of the European PhD;
- encouraging participation in programmes of the COST type;
- posting international events dedicated to doctoral studies on the website, scholarships in the European and non-European areas.

Details are to be found in [Annex 2.31](#).

Upon additional request, the DS has emphasized the following measures for improving the mobility:

- implementation of the new Erasmus Plus program;
- introduction of mixed mobility or doctoral student mobility for a short period of physical mobility, between 5-30 days;
- introduction of the new BLENDED Intensive Programs;
- support by TUIASI of trips to international conferences and advanced research internships.

Recommendations: It is needed to define measures on how to increase motivation of students to participate in mobility activities.

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:

The number of joint international supervision agreements: 0

First-rank experts that held classes/lectures before the PhD students in 2016 - 2020: 12

Details on agreements and a few measures to encourage the development of cooperation with first rank experts from the evaluated area are to be found in [Annex 2.32](#).

The meetings did not raise any doubts about the indicator. However, the numbers must be significantly increased.

Recommendations: Define measures to increase the number of international co-tutelage and leading experts to deliver courses/lectures for doctoral students.

The indicator is partially 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 internationalisation of activities in the area of doctoral studies is also supported by other specific measures, such as:

- participation to educational fairs in order to attract international PhD students;
- the inclusion of international experts in advisory committees or PhD thesis defense committees;
- joint-supervision theses;
- participation in international PhD defense committees;
- the establishment of the European PhD;
- the inclusion of doctoral studies in specialised European networks etc.

Details are to be found in [Annex 2.33](#).

The meetings did not raise any doubts about the indicator. Upon additional request, the DS has grouped activities according to the categories above. This was further confirmation that the DS has various internationalization activities.

Recommendations: None

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 	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - low number of candidates - low student mobility - low number of EU and international projects - low number of scholarships funded through additional sources - low participation of students in professional trainings
<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 - stronger internationalization based on existing agreements with universities from Europe - big EU and international projects for raising the international visibility and funding expensive equipment and software 	<p><u>Threats:</u></p> <ul style="list-style-type: none"> - too short deadline for finishing the Phd study



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>	The indicator is 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>	The indicator is 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>	The indicator is fulfilled	None

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
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.	The indicator is 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.	The indicator is 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%.	The indicator is partially fulfilled	Support more application of projects with the possibility of funding the scholarships. Focus on EU and international projects that would enable this kind of costs. Also the cooperation with the industry and joint projects with partner companies are possible way of funding the scholarships of students involved in such kind of 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.).	The indicator is partially fulfilled	It is needed to define measures on how to increase motivation of students to participate more in professional trainings (attending conferences, summer schools, training, programs abroad, publication of specialty papers or other specific forms of dissemination etc.).



No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
8.	CPI	<p>A.2.1.1. The venues and the material equipment available to the doctoral school enable the research activities in the evaluated domain to be carried out, in line with the assumed mission and objectives (computers, specific software, equipment, laboratory equipment, library, access to international databases etc.). The research infrastructure and the provision of research services are presented to the public through a specific platform. The research infrastructure described above, which was purchased and developed within the past 5 years will be presented distinctly</p>	<p>The indicator is fulfilled</p>	<p>Apply for projects that could enable procurement of needed more expensive equipment and software.</p>
9.	CPI	<p>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.</p>	<p>The indicator is fulfilled</p>	<p>None</p>
10.	PI *	<p>A.3.1.2. At least 50% of all doctoral advisors have a full-time employment contract for an indefinite period with the IOSUD.</p>	<p>The indicator is fulfilled</p>	<p>None</p>
11.	PI	<p>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.</p>	<p>The indicator is fulfilled</p>	<p>None</p>



No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
12.	PI *	<p>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%.</p>	<p>The indicator is fulfilled</p>	<p>None</p>
13.	CPI	<p>A.3.2.1. At least 50% of the doctoral thesis advisors in the evaluated domain have at least 5 Web of Science- or ERIH-indexed publications in magazines of impact, or other achievements of relevant significance for that domain, including international-level contributions that indicate progress in scientific research - development - innovation for the evaluated domain. The aforementioned doctoral thesis advisors enjoy international awareness within the past five years, consisting of: membership on scientific boards of international publications and conferences; membership on boards of international professional associations; guests in conferences or expert groups working abroad, or membership on doctoral 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.</p>	<p>The indicator is fulfilled</p>	<p>None</p>
14.	PI *	<p>A.3.2.2. At least 50% of the doctoral thesis advisors in a specific doctoral study domain continue to be active in their scientific field, and acquire at least 25% of the score requested by the minimal CNATDCU standards in force at the time of the evaluation, which are required and mandatory for acquiring their enabling certificate, based on their scientific results within the past five years</p>	<p>The indicator is fulfilled</p>	<p>None</p>

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
15.	PI *	B.1.1.1. The ratio between the number of graduates of masters' programs of other higher education institutions, national or foreign, who have enrolled for the doctoral admission contest within the past five years and the number of seats funded by the state budget, put out through contest within the doctoral domain is at least 0.2 or the ratio between the number of candidates within the past five years and the number of seats funded by the state budget put out through contest within the doctoral studies domain is at least 1,2.	The indicator is fulfilled	Improve promotion of the study program in order to attract more candidates.
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.	The indicator is 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%.	The indicator is 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.	The indicator is fulfilled	Include students more into 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.	The indicator is 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,	The indicator is fulfilled	None



No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		responsibility and autonomy that doctoral students should acquire after completing each discipline or through the research activities.		
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.	The indicator is fulfilled	Acquaint students with official procedures for solving possible problems/conflicts with supervisors.
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.	The indicator is fulfilled	It is needed to define measures how to increase teaching staff/researchers providing doctoral guidance.
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	The indicator is 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.	The indicator is 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.	The indicator is fulfilled	None

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
26.	PI *	<p>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.</p>	<p>The indicator is fulfilled</p>	<p>None</p>
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> <ul style="list-style-type: none"> 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>The indicator is fulfilled</p>	<p>None</p>
28.	PI *	<p>C.1.1.2. Mechanisms are implemented during the stage of the doctoral study program to enable feedback from doctoral students allowing to identify their needs, as well as their overall level of satisfaction with the doctoral study program in order to ensure continuous improvement of the academic and administrative processes. Following the analysis of the results, there is evidence that an action plan was drafted and implemented.</p>	<p>The indicator is fulfilled</p>	<p>None</p>



No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
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> <ul style="list-style-type: none"> 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. 	The indicator is fulfilled	None
30.	PI	<p>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.</p>	The indicator is fulfilled	None
31.	PI	<p>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.</p>	The indicator is fulfilled	None
32.	PI	<p>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.</p>	The indicator is fulfilled	None



No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
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.	The indicator is fulfilled	It is needed to define measures on how to increase motivation of students to participate in mobility activities.
34.	PI	C.3.1.2. In the evaluated doctoral study domain, support is granted, including financial support, to the organization of doctoral studies in international co-tutelage or invitation of leading experts to deliver courses/lectures for doctoral students.	The indicator is partially fulfilled	Define measures to increase the number of international co-tutelage and 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.).	The indicator is fulfilled	None

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.*

24.9.2021.
