

## **The External Evaluation Report of a Doctoral Study Domain**

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### **I. Introduction<sup>1</sup>**

The evaluation of the Chemistry Doctorate School of the West University of Timisoara (IOSUD) was conducted in the period of October 11-15, 2021. The evaluation committee was composed of 3 persons, Prof. Aurel Pui, Dr Larisa-Maria Petrila and Prof. Stephane Parola (ENS Lyon, France) as international expert. Prof. Aurel Pui did the visit on site.

The school has 6 PhD advisors and an average of 4 new PhD student every year.

### **II. Methods used**

The method used for this report evaluation is based on :

- A first analysis of the internal evaluation report of the doctoral study domain under review and its Annexes;
  - Meeting with doctoral students in the doctoral school of chemistry;
  - Meeting with the graduates of the doctoral school of chemistry;
  - Meeting with employers of the graduates in the doctoral school of chemistry;
  - Meeting with the doctoral advisors in the doctoral school of chemistry;
  - Meeting with the directors of the research centers;
  - Meeting with the representatives of the various structures of the IOSUD/Doctoral School(s): The Council of the Doctoral School, the Ethics Commission (including with the student representatives of these structures);

### **III. Analysis of ARACIS's performance indicators**

#### **Domain A. INSTITUTIONAL CAPACITY**

*This report concerns the evaluation of the Chemistry domain.*

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<sup>1</sup> Each time when applicable the information shall be presented gender-wise.



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

This analysis is based on the school organization, the student selection rules, the quality assessment, the way decisions are taken, the level of interactions between students and university representatives or research staff, relationship between the different functional organs, and the financial management dedicated to doctoral studies.

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

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

*(a) the internal regulations of the Doctoral School;*

*Globally the school propose clear regulations regarding the administrative aspects.*

*(b) the Methodology for conducting elections for the position of director of the Council of doctoral school (CSD), as well as elections by the students of their representative in CSD and the evidence of their conduct;*

*The council is only composed by two persones elected among the representatives of PhD advisors. There are student elections but at the moment there is no student representative. The council is missing also two external members.*

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

*The admission of doctoral students is based on merit and results at the university.*

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

*No mechanism was presented. This does not seem to apply to this school.*

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

*There are no regular planed meeting. The members that are only two seems to meet when needed. The composition of the council doesn't follow the regulations.*

*(f) the contract for doctoral studies;*

*The students have a contract with the school, with or without fundings depending on the situation.*

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

*There is no specific procedure.*



*Recommendations: The composition of the doctorate school council should follow the official governmental regulations, and include at least one PhD student representative and two external members.*

**The indicator is partially 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.*

*Recommendations: Include PhD students and external experts in the council.*

**The indicator is fulfilled.**

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

**Performance Indicator A.1.2.1.** *The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic background.*

*Yes.*

**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.*

*Yes, all manuscripts are checked.*

**The indicator is fulfilled.**

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

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

**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%.*

*1 over 5 students are financed by contract, which means 20%.*

*Recommendations: Increase the ratio to 60% within the next 4 years.*

**The indicator is fulfilled.**



**Performance Indicator \*A.1.3.3.<sup>2</sup>** *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.).*

*At this stage the criteria is not totally fulfilled due to administrative issues.*

*Recommendations: This is important and must be a priority.*

***The indicator is partially fulfilled.***

## **Criterion A.2. Research infrastructure**

*The evaluation is based on the quality of equipment devoted to research projects and the renewal plans, the safety aspects.*

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

**Performance Indicator A.2.1.1.** *The venues and the material equipment available to the doctoral school enable the research activities in the evaluated domain to be carried out, in line with the assumed mission and objectives (computers, specific software, equipment, laboratory equipment, library, access to international databases etc.). The research infrastructure and the provision of research services are presented to the public through a specific platform. The research infrastructure described above, which was purchased and developed within the past 5 years will be presented distinctly.*

*The initial list from the internal evaluation was updated. The broad range of equipment allows to run research projects in good conditions. A replacement policy has been anticipated for the ones that are obsolete. This aspect is well managed.*

*Recommendations: An evaluation of safety rules (very important in the case of Chemistry domain) and safety conditions should be added here.*

***The indicator is fulfilled.***

## **Criterion A.3. Quality of Human Resources**

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

*The scientific quality and the capacity of the research PhD advisor staff is evaluated here based on their involvement in research (publications, projects, recognitions), in teaching aspects and on the level of their availability (number of coordinated students).*

**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*

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<sup>2</sup> 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.



evaluation is carried out, which standards are required and mandatory for obtaining the enabling certification.

6 PhD advisors fulfill the conditions (one being retired in the mean time)..

Recommendations: maintain at least 6 advisors.

**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.

Yes

**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.

Yes

**The indicator is fulfilled.**

**Performance Indicator \*A.3.1.4.** The percentage of doctoral thesis advisors who concomitantly coordinate more than 8 doctoral students, but no more than 12, who are themselves studying in doctoral programs<sup>3</sup> does not exceed 20%.

No PhD supervisors with more than 8 PhD students.

**The indicator is fulfilled.**

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

**Performance Indicator A.3.2.1.** At least 50% of the doctoral thesis advisors in the evaluated domain have at least 5 Web of Science- or ERIH-indexed publications in magazines of impact, or other achievements of relevant significance for that domain, including international-level contributions that indicate progress in scientific research - development - innovation for the evaluated domain. The aforementioned doctoral thesis advisors enjoy international awareness within the past five years, consisting of: membership on scientific boards of international publications and conferences; membership on boards of international professional associations; guests in conferences or expert groups working abroad, or membership on doctoral defense commissions at universities abroad or co-leading with universities abroad. For Arts and Sports and Physical Education Sciences, doctoral thesis advisors shall prove their international visibility within the past five years by their membership on the boards of professional associations, membership in organizing committees of arts events and international competitions, membership on juries or umpire teams in artistic events or international competitions.

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<sup>3</sup> 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.



*All of the doctorate advisors fulfill the criterion.*

**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.*

*All are fulfilling the criterion.*

**The indicator is fulfilled.**

## **Domain B. EDUCATIONAL EFFECTIVENESS**

*The level of candidates, the number of candidates, selection criteria, the origin of candidates, the behavior of PhD students after graduation, are evaluated.*

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

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

*The chemistry doctoral school is attractiv mostly for local undergraduated students.*

**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.*

*yes*

*Recommendations: The ratio appears to low for having national and international recognition. The attractivity towards national and international students should be improved.*

**The indicator is fulfilled.**

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

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

*Selection criteria include the academic records of the student, and interview process.*

*Recommendations: Attract external candidates. Organize a competition with the doctorate school council including oral presentation of the research project as well as a scientific and motivation discussion.*

**The indicator is fulfilled.**





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

*Since 2013, 5 renouncements are noticed over 43 enrolled students.*

*Recommendations: Organize intermediates evaluation process with the council to check the advancement of the project and the student motivation (in particular in specific pandemic situations).*

**The indicator is fulfilled.**

## **Criterion B.2. The content of doctoral programs**

*The evaluation take in consideration the proposed training courses during the PhD program, its scientific level and variety.*

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

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

*The program contains essentially topics related to the research areas of the research institutes with 3 scientific courses (Quantum nanochemistry, bionanotechnology, Chromatography/spectroscopy applied to nanochemistry), one course on ethics and one on the writing of publication and management of science.*

*Recommendations: Diversify the scientific topics to open the students to other fields (Science is becoming highly interdisciplinary) including external lecturers coming from academics or industry.*

*Adapt the ethic lectures by comparison to the one already proposed for the undergraduates.*

**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.*

*Yes*

*Recommendations: Adapt it to the public and should be different from the undergraduate courses.*

**The indicator is fulfilled.**

**Performance Indicator B.2.1.3.** *The IOSUD has mechanisms to ensure that the academic training program based on advanced university studies addresses „the learning outcomes”, specifying the knowledge, skills, responsibility and autonomy that doctoral students should acquire after completing each discipline or through the research activities<sup>5</sup>.*

**The indicator is fulfilled.**

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<sup>4</sup> 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.

<sup>5</sup> 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.



**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.

*This is handled by the doctoral supervisor or a steering commission (PhD advisor + 3 members).*

*Recommendations: Propose an annual evaluation committee to check the advancement of the project and working conditions.*

**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.

*There are 6 PhD advisors with 16 registered PhD students, for a ratio of 2.66.*

**The indicator is fulfilled.**

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

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

*This evaluation concerns essentially participations to conference and publications.*

**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.

*This is accomplished.*

*Recommendations: This is a crucial criterion to be highly considered, giving an international recognition and allowing visibility and thus invitations in international conferences. Target recognized international journal that are indexed and with broad reader community. Publish in journal requesting fees only of necessary, favorize high level journals free of charges in a first attempt. Increase the number of articles and the quality of the journals.*

**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.

*This is accomplished.*

*Recommendations: Improve participation with oral presentations in highly recognized international conferences. Increase funding devoted to student participations.*

**The indicator is fulfilled.**





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

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

**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.*

**The indicator is fulfilled.**

## **Domain C. QUALITY MANAGEMENT**

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

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

*\*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;*  
*UVT is part of the Anelis+ consortium. However there is no specific and clear internal process for evaluation of Doctoral advisors. However the quality of the PhD advisors is good and there is no specific issues on this aspect.*
- (b) *the infrastructure and logistics necessary to carry out the research activity;*  
*Although the infrastructure is good, I don't see any evaluation process on this aspect.*
- (c) *the procedures and subsequent rules based on which doctoral studies are organized;*  
*This is organized by the Doctorate school council based on the regulations.*
- d) *the scientific activity of doctoral students;*  
*Scientific activities are followed by the advisor and the steering commission but with no regularly planned evaluation meetings.*
- e) *the training program based on advanced academic studies of doctoral students;*  
*There is a plan to develop the training and open it in particular on an international point of view.*
- f) *social and academic services (including for participation at different events, publishing papers etc.) and counselling made available to doctoral students.*  
*This is mostly given by the advisor.*



*Recommendations: A clear organization of the evaluation of both advisors and students during the PhD program is missing. This should be easy to organize with the steering commission.*

**The indicator 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.*

*This is not yet accessible to the students. An action plan is ongoing in this direction but not yet available.*

*Recommendations: This is an important point and it the ongoing process should be maintained and finalized rapidly to provide complementary support to students and guidance during their PhD project.*

**The indicator is partially fulfilled.**

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

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

*The discussion with the students showed that they have full access to an online platform giving all requested information regarding their academic profile, PhD rules and educational needs.*

**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;  
Available on the website*
- (b) the admission regulation;  
Available on the website*
- (c) the doctoral studies contract;  
Available on the website*
- (d) the study completion regulation including the procedure for the public presentation of the thesis;  
Available on the website*
- (e) the content of training program based on advanced academic studies;  
Available on the website*
- (f) the academic and scientific profile, thematic areas/research themes of the Doctoral advisors within the domain, as well as their institutional contact data;  
Available on the website*
- (g) the list of doctoral students within the domain with necessary information (year of registration; advisor);  
Available on the website*
- (h) information on the standards for developing the doctoral thesis;  
Available on the website*



- (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.*

*Available on the website*

**The indicator is fulfilled.**

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

**Performance Indicator C.2.2.1.** *All doctoral students have free access to one platform providing academic databases relevant to the doctoral studies domain of their thesis.*

*Yes*

**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.*

*The students are registered and have full access to iThenticate program.*

*Recommendations: continue sensibilization of the students and keep it mandatory.*

**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.*

*Yes, the students have access to all needed equipments and laboratory rooms to achieve research in good conditions.*

*Recommendations: Safety issues and regulations should be taken into consideration, especially in the field of chemistry.*

**The indicator is fulfilled.**

### **Criterion C.3. Internationalization**

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

*Important discussions were developed during the different meetings with both the academic staff and the students on this criterion.*

**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.*

*there are agreements with partner universities which should encourage students mobility.*

*However it appeared that students exchanged remained very rare. Internalization seems to be one*



of the important concern for the academic staff, which is very good, but yet not sufficiently performant at this stage.

*Recommendations: Improve partnerships, motivate students for mobility during PhD thesis, develop co-tutelles, help with local scholarships. Attract mobility from foreign students. Invite professors from abroad (to give lectures, courses, develop research collaborations)*

**The indicator is partially 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.*

*This is in the policy of the scholl, but does not seem to be suffisiant at this stage.*

*Recommendations: An effort should be made on the invitation of international experts and support on co-tutel processes.*

**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.).*

*Strong efforts are made in this direction but again not at the expected level yet.*

*Recommendations: Maintain the effort towards internationalization and developping partnerships (combining research and education for instance).*

**The indicator is partially fulfilled.**

#### IV. SWOT Analysis

<p><b><u>Strengths:</u></b></p> <p>- the strengths identified throughout the report will be resumed as part of the indicators' analysis. Other general strengths that do not fall within a particular indicator may be formulated.</p>	<p><b><u>Weaknesses:</u></b></p> <p>- the weaknesses identified throughout the report will be resumed as part of the indicators' analysis. Other general weaknesses that do not fall within a particular indicator may be formulated.</p>
<p><b><u>Opportunities:</u></b></p> <p>- possible lines of action for the development of the institution under review shall be identified;</p> <p>- examples of opportunities: a favorable economic environment in the proximity of the assessed institution, the uniqueness of the study programs and their relevance to the local/national market, the overall attractiveness of the study programs etc.</p>	<p><b><u>Threats:</u></b></p> <p>- the possible causes of the deficient aspects (the causes of the identified weaknesses), which are practically the threats to the proper functioning of the institution, shall be identified;</p> <p>- besides, there may be external threats, such as: the inopportune economic environment in the proximity of the assessed institution, the conduct of low attractiveness study programs for both candidates and the labor market etc.</p>

## V. Overview of judgments awarded and of the recommendations

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
1.	PI	<p><b>A.1.1.1.</b> 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>	<b>Fulfilled</b>	<i>The composition of the doctorate school council should follow the official governmental regulations, and include at least one PhD student representative and two external members.</i>
2.	PI	<p><b>A.1.1.2.</b> 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>	<b>Partially fulfilled</b>	<b>Include PhD students and external experts in the council.</b>
3.	PI	<p><b>A.1.2.1.</b> The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic background.</p>	<b>Fulfilled</b>	
4.	PI	<p><b>A.1.2.2.</b> The existence and use of an appropriate software program and evidence of its use to verify the percentage of similarity in all doctoral theses.</p>	<b>Fulfilled</b>	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
5.	IP	<b>A.1.3.1.</b> 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.	<b>Fulfilled</b>	
6.	PI *	<b>A.1.3.2.</b> 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%.	<b>Fulfilled</b>	<b>The ratio of funded students could be improved. Increase the ratio to 60% within the next 4 years.</b>
7.	PI *	<b>A.1.3.3.</b> 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.).	<b>Partially fulfilled</b>	<b>This should be corrected and more fundings should be dedicated to training expenses of students. This is important and must be a priority.</b>
8.	CPI	<b>A.2.1.1.</b> 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	<b>Fulfilled</b>	<i>An evaluation of safety rules (very important in the case of Chemistry domain) and safety conditions should be added here.</i>



No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		developed within the past 5 years will be presented distinctly		
9.	CPI	<b>A.3.1.1.</b> 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.	<b>Fulfilled</b>	
10.	PI *	<b>A.3.1.2.</b> At least 50% of all doctoral advisors have a full-time employment contract for an indefinite period with the IOSUD.	<b>Fulfilled</b>	
11.	PI	<b>A.3.1.3.</b> 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.	<b>Fulfilled</b>	
12.	PI *	<b>A.3.1.4.</b> 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%.	<b>Fulfilled</b>	
13.	CPI	<b>A.3.2.1.</b> 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	<b>Fulfilled</b>	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		of international publications and conferences; membership on boards of international professional associations; guests in conferences or expert groups working abroad, or membership on doctoral defense commissions at universities abroad or co-leading with universities abroad. For Arts and Sports and Physical Education Sciences, doctoral thesis advisors shall prove their international visibility within the past five years by their membership on the boards of professional associations, membership in organizing committees of arts events and international competitions, membership on juries or umpire teams in artistic events or international competitions.		
14.	PI *	<b>A.3.2.2.</b> At least 50% of the doctoral thesis advisors in a specific doctoral study domain continue to be active in their scientific field, and acquire at least 25% of the score requested by the minimal CNATDCU standards in force at the time of the evaluation, which are required and mandatory for acquiring their enabling certificate, based on their scientific results within the past five years	Fulfilled	
15.	PI *	<b>B.1.1.1.</b> The ratio between the number of graduates of masters' programs of other higher education institutions, national or foreign, who have enrolled for the doctoral admission contest within the past five years and the number of seats funded by the state budget, put out through contest within the doctoral domain is at least 0.2 or the ratio between the number of candidates within the past five years and the number of seats funded by the state budget put out through contest within the doctoral studies domain is at least 1,2.	Fulfilled	<i>The ratio appears to low for having national and international recognition. The attractivity towards national and international students should be improved.</i>
16.	PI *	<b>B.1.2.1.</b> Admission to doctoral study programs is based on selection criteria including: previous academic, research and professional performance, their interest for scientific or arts/sports research, publications in the domain and a proposal for a research subject.	Fulfilled	<i>Attract external candidates. Organize a competition with the doctorate school council including oral presentation of the research project as well as a scientific and motivation discussion.</i>

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		Interviewing the candidate is compulsory, as part of the admission procedure.		
17.	PI	<b>B.1.2.2.</b> The expelling rate, including renouncement / dropping out of doctoral students 3, respectively 4, years after admission does not exceed 30%.	<b>Fulfilled</b>	<i>Organize intermediates evaluation process with the council to check the advancement of the project and the student motivation (in particular in spoeific pandemic situations).</i>
18.	PI	<b>B.2.1.1.</b> 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.	<b>Fulfilled</b>	<i>Diversify the scientific topics to open the students to other fields (Science is becoming highly interdisciplinary) including external lecturers coming from academics or industry. Adapt the ethic lectures by comparisen to the one already proposed for the undergraduates.</i>
19.	PI	<b>B.2.1.2.</b> 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.	<b>Fulfilled</b>	<i>Adapt it to the public and should be different from the undergraduate courses on ethics</i>
20.	PI	<b>B.2.1.3.</b> 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.	<b>Fulfilled</b>	
21.	PI	<b>B.2.1.4.</b> 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.	<b>Fulfilled</b>	<i>Propose an annual evaluation committee to check the adancement of the project and working conditions.</i>
22.	CPI	<b>B.2.1.5.</b> 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.	<b>Fulfilled</b>	
23.	CPI	<b>B.3.1.1.</b> 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	<b>Fulfilled</b>	<b>This is a crucial criterion to be highly considered, giving an international recognition and allowing visibility and thus invitations in international conferences. Target recognized international journal that are indexed</b>

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		years. From this list, the members of the evaluation commission shall randomly select 5 such papers / relevant contributions per doctoral study domain for review. At least 3 selected papers must contain significant original contributions in the respective domain		<b>and with broad reader community. Publish in journal requesting fees only of necessary, favorize high level journals free of charges in a first attempt. Increase the number of articles and the quality of the journals.</b>
24.	PI *	<b>B.3.1.2.</b> 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.	<b>Fulfilled</b>	
25.	PI *	<b>B.3.2.1.</b> 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.	<b>Fulfilled</b>	<i>Improve participation with oral presentations in highly recognized international conferences. Increase funding devoted to student participations.</i>
26.	PI *	<b>B.3.2.2.</b> 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.	<b>Fulfilled</b>	
27.	PI	<b>C.1.1.1.</b> 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;	<b>Fulfilled</b>	A clear organization of the evaluation of both advisors and students during the PhD program is missing. This should be easy to organize with the steering commission.

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		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.		
28.	PI *	<b>C.1.1.2.</b> 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.	<b>Partially fulfilled</b>	This is an important point and it the ongoing process should be maintained and finalized rapidly to provide complementary support to students and guidance during their PhD project.
29.	CPI	<b>C.2.1.1.</b> 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.	<b>Fulfilled</b>	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
30.	PI	<b>C.2.2.1.</b> All doctoral students have free access to one platform providing academic databases relevant to the doctoral studies domain of their thesis.	<b>Fulfilled</b>	
31.	PI	<b>C.2.2.2.</b> 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.	<b>Fulfilled</b>	<i>Continue sensibilization of the students and keep it mandatory.</i>
32.	PI	<b>C.2.2.3.</b> 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.	<b>Fulfilled</b>	<i>Safety issues and regulations should be taken into consideration, especially in the field of chemistry.</i>
33.	PI *	<b>C.3.1.1.</b> 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.	<b>Partially fulfilled</b>	<b><i>Improve partnerships, motivate students for mobility during PhD thesis, develop co-tutelles, help with local scholarships. Attract mobility from foreign students. Invite professors from abroad (to give lectures, courses, develop research collaborations). Help the PhD graduates in finding post-doctoral positions abroad.</i></b>
34.	PI	<b>C.3.1.2.</b> 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.	<b>Partially fulfilled</b>	<b><i>An effort should be made on the invitation of international experts and support on co-tutel processes.</i></b>
35.	PI	<b>C.3.1.3.</b> 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.).	<b>Partially fulfilled</b>	<b><i>Maintain the effort towards internationalization and developing partnerships (combining research and education for instance).</i></b>





*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).*

The overall feeling after the evaluation is good. Interactions with both the students and staff were very constructive. The relationships between the students and the staff are very good with an excellent scientific support from the PhD advisors. The selection process is clear and based on the merit of the students. The students level and motivations are very high. Students have all support they need in terms of infrastructure, online platforms and guidance. The overall management is good.

There are few points that need to be taken in consideration in order to improve the quality and the visibility of the research, education and students :

- The School should be more attractive towards external students, including international ones
- There should be more lecturers from outside (Academics and Industries)
- Interaction with industry could be improved
- Internationalization is a key aspect towards high level recognition and should be improved
- Improve publication impacts (choice of the journal..)
- Be more active regarding international events (Conferences, workshops..)
- Diversify the courses dedicated to doctoral studies
- Follow regulations regarding the School council memberships.

On a general point of view, the students should get a higher ratio of scholarships and more help regarding participation to international events. They are the ambassadors of the research institute and must show themselves outside. Very few are having post-doctoral positions after the PhD, which is not satisfying for them and for their home institution.

## **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.*