

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

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



Faculty of Mechanics takes the role of shaping specialists in the field of mechanical engineering, automotive engineering, civil engineering, for local, national, and multinational companies for more than 40 years. Our graduates, no matter their specialization, have one of the highest degrees of employment, being targeted by profile companies that are growing in the Oltenia region.

In 1977, based on Enactment of State Council no. 207, it was founded the Faculty of Mechanics from Craiova with the following specializations: Machines Building Technology, Machine Tools, Civil Engineering, and Equipment for Civil Engineering. Continuing the tradition of higher education in the technical field from Craiova, (Faculty of Agriculture Mechanization from Craiova, Enactment 175 / 1948) in 1990 were founded the specializations: Road Vehicles, Machines and Installation for Agriculture. Also from 1992 were promoted new specialization such us: Economical Engineering in Mechanical Field, Science of Materials, Applied Mechanics. As a reaction to the actual trends in 2005 was founded the specialization Transport Engineering and Traffic. The structure of modules and curricula ensures the

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



preparation of young high school graduates to be engineers, under the programs of bachelor, along 4 years. For the bachelor graduates, we offer masterate courses along 2 years. The Faculty of Mechanics has initiated from 2005 the doctorate studies inside the "Academician Radu Voinea" Doctoral School. The doctorate in the engineering field it is a scientific doctorate with two approaches: permanent attendance (with financing from the central budget or with fees), and occasional attendance (with fees).

We start our mission of evaluation 2.7.2021 from 18:00 – 19:00 Romanian time with a Meeting of panel members for discussing main methodological aspects related to the evaluation of studies. We are talking about evaluation and meet with other members of the same domain of interest.

05.07.2021 continue from 9:00 to 09:45 with an online preliminary meeting for the preparation and harmonization of evaluation steps, in hybrid mode, of doctoral study domains and IOSUD. Together with *all evaluation panel members, representatives of the University's management, representatives of the CSUD and of the Doctoral School /Schools, the contact person for IOSUD / doctoral domains*

05.07.2021 continue from 10:00 to 11:00 with Online meeting with the director of CSUD / directors of doctoral schools and the team who drafted the internal evaluation report together with members of IOSUD evaluation panel, representatives of CSUD and of doctoral school(s)/IOSUD

05.07.2021 continue from 11:00 to 12:00 with Online meeting with IOSUD expert for Engineering sciences- the fundamental domain of science

05.07.2021 continue from 12:15 to 13:15 with Online meeting with IOSUD academic staff, Online meeting with the Directors/ persons in charge of the research centers/laboratories within the doctoral study domain, IOSUD expert for Engineering sciences- the fundamental domain of science

05.07.2021 continue from 13:30 to 14:30 with Online meeting with the Directors/ persons in charge of the research centers/laboratories within IOSUD , IOSUD expert for Engineering sciences- fundamental domain of science,

05.07.2021 continue from 14:30 to 18:00 Continuation of the doctoral study domain and IOSUD evaluation activities, Independent evaluation activities

06.07.2021 continue from 9:00 to 11:00 with Online meeting with the members of the Ethics Commission and the Commission for Quality Evaluation and Assurance (CEAC) members / Quality Assurance Department, all evaluation panel members, Ethics Commission members, representatives of Commission for Quality Evaluation and Assurance (CEAC) / Quality Assurance Department

06.07.2021 continue from 11:15 to 12:15 with Online meeting with PhD students, *IOSUD expert for Engineering sciences- the fundamental domain of science.*

06.07.2021 continue from 12:30 to 13:30 with Online meeting with IOSUD graduates, members of IOSUD evaluation panel, PhD students, representatives of doctoral graduates

06.07.2021 continue from 13:45 to 14:45 with Online meeting with Doctoral University Studies Council (CSUD) members, Online meeting with employers of Doctoral graduates in the domain, employers' representatives, IOSUD expert for Engineering sciences- the fundamental domain of science

06.07.2021 continue from 15:00 to 16:00 with Online technical meeting to identify specific issues that need to be clarified, if necessary, during the on-site visit, all evaluation panel members

07.07.2021 continue Face-to-face working meetings, visiting the educational and research infrastructure, the Evaluation Director and the coordinator of the IOSUD evaluation panel, one student

08.07.2021 continue from 09:45 to 10:45 with Online meeting with employers of doctoral graduates, members of IOSUD evaluation panel, employers' representatives, IOSUD expert for Engineering sciences- the fundamental domain of science



08.07.2021 continue from 11:00 to 13:00 with Completion of the evaluation documents, Independent evaluation activities

09.07.2021 continue from 9:30 to 10:45 with *Online meeting for conclusions, all evaluation panel members*

09.07.2021 continue from 11:00 to 12:00 with Meeting with representatives of the institution under review to discuss the conclusions of the evaluation process and the main recommendations , all evaluation panel members, university's representatives

## II. Methods used

The logical framework, or log frame, is the most common and best-known planning tool used in international development. It is also the most hotly debated. Originally designed for use in simple time-bound projects, it is now the tool of choice for donors in interventions ranging from small projects to organizational core funding. The logical framework is often used as a basis for monitoring and evaluation.

A logical framework can have many different purposes depending on the context, and it is probably this that has made it so popular. It was originally conceived as a planning tool, aimed at supporting the management of planned processes. However, depending on the circumstances, a log frame can be:

- a planning tools.
- a tool for program management.
- the basis for M&E in a project or program.
- an accountability mechanism.
- a succinct summary of a piece of work.
- a 'window' into the work of an organization or complex program.
- a linear theory of change; or
- a mechanism for seeking fundin

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

Narrative summary	Objectively Verifiable Indicators	Means of Verification	Assumptions
<i>Goal:</i>			
<i>Objectives:</i>			
<i>Outputs:</i>			
<i>Activities:</i>			
<i>Inputs:</i>			

Starting with the narrative summary column, the goal defines the longer-term impact that a project or program aims to contribute to. The goal may be designed to be achieved after completion of the project or program and may depend on the actions of many different agencies, as well as changes in the external



environment. The next row down deals with the objectives or purpose of the project or program – the changes it hopes to directly influence over its lifetime. The outputs row includes the tangible products or services the project or program aims to produce. The last two rows deal with the activities of the project or program and the resources required (inputs).

The second column – objectively verifiable indicators – defines what information will be collected to indicate whether or how far the goal, objectives and outputs have been achieved. The third column – means of verification – indicates the sources that will be used to collect the indicators, such as interviews, observation, or secondary sources. The final column identifies the key risks and assumptions that might influence the success or otherwise of the project or program.



### 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.*

*IOSUD -the University of Craiova applies effective mechanisms provided by the relevant law on the organization of doctoral programs, which is reflected in the regulations in force for the third cycle of university studies -doctoral studies:*

- *At the level of the Doctoral School of Industrial Engineering, there is the regulation of organization and functioning of the Doctoral University Study Programs;*
- *The methodology for appointing the members of the Board of the Doctoral School of Industrial Engineering and the Director of SD IEE is established*
- *The regulation on the organization and conduct of the competition for admission to Bachelor's, Master's and doctoral programs in the academic year 2021 -2022, was approved in the Senate Meeting of April 27, 2021.*
- *The stages and methodology for completing doctoral studies are an integral part of the Institutional Regulation of the organization and functioning of IOSUD doctoral study programs, in Chapter VI, Papers 34-43*

- *At the level of SD IEE, there is a functional management structure: Council of the Doctoral School of Industrial Engineering -CSD IEE (Anexa A.1.1.1.(f1)\_Consiliul SD IEE), elected according to ROFSUD SD-IEE (AnexaA.1.1.1.(b)\_ROFSUD\_SD\_IEE-Chapter II, Art. 3)*
- *Doctoral study contracts were drafted at the IOSUD UCV level. Each doctoral student enters a contract-based relationship with the University of Craiova, at the beginning of doctoral studies.*
- *The doctoral study programs are structured and are carried out following the provisions of the National Education Law*
- *The advanced university training programs (PPUA) are carried out for a maximum period of 3 months, according to art. 57, (7), serving him “for the development in good conditions of the scientific research program and the acquisition of advanced competencies specific to the cycle of doctoral studies”;*
- *Each doctoral scientific research program is carried out on the doctoral thesis topic specified in the study contract, the content of the contract being assumed and endorsed by the signatory parties: the doctoral student*
- *Curricula specifying the content of doctoral study programs and the obligations of doctoral students, the evaluation timeline, and the activities evaluated:*

*Recommendations:*

- *Inside a regulation must be a space open for giving a certificate for every practical stage of doctoral study for PhD students who didn't finish the study for their competition on the labor market.*

**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.*

The doctoral studies programs within the Doctoral School „Acad. Radu Voinea ”of the Faculty of Mechanics are organized and operate based on an institutional Regulation. It has been developed and adopted on the basis of:

- *National education law no.1/2011,*
- *The code of doctoral studies, approved by H.G. 681/2011, with subsequent amendments and completions,*
- *MENCS Order No. 3482 of 24.03.2016 on the approval of the Regulation on the organization and functioning of CNATDCU, Annex 1 -Methodology for evaluating doctoral thesis*
- *The institutional regulation for the organization and functioning of the doctoral university study programs of the Organizing Institution for Doctoral University Studies -University of Craiova (IOSUD-UCV).*

*Recommendations:*

**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 backgrounds.*

- *The University of Craiova has an information system that manages students' activities, study programs, facilitates the collection, processing and analysis of data and information relevant for institutional quality assessment and assurance.*
- *University website (<http://ie.ucv.ro/>) together with the pages of the faculties and departments provides information on study programs, teaching staff, student facilities, regulations, procedures and other useful documents, announcements of current events and any information relevant to students or prospective students.*
- *University web site is with all information for doctoral and postdoctoral students. The IOSUD presentation guide is an excellent presentation of doctoral school on Romanian.*
- *. [https://www.ucv.ro/pdf/invatamant/educatie/programe\\_doctorat/organizare/brosura\\_ro.pdf](https://www.ucv.ro/pdf/invatamant/educatie/programe_doctorat/organizare/brosura_ro.pdf)*

*Recommendations:*

- *Translated IOSUD presentation of the doctoral school. of Industrial Engineering [https://www.ucv.ro/pdf/invatamant/educatie/programe\\_doctorat/organizare/brosura\\_ro.pdf](https://www.ucv.ro/pdf/invatamant/educatie/programe_doctorat/organizare/brosura_ro.pdf)*
- *Doctoral school of Industrial Engineering isn't presented on web site:*

**The indicator is partially 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.*

- *IOSUD UNIVERSITY OF CRAIOVA uses a dedicated software to verify the similarity index of all doctoral theses, namely [www.sistemantiplagiat.ro](http://www.sistemantiplagiat.ro). The University of Craiova ensures the verification of the authenticity and originality of doctoral theses and other scientific papers with the help of the program [www.sistemantiplagiat.ro](http://www.sistemantiplagiat.ro) recognized by the National Council for Attestation of University Degrees, Diplomas, etc..*

*Recommendations:*

- *If it is possible to include always one expert from a foreign country like an advisor and translates PhD thesis on English. In this way, The University of Craiova has more quality and recognizable research.*

**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.

*Recommendations:*

- University must open grants or use more EU grants for foreign PhD and postdoctoral students to have the possibility to be excellent in education and to increase the internationality of the study of INDUSTRIAL ENGINEERING.

**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%.

- „Acad. Radu Voinea” Doctoral School participates, through the affiliated doctoral supervisors, in the implementation of research or institutional development / human resources grants in the field of Mechanical Engineering.

Table A.1.3.1.1. Research and institutional grants, implemented or ongoing (Annex SD III.7)

	Research grants				Institutional development grants / human resources				Fulfilment of criteria
	International		National		International		National		
	Ongoing	Completed	Ongoing	Completed	Ongoing	Completed	Ongoing	Completed	
Total Doctoral School	1	3	3	6	2	4	0	4	YES
Industrial Engineering	1	2	1	1	2	3	0	0	YES
Mechanical Engineering	0	1	2	5	0	1	0	4	YES

*Recommendations:*

- In the future is need more private sources for doctoral but more on postdoctoral study.

**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

<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.



(attending conferences, summer schools, training, programs abroad, publication of specialty papers or other specific forms of dissemination etc.).

- *Doctoral students have big support from doctoral grants for the conference, summer schools, training, publication in ISI papers, etc. This money is more 13.05% from grant to support doctoral activities.*

Table A.1.3.3.1. Synthesis on the financial support of the dissemination activities implemented by the doctoral students

Total registered doctoral students	SD revenue [lei]	Training expenses [lei]	Share [%]	Fulfilment of criteria
5	24000 lei	3131,25 lei	13,05 $3131,25:24000 \times 100 = 13,05$	YES

*Recommendations:*

**The indicator is fulfilled.**

## Criterion A.2. Research infrastructure

*\*general description of the criterion analysis.*

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

*\*general description of the standard analysis.*

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

- *The Doctoral School „Acad. Radu Voinea” has a research infrastructure in the field of Industrial Engineering based on the existing facilities within the departments of the Faculty of Mechanics both in Craiova and in Drobeta-Turnu Severin. Their highlighting is done on the faculty's website in the appendix attached to the report. Also, being a component part of the University of Craiova, the Faculty of Mechanics has unrestricted access for both doctoral students and doctoral supervisors to the laboratories of the INCESA research center.*
- *Additional information can be found in Annex A.2.1.1-II. Moreover, as a result of participating in national and international research grants, the members of the „Acad. Radu Voinea ”Doctoral School set up under the auspices of the University of Craiova public research platforms available within the governmental project ERRIS.*
- *In 2015, the equipment from the endowment of the Mechanical Engineering Research Centre was purchased, provided with 5 research laboratories within the INCESA Applied Sciences Research Platform, laboratories coordinated by members of the Doctoral School. Thus, the total amount of state-of-the-art equipment purchased in the laboratories is over 900,000 Euros*



- Libraries and reading rooms are described in Anexa A.2.1.1.(b) Biblioteci, teaching and research bibliography are described in Anexa A.2.1.1.(c) Bibliografi didactică și de cercetare. The Book fund are described in Anexa A.2.1.1.(d) Fond de carte propriu, Virtual Libraries - Anexa A.2.1.1.(e) Biblioteci virtuale, Subscriptions to publications and periodicals are listed in Anexa A.2.1.1.(f) Abonamente la publicații periodice.
- Most of the equipment has been purchased and developed in the last 5 years, within the Research Hub of Applied Sciences INCESA (Anexa A.2.1.1.(g))
- IOSUD University of Craiova has concluded collaboration agreements with higher education institutions, research institutes, with research networks for the exploitation in partnership with various research infrastructures.
- The offer of research services is presented publicly through the ERRIS platform: <https://eeris.eu/ERIF-2000-000H-0270>. Collaboration agreements concluded with higher education institutions, research institutes, research networks for the partnership operation of the various research infrastructures are included in Anexa 27 IOSUD Parteneriate Infrastructura de cercetare.
- Also, the RESEARCH INFRASTRUCTURE IN APPLIED SCIENCES (INCESA) of the University of Craiova concluded a series of partnerships through the ERRIS platform (Anexa 28 IOSUD Conventii de cooperare UCV INCESA [https://www.ucv.ro/pdf/cercetare/organizare/dr-msec/Conventii\\_de\\_cooperare\\_UCV\\_2004-2020.pdf](https://www.ucv.ro/pdf/cercetare/organizare/dr-msec/Conventii_de_cooperare_UCV_2004-2020.pdf)). At the University of Craiova, partnership agreements through the ERASMUS + program, which also include partnerships for doctoral activity are implemented (Anexa A.2.1.2.(a) Acorduri Erasmus+ si non-Erasmus).
- At the level of IOSUD UCV, evidence is presented regarding the possession or renting of spaces for research activities specific to doctoral programs (laboratories, experimental fields, research units, etc.). The summary of the spaces in use of all the faculties of the University of Craiova and implicitly of the students in the third cycle -doctoral studies is presented in Anexa

Recommendations:

**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 is sufficient qualified staff to ensure the conduct of a 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.*



- *Within the Doctoral School, there are affiliated 12 doctoral supervisors, having the quality of teaching and research staff, holders of IOSUD. They cover two of the existing doctoral fields in the Doctoral School, as follows:*
  - *9 PhD supervisors in the field of Mechanical Engineering*
  - *3 PhD supervisors in the field of Industrial Engineering.*
- *Starting with 2017, 3 new doctoral supervisors joined the Doctoral School, having Certificates of Qualification in the field of Industrial Engineering, so that, by participating in this evaluation, IOSUD, University of Craiova, Doctoral School „Acad. Radu Voinea” legally and firmly declares its intention to reactivate the field of Industrial Engineering.*
- *All 3 members of the Industrial Engineering field meet the minimum CNATDCU criteria corresponding to Commission 16-CNATDCU (Table A.3.1.1.1), for the entire activity. As a result, the criterion is met, meeting a percentage of 100% > 50%.*

*Recommendations:*

**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.*

- *Of the 3 doctoral supervisors in the field, 3 are full-time teachers, which represents 100%*

*Recommendations:*

**The indicator is fulfilled.**

**Performance Indicator A.3.1.3.** *The study subjects in the education program based on advanced higher education studies about 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.*

- *The subjects in the training program based on advanced university studies related to the field of Industrial Engineering within SD IEE are supported by teachers who have the quality of doctoral supervisor / habilitated, all teaching staff being Professors -members of SD IEE, with proven expertise in the field of taught subjects.*
- *In the University of Craiova, the occupation of teaching positions is done based on a methodology, approved by the University Senate, in which the conditions for putting up for competition teaching and research positions are provided, for an indefinite or determined period.*

*Recommendations:*

**The indicator is fulfilled.**



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

- *The 3 doctoral supervisors who ensure the functioning of the field of Industrial Engineering within the Doctoral School have been affiliated with it in the last 4 years, the reason for which they have taken over a small number of places for doctoral students: 5 doctoral students. Therefore, the evaluation criterion is met (meeting a percentage of 100% <20%), with none of the PhD supervisors having more than 8 PhD students.*

*Recommendations:*

***The indicator is fulfilled.***

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

- *Each of the 3 PhD supervisors in the field of Industrial Engineering within SD IEE has at least 5 Web of Science indexed publications, which include international contributions that reveal progress in scientific research.*
- *The international visibility of doctoral supervisors in the last five years is highlighted in the Minimum Standards Sheets by membership in the scientific committees of international publications and conferences, membership in the boards of international professional associations, guest quality at conferences or groups of experts conducted abroad*

*Recommendations:*

***The indicator is fulfilled.***

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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.



**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.*

- *In the case of PhD supervisors in the field of INDUSTRIAL ENGINEERING within SD IEE, all 3 PhD supervisors continue to be scientifically active (100%).*

*Recommendations:*

**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.*

- *Considering the withdrawal from the activity of the doctoral supervisors, in the period subject to evaluation the field of Industrial Engineering did not work and therefore no budgeted places were allocated for the eventual master's degree candidates from other university centers. Having become active again for 3 years in the field of Industrial Engineering, the 3 doctoral supervisors.*

*Recommendations:*

**The indicator is not 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 in science 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.*



- *With strict reference to the training of students in the third cycle, that of doctoral studies, the Doctoral School "Acad. Radu Voinea" respects all the principles previously stated together with the principle of value.*
- *The doctoral admission colloquia are based on professional selection criteria, starting from the previous professional performance of the candidates (bachelor's average -for candidates who graduated before the Bologna Process, respectively Master's average -for candidates who have graduated after the Bologna Process). The colloquium consists of a presentation of the research topic by the doctoral student, how he, under the coordination of the doctoral supervisor, intends to carry out the plan to achieve the objectives proposed in the thesis, then follows an interview during to which, through questions and answers on the research topic and the professional knowledge of the candidate, the commission can evaluate as accurately as possible the candidate's level of training. previous scientific research of the candidate; depending on the final average of the years of undergraduate studies.*

*Recommendations:*

**The indicator is fulfilled.**

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

- *The University of Craiova maintains a close relationship with all enrolled students by getting involved in solving social cases, the people in question can benefit from low cost or free accommodation, reduction/elimination of tuition fees, help in the form of a social scholarship, offering thus if needed, students from disadvantaged. Through this, the Doctoral School "Acad. Radu Voinea" comes to the aid of doctoral students from disadvantaged social backgrounds, supporting their access to doctoral studies and preventing university dropouts. Dropout is 0%.*

*Recommendations:*

- *We must increase the number of students on Industrial Engineering*
- 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.*

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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.

- A training program based on advanced academic studies comprises three core courses, one of which refers to the Methodology of scientific research within SD -IEE (Art. 23, paragraph (4) of the ROFSUD SD-IEE REGULATION

Recommendations:

**The indicator is fulfilled.**

**Performance Indicator B.2.1.2.** At least one discipline is dedicated to Ethics and Intellectual Property in scientific research or there are well-defined topics on these subjects within a discipline taught in the doctoral program.

- In the curriculum of the first year of training of doctoral students, there is the discipline Ethics and academic integrity, dedicated to ethics in scientific research and intellectual property supported by a doctoral supervisor from the doctoral field of Law (Doctoral School of the Faculty of Law), from within IOSUD, Prof. Dr. Gabriel OLTEANU.
- Rules of academic ethics regarding documentation (sources of documentation and their correct use, reading sheets, etc.)•Ethical rules regarding the use of documentation results in doctoral research (regime of ideas in scientific works, exclusion of protection by Law No. 8/1996, protection by Law No. 206/2004, right of citation and its correct use, self-citation, plagiarism in the case of scientific works, the main offenses and the incrimination of plagiarism, etc.)

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Recommendations:

**The indicator is fulfilled.**

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

- At the level of Doctoral School „Acad. Radu Voinea”, mechanisms are developed to ensure that the training program based on advanced university studies, related to the evaluated fields, aims at "learning outcomes", specifying the knowledge, skills and abilities that Doctoral students should acquire after going through each subject

Recommendations:

**The indicator is fulfilled.**

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

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<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.

- All doctoral students benefit during the entire doctoral training period from the counseling/guidance of Advisory committees composed of the doctoral supervisor and three specialists in the field/fields in which the doctoral student carries out his / her activity(Anexa
- Based on this questionnaire, the insertion of graduates on the labor market is monitored, as well as the evolution of their level of satisfaction. The questionnaires are processed by the Career Counseling and Guidance Center.
- Quality management proposes a model to approach the total quality of services and processes, focused on the procedural and systemic approach, on the total involvement of each employee, and aims at long-term success, by meeting the requirements of internal and external customers and creating benefits for the university and society.
- In the current pandemic context, PhD supervisors also use the Google Classroom platform to communicate with PhD students, to guide them in their research activities.

Recommendations:

**The indicator is fulfilled.**

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

- Within the field of Industrial Engineering, 5 doctoral students are carrying out their doctoral studies. The ratio is  $5/3 = 1.67 < 3$ , so the criterion is met.

Recommendations:

**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.

- The "University of Craiova has a system for the periodic evaluation of teaching, research and management activities that is constantly used, improved from year to year and which has become a basic component in the culture of quality.;



- There are competent human resources, organized pyramidally, for each study program; University research has international and national recognition, transparency in the university's ranking among top research universities, based on a large number of research contracts, ISI listed publications, investment in infrastructure and involvement of young researchers, PhD students, postdocs extended;
- The members of the evaluation commission select for analysis, at random, 5 such relevant articles/contributions per field of doctoral studies. At least 3 of the selected articles present significant original contributions in the field concerned.

Recommendations:

**The indicator is fulfilled.**

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

- PhD students actively participate under the guidance of PhD supervisors in disseminating research results by developing articles and publishing in ISI-listed journals or indexed in recognized international databases.

Table B.3.1.2.1. Synthesis on the ratio between the number of papers presented at prestigious international conferences and the number of PhD students in role

Number of PhD students in role	Number of scientific products	Share	Fulfillment of criterion
5	Articles published in WOS journals: 3	0,6	YES
	Papers presented in conferences with WOS proceedings: 4	0,8	
	Articles published in BDI journals: 6	1,2	
	Papers presented in conferences with BDI proceedings: 8	1,6	
	Total	4,2	

Recommendations:

**The indicator is fulfilled.**

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

\*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.

- According to Art. 37 of the Regulations for the functioning of the Doctoral School, the Doctoral Commission is proposed by the doctoral supervisor and approved by the Doctoral School Council. This commission includes at least 3 official references from the country or from abroad, specialists



*in the field in which the doctoral thesis was elaborated and of which at least two carry out their activity outside IOSUD-UCV.*

- *The Doctoral School Council will take into account that the proposals made by the doctoral supervisors regarding the composition of these commissions to ensure the participation of as many specialists from outside IOSUD as possible, their distribution in commissions being made in such a way that a specialist is invited as a member in no more than 2 committees.*

*Recommendations:*

**The indicator is fulfilled.**

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

- *It is not the case, but due to consistency and parallelism with the ideas stated in the previous point, and not being able to perform an analysis for the period evaluated due to inactivity in the field of Industrial Engineering, the revision of the Regulation will be requested. a certain scientific referent from another higher education institution than the one in which the doctoral thesis is organized and the number of doctoral theses defended in the same doctoral field within the Doctoral School must not be higher than 0.3.*

*Recommendations:*

**The indicator is fulfilled.**

## **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 participation at different events, publishing papers etc.)  
and counseling made available to doctoral students.

- The scientific activity of doctoral supervisors was carried out during an academic year. This is the number of publications in relevant journals and the degree of fulfillment of the minimum standards for the award of the habilitation certificate, in force in the academic year subject to evaluation, the number of doctoral students who have completed their studies within three years from the date of enrollment out of the total number of doctoral students and who have publicly defended the thesis.
- Infrastructure and facilities necessary for carrying out the research activity is analyzed how the funds of the doctoral school were used to improve the infrastructure and facilities necessary to carry out the research activity in the academic year subject to evaluation like the number of doctoral students financially supported to publish/participate in conferences; organizing symposia, summer schools, etc.
- Subsequent procedures and rules based on which doctoral studies are organized like analysis of the degree of fulfillment of the obligations mentioned in the curriculum by the doctoral students coordinated by each doctoral supervisor.
- In the area of concerns for improving the educational process for the third cycle of studies - doctoral studies and for finding the best policies in this regard, is the first National Conference of Organizing Institutions for Doctoral Studies organized by the Council for Studies Doctoral University of IOSUD-University of Craiova, on September 21 -22, 2017, which enjoyed wide participation from universities: <https://www.ucv.ro/media/det.php?id=1555>

*Recommendations:*

Changing on web site new data from 2019 and 2020 year. The website of the University of Craiova must have a lot of changes. All documents must be in Romanian and in English. A website is differently organized on different pages.

<http://cis01.central.ucv.ro/cercetare/publicatii.php>

**The indicator is partially 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.

- In the University of Craiova, there is a Quality Council (CC) led by the rector, coordinated by the vice-rector with quality problems, which has in its structure the Commission for evaluation and quality assurance (CEAC) and the Quality Department (CoC). The Commission for quality

evaluation and assurance and the Quality Department are structured with composition and attributions in the field of quality, approved by the Senate.

- Recognition of the professional-scientific value of the members of the academic community
- Participation in management commissions and boards and quality assurance of education and a scientific research at the national level;
- A quality of expert for the evaluation of scientific research projects and programs and educational, at national and international level;
- A quality of reviewer or member in the editorial committees of some representative magazines from the main international scientific flow.
- The quality of the study was distributed like a questionnaire. 100% of PhD student was told that is an excellent study.

Recommendations:

**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.*

- *The organization and functioning of the Doctoral School "Acad. Radu Voinea" within IOSUD -the University of Craiova are defined by its Rules of Procedure. It agrees the academic structure created at IOSUD -UCV level with the provisions of the Education Law no. 84/1995, the regulations of the Romanian Government Decision no. 567/2005 and of the Order of the Minister of Education and Research no. 4491 of July 6, 2005, as well as of the Regulation on the organization and development of doctoral studies at the University of Craiova*



- *The main aspects related to the access to the third cycle of university studies are included in documents made public on the official website of the University of Craiova and on that of the Faculty of Mechanics:are:*
  - *General information about doctoral admission;*
  - *Documents useful for access (registration form, application form);*
  - *Approved model for study contracts (budget and fee);*
  - *Specific aspects regarding the access to a doctorate of Romanians residing in other countries.*
- *Also, the Regulations of the Doctoral School „Acad. Radu Voinea ”has concrete specifications regarding admission to doctoral studies (Art. 17-19)*
- *Regulations of the Doctoral School „Acad. Radu Voinea” has concrete specifications regarding the completion of doctoral studies (Art. 34-39)*
- *Each field of doctoral studies has developed and approved:*
  - *Educational plan*
  - *Discipline sheets*
- *The web page of the Doctoral School „Acad. Radu Voinea” has a section dedicated to short presentations of doctoral supervisors, which show their areas of interest and the main research topics they address.*
- *The operating regulations of the Doctoral School „Acad. Radu Voinea”(Art. 11-12, Art. 30, Art. 31, Art. 34-39) contains concrete specifications relative to the elaboration standards of the doctoral thesis, specifications in full accordance with O.M. 5110 / 17.09.2018 regarding the approval of the minimum national standards for granting the title of doctor*
- *The Doctoral School Secretariat has specific tasks and responsibilities regarding the stages that must be completed before defending the doctoral thesis, including the obligation to make public, through the Doctoral School's website and posters, the information related to the presentation of the doctoral theses. doctorate. The obligation, tasks and responsibilities reside from Art. 39 of the Regulation of operation of the Doctoral School.*
- *Recommendations:*
- *More PhD and postdoctoral PhD study of INDUSTRIAL ENGINEERING translated to the English language.*

**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.*

- *The library of the University of Craiova is a scientific cultural structure, of public law, without legal personality, functioning as a unit related to the University.*
- *Established in 1948 as the Library of the "Tudor Vladimirescu" Agronomic Institute, this is a university library with an encyclopedic profile with a collection of publications of*



approximately and million volumes, which supports the training process, education and research that primarily serves students, master students, PhD, University teachers and researchers.

- *The University of Craiova Library. off, access doctoral students to more phases of full-text multidisciplinary scientific data, specialized full-text, bibliographic and bibliometrics (the University of Craiova being a member of the ANELIS PLUS Association): Science Direct Freedom Collection, Springerlink Journals, Cambridge Journals, Ebsco Business Source Complete, American Institute of Physics - Journals (AIP), IEEE/IET Electronic Library (IEL), MathSciNet, Clarivate Analytics - Web of Science Core Collection, InCites Journal Citation Reports, Derwent Innovations Index, Sco pus, both from the university campus based on the recognition of institutional IPs, as well as from outside it (access mobile for PhD students, teachers and researchers).*

*Recommendations:*

**The indicator is fulfilled.**

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

- *Each doctoral student in INDUSTRIAL ENGINEERING within SD IEE has access, upon request and with the consent of the doctoral supervisor, to an electronic system for verifying the degree of similarity with other existing scientific creations, the University of Craiova and IOSUD -UCV having an electronic system for verifying the degree of similarity: with sistemantiplagiat.ro*

*Recommendations:*

**The indicator is fulfilled.**

**Performance Indicator C.2.2.3.** *All doctoral students have access to scientific research laboratories or other facilities depending on the specific domain/domains within the Doctoral School, according to internal order procedures.*

- *All doctoral students have access to scientific research laboratories or other facilities specific to the field of INDUSTRIAL ENGINEERING, according to internal rules.*
- *Some doctoral students have access to research laboratories or testing laboratories within companies with which some doctoral supervisors have concluded research contracts*
- *Doctoral students have access, based on ID, to libraries, reading rooms, laboratories, rooms equipped with computers of the faculty, according to the provisions of study contracts and legislation in force on the schooling of all students enrolled in IOSUD -University of Craiova.*
- *The INCESA research centre and the new laboratory complex are buildings built in the last 8 years, with modern laboratories, equipped with equipment from the 2010-2015 generation. The access of doctoral students to these facilities is unrestricted, but according to a well-established program with the doctoral supervisor and by addressing a written request of the doctoral student to the doctoral supervisor. In these laboratories, PhD students are assisted by an engineer or technician, who facilitates the operation of various equipment.*



*Recommendations:*

- *Build virtual joint access laboratory for better online activities of PhD students. This means virtualize real laboratories and give access to students to training in virtual space, before starting real laboratory work.*

***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.*

- *The conference “International Conference on Advanced Research in Engineering”, CARE 2020, was organized by the Doctoral School “Acad. Radu Voinea”, especially regarding the researches of doctoral students from our doctoral school, but also from other doctoral schools in the country, on October 30, 2020, online, on the CISCO-WEBEX-INCESA platform of the University of Craiova.*
- *Following the conference, a volume was published in the University publishing house with a number of 280 pages, containing the 36 papers presented in the 4 technical sections: Robotics, Biomechanics, Industrial Engineering, Automobiles.*
- *The CARE 2020 conference was organized with the financial support of 5100 lei obtained from the Ministry of Education, from the FSS type funds. Annex C.3.1 -II presents the titles of the articles presented by the doctoral students of our doctoral school together with the doctoral supervisors and supervisors, as well as with other colleagues, at CARE 2020.*
- *One of the 5 existing PhD students currently participated in 3 online courses given by lecturers from Portugal, Austria and Croatia, and all 5 PhD students participated with papers at international conferences.*

*Recommendations:*

- *The institution must increase the number of PhD students in Erasmus projects incoming and outgoing abroad. Internationalization is a key to educational success in the future.*

***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.

- Doctoral School "Acad. Radu Voinea" was concerned with the development of collaborations with the management of doctoral theses in co-tutoring. Such an agreement was concluded with the Technical Academy of the Republic of Moldova, the collaboration being ongoing. We continue our efforts to increase the number of co-tutoring agreements.

Table C.3.1.2.1 Professors invited to give lectures at the Doctoral School "Acad. Radu Voinea "

Invited professor, name	Affiliation	Scientific Event	Year
Iulian Iordăchiță	Johns Hopkins University, USA	Enabling Technology for Safe Robot-assisted Retinal Surgery	2020
Corina Tarniță	Princeton University, SUA	Self-Organization and Robustness in Biological Systems; Insights for Bioinspired Design	2020
Ines Peres	Technical University of Lisbon, Portugal	Numerical simulation of an over-moulded plastic injection part	2020
Cornel Stan	West Saxon University of Zwickau, Germany	Auto-Mobility for the Future - Functional and Technical Development	2019,2020
Dan Marghitu	Auburn University, USA	The Dynamics of Equine Locomotion	2019,2020

Recommendations:

**The indicator is fulfilled.**

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

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- In order to internationalize the activities of the Doctoral School "Acad. Radu Voinea" a beginning is the beneficial collaboration of doctoral student-doctoral supervisor-international expert in the elaboration of WOS indexed articles, following to move to the next step, that of inviting experts as specialist members in the commissions for defending doctoral theses, or even of the steering committees.
- For example, several 5 articles containing doctoral students from our doctoral school (2 of which in the field of Industrial Engineering), doctoral supervisors and foreign experts were published in Acta Technica Napocensis -Special Issue II, Vol. 64, from Feb 2021 (WOS indexed journal)

Recommendations:

- Internationalization is a key for a future for an excellent University. This level of Erasmus, Ceepus and other mobilities must be doubled in the future.

**The indicator is fulfilled.**





#### IV. SWOT Analysis

<p><b>Strengths:</b></p> <p>The university remains a regional leader in the field of higher education, through the study programs of INDUSTRIAL ENGINEERING it offers and the importance of research contracts;</p> <p>The university offers to study a program in an area of INDUSTRIAL ENGINEERING for a doctorate for full-time, part-time and distance learning;</p> <p>There is an adequate material basis for education and research activities, in continuous improvement and modernization;</p> <p>There are competent human resources, organized pyramidally, for each study program;</p> <p>University research has international and national recognition, transparency in the university's ranking among top research universities, based on a large number of research contracts, ISI-listed publications, investment in infrastructure and involvement of young researchers, PhD students, postdocs extended;</p> <p>The University has adopted and implemented a strategy and operational plan for research and innovation compatible with the latest trends at the European and national level;</p> <p>Research centers have been reorganized; The regulatory framework for doctoral and post-doctoral programs was adopted - as institutional and methodological premises for the emergence of research poles;</p> <p>The intensification of the European mobility programs Erasmus, Erasmus +, Erasmus Mundus has continued;</p> <p>The general principles of quality assurance take into account transparency, compatibility and convertibility. In the strategic plan of the University quality is essential and constantly improving;</p> <p>The material base is characterized by the existence of modern equipment for education and research, provides optimal conditions for</p>	<p><b>Weaknesses:</b></p> <p>The low share of research funding from private funds;</p> <p>The low level of attractiveness of the teaching and/or research career;</p> <p>Some areas do not have continuity in doctoral training.</p> <p>Low efficiency of technology transfer in case of research results (with poor funding), in the current economic environment; Insufficient visibility concerning EU universities.</p> <p>An increased level of internationalization is a key for a future for an excellent University.</p> <p>A small number of students on Doctoral Scholl from Industrial Engineering.</p>
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<p>teaching, as well as practical work in pilot units and experimental stations;</p> <p>All students have access to library services, databases, Internet, dormitory accommodation, social programs, sports facilities, as well as three canteens-restaurants..</p>	
<p>Opportunities:</p> <p>Development of collaboration networks and partnerships with foreign universities;</p> <p>Accessing specific grants for student practice;</p> <p>Collaboration with the economic environment for possible technological transfers, service offers, consultancy, initiation of study programs;</p> <p>The interest was shown by young people from various countries in and outside the European space to pursue doctoral degree programs, through the educational offer in languages of international circulation;</p> <p>Use the HORIZON 2020 strategy to encourage and support the university's research programs;</p> <p>Development of existing partnerships with public institutions and the private environment, with the role of generating new sources of financing;</p> <p>Reconfiguring the relations between the public authorities, the university and the economic environment;</p> <p>Generalization of the values of a culture of quality at the level of university education and research;</p> <p>The existence of a dynamic economic environment that requires graduates;</p> <p>The possibility of accrediting new doctoral fields, full of English language;</p> <p>Development of partnerships with other European universities for doctoral studies;</p> <p>Imposing the organization as a partner for the regional economic and social environment;</p> <p>Requirements for participation in projects with companies and institutions in the area of INDUSTRIAL ENGINEERING</p>	<p>Threats:</p> <p>Funding for higher education and research may lead to insufficient funding for the academic process;</p> <p>Domestic and international competition: open competitions to attract students, quality resources and funds;</p> <p>An aggressive policy of INDUSTRIAL ENGINEERING in attracting doctoral and postdoctoral students;</p> <p>National legislation that does not stimulate the attraction of foreign students (from outside the EU);</p> <p>A lack of interest of high school graduates for the Doctoral Study;</p>

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

No.	Type of indicator (*, C)	Performance indicator	Judgment	Recommendations
1	A.1.1.1.	<p>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) <i>the internal regulations of the Doctoral School;</i></p> <p>(b) <i>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;</i></p> <p>(c) <i>the Methodologies for organizing and conducting doctoral studies (for the admission of doctoral students, for the completion of doctoral studies);</i></p> <p>(d) <i>the existence of mechanisms for recognizing the status of a Doctoral advisor and the equivalence of the doctoral degree obtained abroad;</i></p> <p>(e) <i>functional management structures (Council of the doctoral school), giving as well proof of the regularity of meetings;</i></p> <p>(f) <i>the contract for doctoral studies;</i></p> <p>(g) <i>internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs based on advanced academic studies.</i></p>	<b><i>The indicator is fulfilled.</i></b>	Inside a regulation must be a space open for giving a certificate for every practical stage of doctoral study for PhD students who didn't finish the study for their competition on the labor market.
2	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.	<b><i>The indicator is fulfilled</i></b>	
3	A.1.2.1.	The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic backgrounds.	<b><i>The indicator is partially fulfilled</i></b>	Translated IOSUD presentation of the doctoral school. of Industrial Engineering
4	A.1.2.2.	The existence and use of a software program and evidence of its use	<b><i>The indicator is fulfilled</i></b>	Using an international expert in commission for PhD study and

		to verify the percentage of similarity in all doctoral theses.		always translate doctoral thesis into English.
5	<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>The indicator is fulfilled</b>	University must open grants or use more EU grants for foreign PhD and postdoctoral students to have the possibility to be excellent in education and to increase the internationality of the study of INDUSTRIAL ENGINEERING.
6	<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>The indicator is fulfilled</b>	In the future is need more private sources for doctoral but more for postdoctoral studies.
7	<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>The indicator is fulfilled</b>	
8	<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 developed within the past 5 years will be presented distinctly.	<b>The indicator is fulfilled</b>	

9	<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><i>The indicator is fulfilled</i></b>	
10	<b>*A.3.1.2.</b>	At least 50% of all teaching/research staff involved in teaching/research activities related to training programs for advanced university studies or in individual research/art creation programs have a full-time employment contract for an indefinite period with the IOSUD.	<b><i>The indicator is fulfilled</i></b>	
11	<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><i>The indicator is fulfilled</i></b>	
12	<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 <sup>6</sup> does not exceed 20%.	<b><i>The indicator is fulfilled</i></b>	
13	<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	<b><i>The indicator is fulfilled</i></b>	

<sup>6</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.

		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.		
14	<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.	<b>The indicator is fulfilled</b>	
15	<b>*B.1.1.1.</b>	<i>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.</i>	<b>The indicator is not fulfilled</b>	
16	<b>*B.1.2.1.</b>	<i>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.</i>	<b>The indicator is fulfilled</b>	

		<i>Interviewing the candidate is compulsory, as part of the admission procedure.</i>		
17	<b>B.1.2.2.</b>	<i>The expelling rate, including renouncement / dropping out of doctoral students 3, respectively 4, years after admission<sup>7</sup> does not exceed 30%.</i>	<b>The indicator is fulfilled</b>	We must increase the number of students on Industrial Engineering
18	<b>B.2.1.1.</b>	<i>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.</i>	<b>The indicator is fulfilled</b>	
19	<b>B.2.1.2.</b>	<i>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.</i>	<b>The indicator is fulfilled</b>	
20	<b>B.2.1.3.</b>	<i>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</i>	<b>The indicator is fulfilled</b>	
21	<b>B.2.1.4.</b>	<i>All along the duration of the doctoral training, doctoral students in the domain receive counseling/guidance from functional guidance commissions, which is reflected in written guidance and feedback or regular meeting.</i>	<b>The indicator is fulfilled</b>	
22	<b>B.2.1.5.</b>	<i>For a doctoral study domain, the ratio between the number of Doctoral students and the number of teaching staff/researchers providing guidance shall not exceed 3:1.</i>	<b>The indicator is fulfilled</b>	
23	<b>B.3.1.1.</b>	<i>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.</i>	<b>The indicator is fulfilled</b>	

<sup>7</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.

24	<b>*B.3.1.2.</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 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>The indicator is fulfilled</b>	
25	<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>The indicator is fulfilled</b>	
26	<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>The indicator is fulfilled</b>	
27	<b>C.1.1.1.</b>	<p>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"> <li>(a) the scientific work of Doctoral advisors;</li> <li>(b) the infrastructure and logistics necessary to carry out the research activity;</li> <li>(c) the procedures and subsequent rules based on which doctoral studies are organized;</li> <li>d) the scientific activity of doctoral students;</li> <li>e) the training program based on advanced academic studies of doctoral students;</li> <li>f) social and academic services (including for participation at different events, publishing papers etc.) and</li> </ul>	<b>The indicator is partially fulfilled</b>	Changing on web site new data from 2019 and 2020 year. The website of the University of Craiova must have a lot of changes. All documents must be in Romanian and in English. The website is differently organized on different pages.



		<i>counselling made available to doctoral students.</i>		
28	<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>The indicator is fulfilled</b>	
29	<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 IOSUD/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 the study programs, based on advanced academic studies; (f) the academic and scientific profile and 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 school, with necessary information (year of registration; Advisor); (h) information on the standards for developing the doctoral thesis; (i) information on the opportunities for doctoral students aiming to attend conferences, to publish articles, awarding scholarships etc. (j) 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>The indicator is fulfilled</b>	<i>More PhD and postdoctoral PhD study of INDUSTRIAL ENGINEERING based on the English language.</i>
30	<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>The indicator is fulfilled</b>	

31	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.	<b>The indicator is fulfilled</b>	
32	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.	<b>The indicator is fulfilled</b>	<i>Build virtual joint access laboratory for better online activities of PhD students. This means virtualize real laboratories and give access to students to training in virtual space, before starting real laboratory work.</i>
33	*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.	<b>The indicator is fulfilled</b>	<i>The institution must increase the number of PhD students in Erasmus projects incoming and outgoing abroad.</i>
34	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.	<b>The indicator is fulfilled</b>	
35	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.).	<b>The indicator is fulfilled</b>	<i>Internationalization is a key for a future for an excellent University. This level of Erasmus, Ceepus and other mobilities must be doubled in the future.</i>



## **VI. Conclusions and general recommendations**

*After the full evaluation University of Craiova, Doctoral study of INDUSTRIAL ENGINEERING, documents and talking with professors, rectors, deans, students and after reading plans and programs, annexes, and all other documents, I have only one decision. Doctoral school is quality. 32 from 35 indicators are fulfilled. Only one indicator is not fulfilled and two indicators are partially fulfilled. These criteria are oriented on looking at the website of the University. This website must be transformed in the same structure and all documents must be in Romanian and English. In the future, the University of Craiova needs more collaboration activities every year according to the Internationalization Doctoral Study. The University of Craiova must in the future period invest in new applications for building virtual platforms and virtual laboratories. Translating all Doctoral studies to the English language will be a big step for the University of Craiova for foreign students.*

**Date: 18.7.2021**



## **VII. Annexes**



