

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

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

I've been invited to cooperate as a foreign expert in the Periodical External Evaluation of the Institution Organizing Doctoral Study Programs (IOSUD), respectively of the doctoral study domains Cybernetics and Statistics, at the Bucharest University of Economic Studies. The evaluation took place between 26.7. and 30.7.2021 via Zoom. Experts Committee for domain led prof. univ. dr. Georgescu Mircea as panel coordinator, students' representative Sandu Vladimir – Cristian and myself.

### **II. Methods used**

Methods and tools used in the external evaluation process, before and during the evaluation visit:

- The analysis of the internal evaluation report of the doctoral study domain under review and its Annexes;
- The analysis of documents, data and information available on the IOSUD/Doctoral School(s) website, in electronic format;
- Visiting the buildings included in the institution's property;
- Meeting/discussions with doctoral students in the doctoral study domain under review;
- Meeting/Discussions with the graduates of the doctoral study domain under review;
- Meeting/Discussions with employers of the graduates in the doctoral study domain under review;
- Meeting/Discussions with the school officials of the Doctoral School(s) in which the doctoral study domain under review is operating;
- Meeting/Discussions with the doctoral advisors in the doctoral study domain under review;
- Meeting/discussions with the representatives of the various structures of the IOSUD/Doctoral School(s) in which the doctoral study domain under review is operating:
  - The Council of the Doctoral School, the University Senate, the Board of Directors, the Quality Assessment and Assurance Commission, the Quality Assurance Department, the Ethics Commission (including with the student representatives of these structures);

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



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

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

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

*\*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.** *Panel checked the existence of following specific regulations and their application at the level of the Doctoral School of the respective university doctoral study domain:*

The internal regulations of the Doctoral School (Regulation for the organization and conduct of admission to doctoral studies – Annexes IOSUD 25-34, Regulation for the organization and conduct of admission to doctoral studies – Doctoral School Economic Cybernetics and Statistics – Annex SDCSE 01, Election methodologies – Annexes IOSUD 35a and 35b, PO CSUD 08 Organization and conduct of the election process at the PhD School level – Annex CSUD 36 and Annex SDCSE 02, public competition for the selection of director - Annex IOSUD 37, selection of students – Annex CSUD 38, operational procedures for members of the Doctoral schools board – PO CSUD 08 – Annex IOSUD 36, Methodology to organize and carry out doctoral students admission – Annexes IOSUD 39-50, Minimum criteria for the doctoral field *vViva voce* – Annex IOSUD 51 IOSUD\_ASE internal rules regarding admission to Doctoral school SDCSE – Annex SDCSE 03 and for completion – Annex SDCSE 04, For PhD issued by other countries – Annex CSUD 53, Management and organization of Doctoral school council within national regulation – Annexes CSUD 54-58, Regular meeting of SDCSE Council – Annex SDCSE 06, Study contract which stipulates rights and obligation of parties – Annex CSUD 59, List of research topic proposals prepared by doctoral supervisors is approved each year by CSIE Faculty council, then endorsed by CSUD and approved by the university senate;

Regulations have been checked and panel 's impressin is that they are in order with the national regulation and allow normal functioning of the doctoral study domain.

Panel confimed the acknowledgment of involved parties with the regulations and its application and found no discrepancies.

*Recommendations: None.*

***The indicator is fulfilled.***

**Performance Indicator A.1.1.2.** *The doctoral school' Regulation includes mandatory criteria, procedures and standards binding on the aspects specified in Article 17, paragraph (5) of the Government Decision No. 681/2011 on the approval of the Code of Doctoral Studies with subsequent amendments and additions.*



The Regulation of SDCSE comprises necessary criteria, procedures and standards for issues specified in Article 17, Paragraph 5 of the Government decision no 681/2011, with subsequent amendments and additions.

Acceptance of new PhD supervisors is regulated in Art. 10 para. 2 and Art 13, while the manner in which membership of Doctoral school may be withdrawn is described in Art 16.

Decision making mechanisms regarding the opportunity, the structure and the content of the advanced academic studies training program is described Art 8. Para 8, subpara. C; Art 10 para 5, Art 45 and Art 48-51.

Procedures regarding the change of the PhD supervisor of a certain PhD student are specified in Art 10 para 4, while the conflict mediation procedures are defined in Art 8 para 8, subpara J.

Conditions under which the doctoral study may be interrupted are in Art 8 Para 8 subpara H.

For fraud prevention in scientific research and plagiarism, the Art 55 defines the ways.

Access to research resources is mentioned in Art 8, para 8, subpara Q.

Obligations of first year PhD students regarding attendance at training courses in advanced research is prescribed in Art 8, para 8 subpara R.

*Recommendations:* None.

***The indicator is fulfilled.***

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

*\*general description of the standard analysis.*

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

There is an IT system in place, at ASE, stakeholders confirmed that IT Department collects, processes and analyses data, relevant for the quality institutional assessment and assurance – Annex IOSUD 19.

The majority of processes is computerized, i.e. student admission, allocation in on-site campus accommodation, scientific research management etc.

Students and researchers confirmed that IT system works well.

*Recommendations:* None.

***The indicator is fulfilled.***

***Performance Indicator A.1.2.2. The existence and use of an appropriate software program and evidence of its use to verify the percentage of similarity in all doctoral theses.***

ASE is using anti-plagiarism verification for all doctoral theses, books and articles, through sistemantiplagiat.ro platform. Procedure is described in Annex IOSUD 60. Results of anti-plagiarism verification at SDCSE appear in the similarity report released by Doctoral school – Annex SDCSE 07. All doctoral theses in the last five years (56) were accepted for the Viva voce. The average similarity coefficients were 1.59% for C1 and 0.35% for C2.

*Recommendations:* None.

***The indicator is fulfilled.***



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

*\*general description of the standard analysis.*

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

Four research grants were granted to PhD supervisors at the level of the SDCSE Doctoral School in the last 5 years in the field of Cybernetics and Statistics: 1 sectoral plan project. 1 project Horizon 2020. 1 project SOL 2020. 1 project POCU / POCA — EU funding. In the field of Cybernetics and Statistics. a number of 3 research or institutional development, human resources grants were implemented at the time of submission of the self-assessment file - Annex SDCSE 08.

*Recommendations: None.*

**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%.*

54 PhD students are funding beneficiaries from the state budget at PhD studies in Cybernetics and Statistics (1st, 2nd, 3rd year of study). 12 PhD students benefited from other funding sources for at least 6 months the last five years – Annex SDCSE 09, Annex SDCSE 10.

*Recommendations: None.*

**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.).*

Within the doctoral field of Cybernetics and Statistics in the last five years the total revenues obtained from the annual budget allowance / PhD student. respectively the tuition fee for doctoral students enrolled in tuition fee were of 7.332.950 lei. Out of this income for the PhD students within the SDCSE in the field of Cybernetics and Statistics professional training expenses were below 10%, these being represented by expenses related to participation in conferences, summer schools, courses, internships abroad, publication of specialized articles, etc. – Annex SDCSE 11.

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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.



Experts at the joint meeting with all the evaluation panels pointed out, that 10% of students fee should be used for individual resources, needed by PhD students and not for paying general resources.

*Recommendations:* 10% of students fee shouldn't be spent for covering general costs of IOSUD functioning, as the other 90% are already ment for that.

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

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

*\*general description of the criterion analysis.*

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

*\*general description of the standard analysis.*

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

The ASE Department for Research and Innovation Management coordinates scientific research which provides logistical expertise and consultancy to stimulate the participation in research programs - Annexes IOSUD 62 and IOSUD 63 and the cooperation of specialists from different fields.

Scientific research in ASE holds sufficient financial, logistical and human resources to accomplish the proposed objectives. Teaching and research activities in the study programs take place in educational facilities owned by ASE: lecture rooms, amphitaters, seminar rooms, laboratories, online platforms — adequately equipped with appropriate computers and multimedia system — Annexes IOSUD 19 and IOSUD 20.

ASE has facilities for Internet wireless access including the suitable furniture. The software applications used in ASE have basic software licenses (operating systems. antivirus programs). specialized software licenses (SPSS, CIEL, EIEWS. SAS/R) and application software licenses (Microsoft Office, MS SharePoint, MS SQL Server, Stata, etc.).

PhD students of the Doctoral School SDCSE have access to IOSUD-ASE facilities in order to carry out the due research activities – access to rooms and laboratories belonging to CSIE Faculty, the Department of Statistics and Econometrics and the Department of Economic Cibernetics and Informatics is granted on a full-time basis – Annex SDCSE 12.

IOSUD has appropriate research infrastructure to support the conduct of doctoral studies' specific activities.

*Recommendations:* None.

***The indicator is fulfilled.***

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

*\*general description of the criterion analysis.*

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



*\*general description of the standard analysis.*

**Performance Indicator A.3.1.1.** *Minimum three doctoral thesis advisors within that doctoral domain, and at least 50% of them (but no less than three) meet the minimum standards of the National Council for Attestation of University Degrees, Diplomas and Certificates (CNATDCU) in force at the time when the evaluation is carried out, which standards are required and mandatory for obtaining the enabling certification.*

23 PhD supervisors are at the present affiliated to the academic field of doctoral studies Cybernetics and Statistics, Annex SDCSE 05. Two PhD supervisors did not hold a tenured status in IOSUD-ASE and 16 supervisors were IOSUD-ASE tenured — Annex SDCSE 13. Of the 23 PIED supervisors currently affiliated to the Doctoral School of Economic Cybernetics and Statistics, the Cybernetics and Statistics field. 21 PhD supervisors, accounting for 91.3 %, comply with the CDNATCU minimal standards needed and mandatory to get the habilitation diploma at the moment of evaluation — Annex SDCSE 14.

*Recommendations: None.*

***The indicator is fulfilled.***

**Performance Indicator \*A.3.1.2.** *At least 50% of all doctoral advisors have a full-time employment contract for an indefinite period with the IOSUD.*

In the Doctoral School SDCSE in the field of Cybernetics and Statistics the IOSUD-ASE tenured PhD supervisors are professors at the Faculty of Economic Cybernetics, Statistics and Informatics. In the evaluated period (2015-2020) in the Cybernetics and Statistics academic field of doctoral studies 10 PhD supervisors are affiliated to the SDCSE — Annex SDCSE 13.

*Recommendations: None.*

***The indicator is fulfilled.***

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

The subjects in the training programme based on advanced academic studies in CSUD PhD are delivered by teaching staff or researchers being PhD supervisors/habilitated, professor/scientific researcher I or associate professor/scientific researcher II with proven expertise in the area of his/her subjects — Annex CSUD 65. In the field of Cybernetics and Statistics the advanced studies training program subjects are delivered by teaching staff being PhD supervisors/habilitated. professor/scientific researcher I or associate professor/scientific researcher II or other specialists with proven expertise in the field of advanced studies — Annex SDCSE 15.

*Recommendations: None.*

***The indicator is fulfilled.***



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

PhD supervisors at the SDCSE contemporarily coordinate an average of 3.3 PhD students enrolled in the regular 3-year training program, and an average of 3 PhD students in total. The share of PhD supervisors in the Cybernetics and Statistics doctoral study field who simultaneously coordinate over 8 PhD students, but no more than 12, during doctoral studies (3 years plus extension periods granted under Article 39(3) of the Code approved by Government Decision No 681/2011, with subsequent amendments and additions) does not exceed 20%, accounting to 4.3% (excluding re-assignment of the deceased supervisor's students, and 8.7% re-assignments included) - Annex SDCSE 16 and Annex SDCSE 17.

My personal view of the burden of mentoring PhD students per supervisor (although completely legitimate) is, that 8 and more students is too much, and a soft recommendation to the institution would be, that no supervisor should exceed the number of 8 students – ideally 5. But everything is good, according to the regulation.

*Recommendations:* None.

**The indicator is fulfilled.**

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

*\*general description of the standard analysis.*

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

19 PhD supervisors at the SDCSE (or 82.6% of the doctoral supervisors) authored at least 5 publications indexed in the Web of Science or ERIH databases as well as other achievements relevant for the field, including international contributions, and 15 PhD supervisors also prove relevant progress in scientific research — development — innovation — Annex SDCSE 18. All PhD supervisors affiliated to the doctoral field Cybernetics and Statistics have confirmed their international visibility in the last five years with at least one of the following positions: member in the scientific committees of publications and

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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.



international conferences, member in the boards of international professional associations, guest at conferences or expert groups taking place abroad, member in PhD viva committee at universities abroad, PhD supervisors in cottutelle at universities abroad, etc. – Annex SDCSE 18.

*Recommendations:* None.

***The indicator is fulfilled.***

***Performance Indicator \*A.3.2.2.*** *At least 50% of the doctoral thesis advisors in a specific doctoral study domain continue to be active in their scientific field, and acquire at least 25% of the score requested by the minimal CNATDCU standards in force at the time of the evaluation, which are required and mandatory for acquiring their enabling certificate, based on their scientific results within the past five years.*

Research activity analysis showed that PhD supervisors affiliated to the Cybernetics and Statistics doctoral field carry out intense research. In fact, 93.7% reached at least 25% of the score requested by CNATDCU minimal standards in place at the date of the assessment, needed and mandatory to get habilitation, based on scientific results in the last five years — Annex SDCSE 19.

*Recommendations:* None

***The indicator is fulfilled.***

## **Domain B. EDUCATIONAL EFFECTIVENESS**

*\*general description of domain analysis.*

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

*\*general description of the criterion analysis.*

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

*\*general description of the standard analysis.*

***Performance Indicator \*B.1.1.1.*** *The ratio between the number of graduates of masters' programs of other higher education institutions, national or foreign, who have enrolled for the doctoral admission contest within the past five years and the number of seats funded by the state budget, put out through contest within the doctoral domain is at least 0.2 or the ratio between the number of candidates within the past five years and the number of seats funded by the state budget put out through contest within the doctoral studies domain is at least 1,2.*

In the Faculty of CSIE the doctoral field of Cybernetics and Statistics the ratio between the number of master graduates from other HEI's, enrolling for admission in the last five years and the number of state-funded places available for admission fluctuated from 0.20 to 0.67 — Annex SDCSE 20.

*Recommendations:* None.

***The indicator is fulfilled.***

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

*\*general description of the standard analysis.*



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

Candidates for PhD study have to upload following documents in PDF or jpeg/jpg format: a) Copy of the certificate of equivalence of education documents issued by The National Centre for Recognition and Equivalence of Diplomas (CNRED) from the Ministry of National Education, <http://www.cnred.edu.ro/>, for foreign citizens from the European Union, the European Economic Area and the Swiss Confederation; b) Copy of the internationally recognized language certificate, if applicable; c) filled out application form; d) at least one letter of recommendation accompanied by the Agreement on the Processing of Personal Data; e) curriculum vitae; f) the Doctoral research project (DRP) related to the doctoral theme for which he/she candidates signed; g) Copy of Baccalaureate or equivalent diploma, translated into English or; h) Copy of Bachelor's or equivalent degree, translated into English or Romanian; i) Copy of Master's or equivalent diploma, translated into English or Romanian; j) copies of transcripts / diploma supplements - legalized translations, related to the studies performed; k) Copy of the birth certificate, translated into English or Romanian - authenticated copy; l) Copy of the medical certificate, in Romanian or in English, which attests that the candidate is apt for pursuing academic studies; m) a copy of the passport and two photos size 3/4; n) agreement on the processing of personal data; o) affidavit on the authenticity of the documents uploaded to the platform [doctorat.ase.ro](http://doctorat.ase.ro) Bucharest University of Economic Studies; p) the proof of payment: the receipt confirming the payment of the registration fee to the doctoral studies admission contest.

Each candidate has to pass the language test which is eliminatory for the option of the respective study program. Only the candidates who meet the language standards may take the examination on the specialized subjects. Based on the results to the examination on the specialized subjects, candidates are assigned public funding and vacant seats.

The evaluation of the candidates takes place in accordance with the following criteria: the scientific results of the candidate in the chosen field of study (articles, research mentioned in his/her CV) (10% of evaluation); the quality of the Doctoral research project (DRP) (35%) assessed in relation with: The scientific background and the motivation of the selected theme (10%), Defining the objectives of the scientific research (10%), Research methodology (10%), Estimated results (5%). The quality of project presentation and candidate answers at the specialty exam (45%) The theme for the competition was proposed by representatives of the business community/ public institutions (10%). (Methodology - <http://doctorat.ase.ro/english-2>)

*Recommendations:* None.

**The indicator is fulfilled.**

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

For the CSIE Faculty, the dropout / abandonment rate of PhD students, 2 years after the admission to the SDCSE Doctoral School was the highest – 16% in 2015/16, later it improved greatly, ranging from 0% to 4.76%, which gives us an average of 5.61 for the last five years - Annex SDCSE 21.

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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.



*Recommendations: None.*

***The indicator is fulfilled.***

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

*\*general description of the criterion analysis.*

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

*\*general description of the standard analysis.*

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

The University's advanced academic training program includes 22 subjects relevant for the scientific research training of doctoral candidates. In the case of the Cybernetics and Statistics field of doctoral studies, the advanced training program includes 4 following courses: Ethics and Academic Integrity; Quantitative and Qualitative Methods in Scientific Research; Data Mining, Statistical Methods and Econometric Modelling; Optimizing, Decision-Making and Strategic Games. Methodology content is well covered in this study program.

Two courses are organized at IOSUD level, by the CSUD. The other two are organized within the SDCSE Doctoral School. Of the 4 subjects, 2 are intended for in-depth study of the scientific research methodology and statistical data processing — Annex CSUD 66; Annex CSUD 67; Annex SDCSE 22-25.

*Recommendations: None.*

***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 SDCSE Doctoral School curriculum is a specific subject dedicated to ethics in scientific research and intellectual property named Ethics and academic integrity, in the 2019-2020 academic year curriculum - Annex SDCSE 22, Annex SDCSE 24.

*Recommendations: None.*

***The indicator is fulfilled.***

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

The specific professional and transversal competences are described in the competence grids and in the course syllabuses included in the annual curricula of the SDCSE Doctoral School — Annexes SDCSE 24- 27.

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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.



*Recommendations: None.*

***The indicator is fulfilled.***

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

During the study, PhD students in the field of Cybernetics and Statistics benefit from counselling and guidance of individual advisory boards. These boards are agreed upon together with the PhD supervisor at the very moment of enrollment. The advisory board guide students via either written or oral feedback, besides the counselling provided by the PhD supervisor. The effectiveness of advisory boards is demonstrated by electronic correspondence including feedback provided to students by the members of the board - Annex SDCSE 28: as well as by the organization of scientific seminars during the academic year, there the board is also present - Annex SDCSE 29.

Interviewed students and graduates confirmed the functioning of this instrument.

*Recommendations: None.*

***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.*

The ratio between PhD students and the number of staff/researchers engaged in advising at the domain is 115:76=1.31, which is less than allowed 3:1 - Annex SDCSE 30.

*Recommendations: None.*

***The indicator is fulfilled.***

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

*\*general description of the criterion analysis.*

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

*\*general description of the standard analysis.*

***Performance Indicator B.3.1.1.*** *For the evaluated domain, the evaluation commission will be provided with at least one paper or some other relevant contribution per doctoral student who has obtained a doctor's title within the past 5 years. From this list, the members of the evaluation commission shall randomly select 5 such papers / relevant contributions per doctoral study domain for review. At least 3 selected papers must contain significant original contributions in the respective domain.*

Scientific contribution during the last five years, manifested in the number of relevant papers per PhD student who as awarded the PhD title, validated by CNATDCU by 30 September 2020, is illustrated in Annex SDCSE 31. Graduates published 681 papers with relevant scientific content in scientific journals indexed in databases, which means an average of 11 articles per PhD student.

Random check of PhD graduates publications: five papers with the following DOI numbers: 10.5171/2020.644164; 10.3390/su13095162; 10.1016/j.eap.2019.05.002; 10.3390/su10103518;



10.1108/JES-11-2016-0240 have been chosen randomly and all five of them contain original contributions in the respective domain.

*Recommendations:* None.

**The indicator is fulfilled.**

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

All the 56 PhD students receiving the PhD title in the last five years in the field of Cybernetics and Statistics, validated by CNADCU by 30 September 2020 attended at least one international scientific event (in or outside the country), considering that this is stipulated in the minimal criteria for their viva. A total of 360 conference presentations as recorded — Annex SDCSE 32. The ratio between the number of participations in international events and the number of PhD awarded students validated by CNADCU by 30 September 2020 is 3.

*Recommendations:* None.

**The indicator is fulfilled.**

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

*\*general description of the standard analysis.*

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

During the reported period in the case of the Cybernetics and Statistics field for the 56 theses defended, 40 external examiners participated in the viva boards of examination. During this period in one year the number of PhD theses allocated to an external examiner, having the same supervisor, was 1 or 2, in the case of 3.7 external examiners: 3 in the case of 2 examiners: and 5 in the case of 1 examiner, respectively - Annex SDCSE 33.

*Recommendations:* None.

**The indicator is fulfilled.**

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

The maximum ratio between the number of doctoral theses allocated to a particular scientific referee coming from another HEI than IOSUD-ASE and the number of doctoral theses presented during the reported period in the SDCSE Doctoral School is 0.05, which is lower than 0.3 — Annex SDCSE 34.

*Recommendations:* None.

**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:*

IOSUD-ASE has developed and regularly applies an internal procedure to assess and monitor the progress of doctoral Schools. It includes the scientific activity of the PhD supervisors; the needed infrastructure and logistics to carry out research; procedures and regulations for doctoral studies, the scientific activity of doctoral students, as well as the training program based on advanced university studies of doctoral students - Annex CSUD 68.

*Recommendations: None.*

***The indicator is fulfilled.***

**Performance Indicator \*C.1.1.2.** *Mechanisms are implemented during the stage of the doctoral study program to enable feedback from doctoral students allowing to identify their needs, as well as their overall level of satisfaction with the doctoral study program in order to ensure continuous improvement of the academic and administrative processes. Following the analysis of the results, there is evidence that an action plan was drafted and implemented.*

Mechanisms to collect feedback from PhD students (PhD students satisfaction questionnaire assessment) - Annex SDCSE 35, as well as an action plan to improve the identified deficiencies and stimulate scientific and academic performance of the SDCSE Doctoral School - Annex SDCSE 36 were implemented.

*Recommendations: None.*

***The indicator is fulfilled.***

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

*\*general description of the criterion analysis.*

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

*\*general description of the standard analysis.*

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



All the relevant information regarding the study domain is published on institutions website: Regulation of the Doctoral School <http://doctoiat.ase.ro> <http://doctoiat.ase.ro/cibemetica> statistica; Methodology to organize and carry out admission to doctoral studies <http://doctoiat.ase.ro/admitere>; Contract for doctoral studies <http://doctoiat.ase.ro/formulate>; Methodology to assess and present the viva <http://doctoiat.ase.ro/procedum-sustinere>; Curricula content <http://doctorat.ase.ro/planificarea-cursurilor-pentru-studentii-ase-bucuresti-din-cadrul-tutoror-scolilor-doctorale---semestrul-1>, <http://doctorat.ase.ro/Media/Default/Cursuri/LISTA%20DISCIPLINELOR%20ANUL%20I%20AFISATA%20PE%20SITE.pdf>; Scientific profile and thematic areas/research themes of PhD supervisors, as well as institutional contact details <http://doctorat.ase.ro> <http://doctorat.ase.ro/Media/Default/Documente/Admitere%202021/Locuri%20si%20teme%20admitere%20doctoratPlaces%20and%20themes%20doctoral%20admission-2021-2022.pdf>; List of PhD students and their key information <http://doctorat.ase.ro/simur.ase.ro>; Information on the standards to elaborate the doctoral thesis <http://doctorat.ase.ro/media/default/Documente/ghid%20elaborare%20teza%20doctorat%202017-2018.pdf>; Links to the summaries of the PhD theses to be publicly defended, as well as date, time, place of the viva, at least 20 days prior to the event <http://doctorat.ase.ro/anuturi-sustineri-publice-teze-de-doctorat>.

*Recommendations:* None.

**The indicator is fulfilled.**

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

*\*general description of the standard analysis.*

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

ASE provides learning resources free of charge through its libraries. The library provides access to bibliographic databases with full-text, bibliometric and statistical content, local or online access depending on the specifics of the platform: Jstor Business Collection I & IV, Thomson Reuters Eikon, Bloomberg Finance, CEEOL, Audit Analytics, access to the platform ZP Corporate, as well as other electronic resources with scientific journals, resources available through the Anelis Plus Association within the National Electronic Access to Scientific Literature for Supporting the Research and Education System in Romania - Anelis Plus 2020: Elsevier ScienceDirect Freedom Collection, ProQuest Central, Emerald Management Xtra, Clarivate Analytics (Thomson ISI), Scopus, CAB Ebooks, DeGruiter Ebooks, Elsevier ebooks Freedom Collection. In addition for Anelis Plus resources and for those resources requiring institutionally- contracted subscriptions, which allows remote access, the Mobile Access service goes via a mobile access account configured and validated from the ASE intranet, as well as externally at deacasã. ASE Library users have access to e-book collections purchased with continuous access by Ebrary ebooks ProQuest, Sprinter ebooks (Business and Economics collection), Emerald ebooks (Business, Management and Economics collection - 1991-2012 archive), Elsevier ScienceDirect ebooks, (Economics, Econometrics & Finance collection). During the second semester of the 2019-2020 academic year, ASE library launched a new digital component - the online academic library of ASE Publishing House, an online library that includes lectures, textbooks, seminar papers, etc. The online academic



library is available on the site. The field of Cybernetics and Statistics is represented in the case of all of the above mentioned databases.

*Recommendations: None.*

***The indicator is fulfilled.***

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

SDCSE PhD students can check the similarity coefficient of their scientific papers. PhD students have access upon request, to this electronic system to check the similarity with other existing scientific productions at [http: dmci.ase.ro/index.php/antiplagiat](http://dmci.ase.ro/index.php/antiplagiat).

*Recommendations: None.*

***The indicator is fulfilled.***

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

PhD students at the Doctoral School SDCSE have permanent access to the rooms and laboratories of the Faculty of Economic Cybernetics. Statistics and Informatics, as well as to departments' scientific research laboratories — Annexes IOSUD 10 and IOSUD 11.

*Recommendations: None.*

***The indicator is fulfilled.***

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

*\*general description of the criterion analysis.*

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

*\*general description of the standard analysis.*

***Performance Indicator \*C.3.1.1.*** *IOSUD, for every evaluated domain, has concluded mobility agreements with universities abroad, with research institutes, with companies working in the field of study, aimed at the mobility of doctoral students and academic staff (e.g., ERASMUS agreements for the doctoral studies). At least 35% of the doctoral students have completed a training course abroad or other mobility forms such as attending international scientific conferences. IOSUD drafts and applies policies and measures aiming at increasing the number of doctoral students participating at mobility periods abroad, up to at least 20%, which is the target at the level of the European Higher Education Area.*

ASE has an internationalization strategy - Annex IOSUD-05 elaborated for 2016-2027, in which directions of action are considered to ensure a greater internationalization of academic studies run by the university, including doctoral studies. ASE signs mobility agreements with foreign universities - Annex IOSUD 71, which enhance PhD students and the teaching staff mobility. In the case of the 56 SDCSE PhD students who defended their theses during the last five years, 76 papers were presented in international conferences abroad, accounting for 135.7% – Annex IOSUD 72; Annex SDCSE 32.

*Recommendations: None.*

***The indicator is fulfilled.***



**Performance Indicator C.3.1.2.** *In the evaluated doctoral study domain, support is granted, including financial support, to the organization of doctoral studies in international co-tutelage or invitation of leading experts to deliver courses/lectures for doctoral students.*

In the last five years international experts were invited to give courses speeches to SDCSE PhD students. For instance, foreign international experts participated in the delivery of the courses - Annex IOSUD 73.

*Recommendations: None.*

**The indicator is fulfilled.**

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

The internationalization of SDCSE Doctoral School work is supported via educational fairs aiming to attract international doctoral students and via partnerships with foreign universities — Annex IOSUD 74. SDCSE Doctoral School has constantly been open to cooperating with external experts. An example in this sense being the inclusion of PhD Prof. Alexandru Minea of University Clermont Auvergne in the board of examiners of candidate Raluca Elena Pop's PhD viva, with the aim of organizing doctoral programs in joint supervision. Annex SDCSE 33.

*Recommendations: None.*

**The indicator is fulfilled.**

#### IV. SWOT Analysis

<p><b><u>Strengths:</u></b></p> <ul style="list-style-type: none"> <li>- updated study program,</li> <li>- individual treatment of PhD students.</li> </ul>	<p><b><u>Weaknesses:</u></b></p> <ul style="list-style-type: none"> <li>- 10% of students fee shouldn't be spent for covering general costs of IOSUD functioning, as the other 90% are already ment for that, but for individual needs of each PhD student.</li> </ul>
<p><b><u>Opportunities:</u></b></p> <ul style="list-style-type: none"> <li>- good image of the school and its graduates on the market,</li> <li>- linking with a foreign partner to deliver more foreign students.</li> </ul>	<p><b><u>Threats:</u></b></p> <ul style="list-style-type: none"> <li>- economic situation in the future, possible decline of state funding.</li> </ul>

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

No.	Type of indicator (*, C)	Performance indicator	Judgment	Recommendations
A.1.1.1.			compliant	



A.1.1.2.			compliant	
A.1.2.1.			compliant	
A.1.2.2.			compliant	
A.1.3.1.			compliant	
A.1.3.2.			compliant	
A.1.3.3.			Partially fulfilled	10% of students fee shouldn't be spent for covering general costs of IOSUD functioning, as the other 90% are already ment for that.
A.2.1.1			compliant	
A.3.1.1			compliant	
A.3.1.2			compliant	
A.3.1.3			compliant	
A.3.1.4			compliant	
A.3.2.1			compliant	
A.3.2.2			compliant	
B.1.1.1			compliant	
B.1.2.1			compliant	
B.1.2.2			Compliant	
B.2.1.1			Compliant	
B.2.1.2			Compliant	
B.2.1.3			Compliant	
B.2.1.4			Compliant	
B.2.1.5			Compliant	
B.3.1.1			Compliant	
B.3.1.2			Compliant	
B.3.2.1			Compliant	
B.3.2.2			Compliant	
C.1.1.1			Compliant	
C.1.1.2			Compliant	
C.2.1.1			Compliant	
C.2.2.1			Compliant	
C.2.2.2			Compliant	
C.3.1.1			Compliant	
C.3.1.2			Compliant	
C.3.1.3			compliant	

*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).*

ASE's domain Cybernetics & Statistics is well integrated into the society, serving its needs. Study program is updated and current, also when benchmarking to foreign study programs. Satisfied employers, students and graduates testify that this PhD program is needed and that it is successfully planned and managed.

assoc. prof. dr. Armand Faganel  
University of Primorska,  
Slovenia

## 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.*