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Annex No. 3

The External Evaluation Report of a Doctoral Study Domain

Contents

I. Introduction[1]

This report was drafted during the evaluation of the doctoral studies field COMPUTERS AND INFORMATION TECHNOLOGY within the "DUNAREA DE JOS" UNIVERSITY OF GALATI. The audiences took place between 12 and 16 July 2021, and the composition of the commission of evaluators was:

- Prof.dr.ing. Horia Ciocârlie – Universitatea Politehnica din Timisoara;
- Prof.dr.ing. Ramon Vilanova Arbos – Universitat Autonoma de Barcelona;
- Drd.ing. Florina-Luminiţa Besnea – Universitatea din Craiova.

The field of Computers and Information Technology is part of the Doctoral School of Fundamental and Engineering Science. The Doctoral School of Fundamental and Engineering Science was established in 2017, in accordance with the Regulation on the organization of Doctoral Schools in the "Dunarea de Jos" University of Galati. The Doctoral School of Fundamental and Engineering Science is one of the 4 existing doctoral schools within IOSUD from the "DUNAREA DE JOS" UNIVERSITY OF GALATI. This doctoral school manages eight doctoral fields: Chemistry, Materials Engineering, Electrical Engineering, Food Engineering, Biotechnologies, Engineering and Management in Agriculture and Rural Development, Computers and Information Technology and Systems Engineering, comprising a number of 35 scientific leaders, of which:

- in the field of Chemistry there are 3 doctoral supervisors, 2 holders within the institution, and 1 is associate;
- in the field of Materials Engineering there are 4 doctoral supervisors, 4 holders within the institution;
- in the field of Electrical Engineering there are 3 doctoral supervisors, 1 holders within the institution, and 2 are associates;
- in the field of Food Engineering there are 9 doctoral supervisors, 7 holders within the institution, and 2 is associate;
- in the field of Biotechnologies there are 4 doctoral supervisors, 4 holders within the institution;
- in the field of Engineering and Management in Agriculture and Rural Development there are 4 doctoral supervisors, 4 holders within the institution;
- in the field of Computers and Information Technology there are 3 doctoral supervisors, 2 holders within the institution, and 1 is associate;
- in the field of Systems Engineering there are 5 doctoral supervisors, 3 holders within the institution, and 2 are associates;

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

Within the Doctoral School of Fundamental and Engineering Sciencethere are a number of 98 PhD students in internship, of which:

- in the field of Chemistry there are 11 doctoral students;
- in the field of Materials Engineering there are 15 doctoral students;
- in the field of Electrical Engineering there are 9 doctoral students;
- in the field of Food Engineering there are 13 doctoral students;
- in the field of Biotechnologies there are 10 doctoral students;
- in the field of Engineering and Management in Agriculture and Rural Development there are 21 doctoral students;
- in the field of Computers and Information Technology there are 9 doctoral students.
- in the field of Systems Engineering there are 10 doctoral students;

According to the provided report, the research mission of the Doctoral School of Fundamental and Engineering Science is in accordance with the mission of the "Dunarea de Jos" University of Galati on training through scientific research and research, development and innovation, as well as national and international priorities on scientific research in the fields of study in which he organizes doctoral studies:

1) The capitalization of the human resources and research, innovation and development infrastructure of „Dunărea de Jos" University of Galaţi in order to train new human resources highly qualified;
2) Development of innovation strategy and entrepreneurship spirit;
3) The consolidation of the accredited field of study, taking account of the university's resources and sustainable requirements of the society;
4) Continuous increase of the scientific, economic and social impact of studies and results of doctoral / postdoctoral stages, in accordance with the strategy and priorities defined at national and European level and by intensifying academic collaborations with the socio-economic environment and adapting the educational offer to market demands;
5) Boosting doctoral studies through developing the material base and human resources, as well as through promoting the multi and interdisciplinarity;
6) Promoting an efficient management system, based on university autonomy principle, in partnership with educational services beneficiaries.

Within the field of Computers and Information Technology the doctoral research is oriented towards thematic approaches such as:
- cybersecurity;
- intelligent systems;
- computer assisted learning;
- knowledge discovery and Big Data

Within the doctoral field of Computers and Information Technology, in the evaluated period 2016 - 2020, a number of 1 doctoral theses were publicly defended.

II. Methods used

In the external evaluation process, before, and during the evaluation visit, the following methods and tools were used:

- Analysis of the Report of internal evaluation of the field of doctoral university studies evaluated and its annexes;
- Analysis of documents, data and information available on the IOSUD / School / Schools website Doctorates, in electronic format;
- Visit to buildings from the institution's patrimony, which include:
  - classrooms;
  - laboratories;
  - the institution's library;

- research centers;
- reading rooms for students;

- Meeting / online discussions with doctoral students in the field of evaluated doctoral university studies;
- Meeting / online discussions with employers of graduates in the field of doctoral studies evaluated;
- Online meeting / discussions with the management of the Doctoral School in which the field of evaluated doctoral university studies operates;
- Online meeting / discussions with doctoral supervisors in the field of evaluated doctoral university studies;
- Online meeting / discussions with the person in charge of the evaluated doctoral university field and with the team that made the internal evaluation report;
- Online meeting / discussions with directors / managers / research laboratories related to the field of doctoral studies;
- Meeting / discussions with representatives of the various structures of IOSUD / School / Schools Doctoral degrees in which the evaluated doctoral university field of work operates:
  - The Doctoral School Council, the University Senate, the Board of Directors, the Evaluation and Quality Assurance Commission, the Quality Assurance Department, the Ethics Commission (including with the students representing these structures);
  - Career Counseling and Guidance Center;
  - student organizations;
- Application of questionnaires to doctoral students in the field of evaluated doctoral university studies.

III. Analysis of ARACIS's performance indicators

Domain A. INSTITUTIONAL CAPACITY

IOSUD from the "Dunarea de Jos" University of Galati and the Doctoral School of Fundamental and Engineering Science included in this IOSUD, prove a good institutional capacity, which allows the development of doctoral studies in appropriate quality conditions.

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

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.

IOSUD within the "Dunarea de Jos" University of Galati has approved and implemented the regulations provided in the specific legislation regarding the organization of doctoral studies.

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

The implementation of internal regulations is accomplished satisfactorily. The institution provided the necessary documents and proofs of such implementation. The organisation has reached an appropriate level of maturity.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issue

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.

Documentary proof is provided of the criteria, procedures and standards.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issue

The indicator is fulfilled

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

IOSUD within the "Dunarea de Jos" University of Galati has availability of the necessary software resources to support and carry out the doctoral studies in appropriate conidtions

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.*

Electronic platforms provided by the university are used. The system is observed as complete and effective.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issue

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.*

The University provides similarity analysis reports to PhD supervisors and students by using sistemantiplagiat.ro. The similarity analysis is a required step during the organization of the public defense of the thesis

Recommendations Indicator accomplished satisfactorily. No recomendations are issue

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.

IOSUD from the "Dunarea de Jos" University of Galati ensures that globally the financial resources are used optimally, and the revenues obtained from doctoral studies are supplemented by additional funding to that provided by the government.

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.*

A total of 4 research grants obtained by doctoral thesis advisors were identified. Complete information regarding its use, field of application and owner of the grant is provided.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
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%.*

A total of 4 students have been or are currently under project grants. Full list of projects with identification of grants is provided. The proportion of additional funding is $(4/9) \cdot 100 = 44.44\%$. Therefore above the 20% threshold.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issue
The indicator is fulfilled

Performance Indicator *A.1.3.3.[2] *At least 10% of the total amount of doctoral grants obtained by the university through institutional contracts and of tuition fees collected from the doctoral students enrolled in the paid tuition system is used to reimburse professional training expenses of doctoral students (attending conferences, summer schools, training, programs abroad, publication of specialty papers or other specific forms of dissemination etc.).*

The list of initiatives that support reimbursement is provided. These initiatives confirm the support of about 10%. Therefore the threshold is met.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issue

The indicator is fulfilled

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[2] The indicators marked with an asterisk (*) hold a special status, referring exclusively to the evaluation of doctoral studies domains, as per Article 12 from the annex No.1 of the Order of the minister of education No. 3651/12.04.2021 approving the Methodology for evaluating university doctoral studies and the system of criteria, standards and performance indicators used in the evaluation. In case they are not met, the Agency extends a period of maximum 3 years to IOSUD to correct the respective deficiencies.

Criterion A.2. Research infrastructure

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

The Doctoral School of Fundamental and Engineering Science from the "Dunarea de Jos" University of Galati has a very good quality research infrastructure that can properly support the activities specific to doctoral university studies.

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.*

There is a presentation web site for research centers and their offer along with lists of equipment are provided that allow to explore the available equipment. The Computers and Information Technology domain-specific research is focused on software, hence the main infrastructure is comprised of computers, networking equipment.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issue

The indicator is fulfilled

Criterion A.3. Quality of Human Resources

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

The Doctoral School of Fundamental and Engineering Science from the "Dunarea de Jos" University of Galati has qualified staff to conduct the doctoral university studies.

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.*

A total of 3 out of 3 PhD supervisors meet the criteria. This represents a percentage clearly above the threshold.

Recommendations: More staff from the Computers and Information Technology department should be encouraged to obtain habilitation.

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.*

Employee certificates are presented for all full-time PhD supervisors. At the Computers and Information Technology domain, there are 3 advisors, 1 of them is associated advisor. This provides a percentage of 66.67% of advisors with full-time employment

> *Recommendations:* Indicator accomplished satisfactorily. No recomendations are issued
> **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.*

It is verified that 100% of the studies of the doctoral domain are taught by experts of the required level. For each expert teaching to doctoral students, a resume and relevant expertise is provided

> *Recommendations* Indicator accomplished satisfactorily. No recomendations are issue
> **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[3] does not exceed 20%.*

At the Computers and Information Technology domain, no PhD supervisor currently coordinates more than 8 PhD students. This results in a percentage of 0%. Clearly under the stated threshold.

> *Recommendations:* Indicator accomplished satisfactorily. No recomendations are issue
> **The indicator is fulfilled**

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

The Doctoral School of Fundamental and Engineering Science from the "Dunarea de Jos" University of Galati has doctoral advisors with an internationally visible scientific activity for the Computers and Information Technology domain.

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*

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[3] 3 years for the doctoral university studies with the duration stipulated at Article 159, paragraph (3), respectively 4 years for the doctoral university studies with the duration stipulated at Article 174, paragraph (3) of the Law of national education No.1/2011 with subsequent amendments and additions, with additional extension periods approved as per Article 39, paragraph (3) of the Code of doctoral studies approved by the GD No. 681/2011 with subsequent amendments and additions.

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.

At the Computers and Information Technology domain, PhD supervisors in the field show an great record of publications and international research recognition. All 3 meet the threshold.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued

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.*

At the Computers and Information Technology domain, all 3 PhD advisors meet the required level. This results in a percentage of 100%. Clearly over the stated threshold.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued

The indicator is fulfilled

Domain B. EDUCATIONAL EFFECTIVENESS

IOSUD from the "Dunarea de Jos" University of Galati and the Doctoral School of Fundamental and Engineering Science included in this IOSUD, prove a good educational effectiveness, which allows the development of doctoral studies in appropriate quality conditions.

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

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

IOSUD from the "Dunarea de Jos" University of Galati and the Doctoral School of Fundamental and Engineering Science included in this IOSUD prove, in the Computers and Information Technology domain, they can atract doctoral candidates from outside the institutions. At the School level, the average ratio of doctoral candidates from outside the university to the number of seats is 48%.

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.

At the Computers and Information Technology domain level,over the last 5 years the average ratio of doctoral candidates from outside the university to the number of seats is 83%.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
The indicator is fulfilled

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

IOSUD from the "Dunarea de Jos" University of Galati and the Doctoral School of Fundamental and Engineering Science prove the Computers and Information Technology admitted candidates demonstrate good academic and professional level.

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.

As presented in the report, the admission procedure includes the stated criteria and procedures.
Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
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[4] does not exceed 30%.*

There are no expelled students at 3 years after admission for the Computers and Information Technology domain.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
The indicator is fulfilled.

Criterion B.2. The content of doctoral programs

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.

The training program based on advanced university studies in the field of Computers and Information Technology is adequate to improve the research and dissemination skills of doctoral students and to strengthen ethical behavior in science.

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

There are 3 courses offered: Academic writing for technical sciences and research project management, English for engineering and research, Research etics and academic integrity.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
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.*

The course Research etics and academic integrity is offered. The discipline is explicitly covered.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
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*

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[4] 3 years for the doctoral university studies with the duration stipulated at Article 159, paragraph (3), respectively 4 years for the doctoral university studies with the duration stipulated at Article 174, paragraph (3) of the Law of national education No. 1/2011 with subsequent amendments and additions.

knowledge, skills, responsibility and autonomy that doctoral students should acquire after completing each discipline or through the research activities[5].

The requested mechanisms to ensure the academic programme addresses the stated academic objectives are in place. They are enumerated in the course description form for each course, form reviewed and approved by the Doctoral School Counsil.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
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.*

Each doctoral student in the Computers and Information Technology field has a guidance commission of 3 members. There is a consultation schedule for each commission member. The research reports as well as the doctoral thesis are presented by the doctoral students to their guidance commission and meeting minutes are recorded. There are also joint publications of doctoral students with e members of the guiding commission.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
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.*

In the Computers and Information Technology field there are 10 guidance commission members and 9 doctoral students. The ratio is 0.9. Clearly under the stated threshold.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
The indicator is fulfilled.

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

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

In the case of the field of Computers and Information Technology within the "Dunarea de Jos" University of Galati, the research is capitalized by doctoral students through presentations at scientific conferences and scientific publications.

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[5] Or by what the graduate should know, understand and to be able to do, according to the provisions of the Methodology of 17 March 2017 regarding inscription and registration of higher education qualifications in the National Register of Qualifications in Higher Education (RNCIS) approved by the Order No.3475/2017 with subsequent amendments and additions.

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.*

There is 1 PhD student who has obtained the title of doctor in the field of doctoral studies of Computers and Information Technology in the last five years and whose title has been validated by CNATDCU, 4 articles or other relevant contributions have been provided.

Recommendations: Students take longer than the standard degree duration (3 years) to finalize their thesis. Measures should be taken to accelerate their activity.

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.*

The (1) PhD student graduating in the last 5 years in the of Computers and Information Technology field has 2 presentations at international conferences. The ratio is 2. Clearly over the stated threshold.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued

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.

The Doctoral School of Fundamental and Engineering Science appeals for the field of Computers and Information Technology to external scientific references in the commissions for public defense of doctoral theses for the analyzed field.

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.*

In the last 5 years just 1 doctoral thesis has been presented in the Computers and Information Technology domain. As such no specialist coming from a higher education institution other than "Dunarea de Jos" University of Galati could have been allocated more than once per year.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued

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.

In the last five years just 1 doctoral thesis has been presented in the Computers and Information Technology domain. Indicator does not apply

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued

The indicator is fulfilled

Domain C. QUALITY MANAGEMENT

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

IOSUD from the "Dunarea de Jos" University of Galati and the Doctoral School of Fundamental and Engineering Science included in this IOSUD, generally prove a good quality management, which allows the development of doctoral studies in appropriate quality conditions. An improvement in the degree of internationalization is needed.

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.

The Doctoral School of Fundamental and Engineering Science has the institutional framework created for internal quality assurance.

Performance Indicator C.1.1.1. The Doctoral school in the respective university study domain shall demonstrate the continuous development of the evaluation process and its internal quality assurance following a procedure developed and applied at the level of the IOSUD, the following assessed criteria being mandatory:
(a) the scientific work of Doctoral advisors;
(b) the infrastructure and logistics necessary to carry out the research activity;
(c) the procedures and subsequent rules based on which doctoral studies are organized;
d) the scientific activity of doctoral students;
e) the training program based on advanced academic studies of doctoral students;
f) social and academic services (including for participation at different events, publishing papers etc.) and counselling made available to doctoral students.

There are several procedures ("Initiation and internal monitoring of education programs", "Self-assessment methodology for IOSUD and Doctoral Schools" and others) elaborated by the "Dunarea de Jos" University of Galati. They covers all required axes of analysis: a) the scientific activity of PhD supervisors; b) the infrastructure and logistics necessary to the research activity; c) the subsequent procedures and norms on the basis of which the doctoral studies are organized; d) the scientific activity of PhD students; e) the training program is based on advanced university studies of PhD students.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
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.*

Feedback mechanisms are implemented to get feedback every year from doctoral students are implemented in a questionnaire: Questionnaire for assessing the satisfaction of doctoral students regarding doctoral advisor. Results have been analysed and an action plan has been drafted and implemented.

Recommendations: The questionnaire should be expanded to other aspects of the doctoral study program
The indicator is fulfilled.

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

The Doctoral School of Fundamental and Engineering Science proves transparency in the presentation of information and accessibility to learning resources.

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

In the case of Computers and Information Technology within the Doctoral School of Fundamental and Engineering Science, the information of interest for doctoral students, future candidates, respectively the information of public interest are available for consultation in electronic format on the website of the "Dunarea de Jos" University of Galati, section Doctoral study program.

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.

Links to websites with the information published are provided.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
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.

In the case of Computers and Information Technology field, the Doctoral School of Fundamental and Engineering Science, provides the necessaru resources for conducting the doctoral studies.

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

"Dunarea de Jos" University of Galati benefits through the national ANELIS Plus 2020 Project from online access to electronic scientific resources, including ScienceDirect, Scopus, SpringerLink, Clarivate Analytics.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
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.*

Doctoral students can obtain a similarity analysis report from sistemantiplagiat.ro with the consent of their doctoral supervisors.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
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 PhD students have permanent access to the research laboratories available to the Doctoral School of Fundamental and Engineering Science. In the case of shared resources (e.g., Cloud platforms, High Performance Computing system) or limited ones, access is planned by prior appointment.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
The indicator is fulfilled.

Criterion C.3. Internationalization

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

Within the Doctoral School of Fundamental and Engineering Science, there are specific Erasmus+ K103 bilateral agreements for both education and practical activities.

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.

In the case of Computers and Information Technology, out of the 9 doctoral students there were 4 mobilities : 2 internships through ERASMUS+ (22%) and 2 participations to scientific events (22%). The total mobility percentage is 44%. The corresponding threshold (35%) is exceeded. Also, 20% threshold is exceeded.

Recommendations: Students should be encouraged to take internships abroad
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.*

The annual International Conference of Doctoral Schools invites first-rate experts to give courses / lectures for doctoral students. In the case of Computers and Information Technology domain, international symposiums are organized with the participation of domain experts.

Recommendations: More focused measures should be considered to organize doctoral studies in internation co-tutelage.
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.).*

"Dunarea de Jos" University of Galati has promoted its educational programs, including doctoral studies, at several international events.

Recommendations: Indicator accomplished satisfactorily. No recomendations are issued
The indicator is fulfilled.

IV. SWOT Analysis

Strengths:	Weaknesses:
- PhD supervisors prove a high level research activity; - The research infrastructure is corresponding to the assumed mission and objectives; - Expense budget set for each doctoral student for conference taxes or acquisitions;	- Finalizing the PhD thesis is longer than the 3 years (standard duration), as the majority of PhD students are fully employed; - Minimal number of PhD advisors
Opportunities:	**Threats:**
- The quality of doctoral supervisors allows obtaining a higher degree of internationalization; - There is strong interest for PhD candidates in the domain of Computers and Information Technology, internal, but also external to the IOSUD	It is hard to compete with the private sector in the domain of Computers and Information Technology; as such, most PhD candidates are fully employed and prefer a reduced frequency study program

V. Overview of judgments awarded and of the recommendations

No.	Type of indicator (*, C)	Performance indicator	Judgment	Recommendations
1		A.1.1.1	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
2		A.1.1.2	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
3		A.1.2.1	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
4		A.1.2.2.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
5		A.1.3.1.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
6	*	A.1.3.2	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
7	*	A.1.3.3.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
8	IPC	A.2.1.1.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
9	IPC	A.3.1.1.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
10	*	A.3.1.2.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
11		A.3.1.3.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
12	*	A.3.1.4.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.

13	IPC	A.3.2.1.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
14	*	A.3.2.2.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
15	*	B.1.1.1.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
16	*	B.1.2.1.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
17		B.1.2.2.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
18		B.2.1.1.	The indicator is fulfilled.	Some additional courses with topic related to Systems Engineering would be useful for the PhD Students.
19		B.2.1.2.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
20		B.2.1.3.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
21		B.2.1.4.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
22	IPC	B.2.1.5.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
23	IPC	B.3.1.1.	The indicator is fulfilled.	Students take longer than the standard degree duration (3 years) to finalize their thesis. Measures should be taken to accelerate their activity.
24	*	B.3.1.2.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
25	*	B.3.2.1.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
26	*	B.3.2.2.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
27		C.1.1.1.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
28	*	C.1.1.2.	The indicator is fulfilled.	The questionnaire should be expanded to other aspects of the doctoral study program
29	IPC	C.2.1.1.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
30		C.2.2.1.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
31		C.2.2.2.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
32		C.2.2.3.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.
33	*	C.3.1.1.	The indicator is fulfilled.	Students should be encouraged to take internships abroad
34		C.3.1.2.	The indicator is fulfilled.	More focused measures should be considered to organize doctoral studies in internation co-tutelage.
35		C.3.1.3.	The indicator is fulfilled.	Indicator accomplished satisfactorily. No recommendations are issued.

VI. Conclusions and general recommendations

The field of Computers and Information Technology is part of the Doctoral School of Fundamental and Engineering Science. Doctoral School in Fundamental and Engineering Studies (SD-SFI) is part of IOSUD – "Dunarea de Jos" University of Galaţi (UDJG). From the analysis of the materials made available at institutional level it can be seen that all the criteria have been met.

I present the general conclusions derived from the analysis within the field of Computers and Information Technology. The doctoral studies have proven to be of high level according to other International doctoral study programmes. This level of excellence is achieved thanks to the high-level research activity of UDJG academics that, also, act as PhD supervisors. In addition, doctoral students, in turn, do have the appropriated research infrastructure to conduct their research activity.

There is identified great potential for internationalization and networking with other institutions outside Romania, those are emerging from high level supervisors. However, that potential is not developed as it could. This fact could represent a great attraction of international doctoral students and more opportunities for academic relationship with international experts.

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.*