EXTERNAL EVALUATION REPORT

GEORGE EMIL PALADE UNIVERSITY OF MEDICINE, PHARMACY, SCIENCE AND TECHNOLOGY OF TÂRGU MUREŞ

DOCTORAL STUDY DOMAIN ENGINEERING AND MANAGEMENT

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I. Introduction

1.1. The external evaluation context

- Type of evaluation:
  Doctoral study domain ENGINEERING AND MANAGEMENT

- Period of the evaluation visit:
  6-10.09.2021

- Composition of the Experts Committee:
  Coordinator: Prof.univ.dr. Gabriela TONT, Universitatea din Oradea, International expert: Dr. Alba Kruja, Epoka University, Albania,
  PhD student: Odica Florin-Alexandru, Universitatea Politehnica din Bucuresti,

1.2. The Doctoral School of Letters, Humanities and Applied Sciences

George Emil Palade University of Medicine, Pharmacy, Science and Technology of Târgu Mureş (UMPhST G.E. Palade Tg. Mureş) is a higher education institution established by the Romanian Government Decision No. 735 of September 13, 2018 (Annex 41-00-01) for the amendment and completion of the Government Decision No. 26/2017 on the organization and functioning of the Ministry of National Education, published in the Official Gazette No 808/20 September 2018, as a result of the merger by absorption between the University of Medicine and Pharmacy of Târgu Mureş and the "Petru Maior" University of Târgu Mureş (UPM). In Annex 41- 00-01 and Annex 41-00-02, the institution has presented the official documents related to the establishment, functioning and evolution of the two institutions until their merger. The current Institution for Organizing University Doctoral Studies within UMPhST G.E. Palade Tg. Mureş (IOSUD) was formed by the merger of the Doctoral Schools of UMPh and UPM.

The doctoral school of UMPh currently called the Doctoral School of Medicine and Pharmacy (SDMF) has been operating for 54 years. By Decree 800/1965 and the Order of the Minister of Education, the Institute of Medicine and Pharmacy of Târgu Mureş obtained the right to grant the scientific title of Doctor of Medicine by appointing 7 Doctoral advisors.

The Doctoral School of Letters, Humanities and Applied Sciences started its activity (under the name of the Doctoral School of Literary Studies) when "Petru Maior" University of Târgu Mureş, by the Order of the Minister of Education and Research no. 667 of March 28, 2007, was granted the title of Institution for Organizing Doctoral Studies, in the field of Philology. The function of doctoral advisors was established by the Order of the Minister of Education, Research and Youth no. 1071 of 15.05.2007 for three teachers, and later 5 other members joined this field. Meanwhile the History field was established in 2016 by the MENCS Order no. 3235/ 2016, currently having 7 doctoral advisors (4 tenured supervisors), and the fields of Engineering and Management, and Computer Science were accredited in 2018, by Order no. MENC no.4154/2018 and Order no. 4209/2018, each having three tenured Doctoral advisors.

During the period 2015-2019, the Doctoral School of Letters, Humanities and Applied Sciences had a total number of 100 doctoral students. Out of 65 doctoral theses defended, 64 were validated by CNATDCU and one is in the validation process. A total of 92 theses are in progress. The distribution by domains and by years of enrollment of these doctoral theses is represented in the table below.

Table 1.2.: Doctoral students enrolled during the period 2015-2019

Enrollment Year	Number of students by field of study				Total Enrolled	Nr. Of Thesis in Progress
	Philology	History	Engineering & Management	Computer Science		
2019/2020	8	5	4	3	20	20
2018/2019	13	6	4	1	24	22
2017/2018	11	7			18	18
2016/2017	10	17			27	23
2015/2016	11				11	9
Total	**53**	**35**	**8**	**4**	**100**	**92**

1.3. The Doctoral Study Domain in Engineering and Management

The doctoral study domain in Engineering and Management was established in 2018. The evolution of the number of enrolled doctoral students reflects a constant growth with 4 students enrolled in the academic year 2018-2019 and 4 students in 2019-2020 as shown in Table 1.3., meanwhile there are not yet graduated any of the enrolled students. In this study domain there are three doctoral advisors who at the same time have a full-time employment contract for an indefinite period with the IOSUD:

1. Prof.dr.habil.eng Liviu Moldovan, habilitation certificate MO no. 4857/11.08.2016
2. Prof.dr.habil.eng Petruta Blaga, habilitation certificate MO no. 4141/21.06.2017
3. Prof.dr.habil.eng Manuela Rozalia Gabor, habilitation certificate MO no. 4142/21.06.2017

Table 1.3. The evolution of the number of doctoral students enrolled in the study program by academic years and the financing form

Academic year	No. of doctoral students and the form of financing				Total
	Budget		Financed tuition	Tuition	
	Total	Scholarship			
2019/2020	-	-	**4**		4
2018/2019	-	-		4	4

II. Methods used

The external evaluation process started with the review of the Self Evaluation File of the doctoral study in Engineering and Management before the evaluation visit. This file contained the Internal Evaluation Report as well as the relevant documents in support of it. The documents in support of the internal evaluation report were in the form of Annexes and links directing to documents or information made available in the UMPhST G.E. Palade Tg. Mureş website. During this phase a series of questions related to the relevant performance indicators and criteria were identified and listed, which would be answered in the online meetings that would be held during the institutional evaluation visit.

The 5-day institutional evaluation was realized during the dates 6-10/09/2021, where the External Committee members realized the meetings defined in the agenda of the visit such as:

- Meeting/Discussions with representatives of the institution and of the Council for Academic Doctoral Studies (CSUD),
- Meeting/Discussions with the contact person for the doctoral study domain in Engineering and Management,
- Meeting/Discussions with the doctoral advisors in the doctoral study domain in Engineering and Management.
- Meeting/Discussions with the members of the Ethics Commission,
- Meeting/Discussions with the Commission for Quality Evaluation and Assurance (CEAC) members/ Quality Assurance Department.
- Meeting/Discussions with PhD students.
- Meeting/Discussions with the Directors/ persons in charge of the research centers/laboratories within the doctoral study domain of Engineering and Management.
- Meeting/Discussions with Doctoral Schools Council (CSD members).

However, since the doctoral study domain in Engineering and Management has not yet any graduates, in the arranged meetings with the graduates and with the employers of the graduates there were no any participant.

The visit to the buildings was realized by the experts` committee coordinator. This site visit included in the institution's property, comprising:

- classrooms;
- laboratories;
- the institution’s library;
- research centers;
- the Career Counselling and Guidance Center;
- lecture halls for students;
- the student residences;
- the student cafeteria;
- sports ground etc.;

During all these meeting, various issues related to the evaluation of the doctoral domain in Engineering and Management were reviewed, by clarifying specific elements, for which relevant questions were raised and extra documents and information were requested and reviewed.

After the visit and the meeting held, the experts` committee started the work to draft the external evaluation report based on the available documentation and the information collected during the meetings and visits conducted in this Institution.

III. Analysis of ARACIS's performance indicators

Domain A. INSTITUTIONAL CAPACITY

The doctoral university studies are organized by IOSUD within UMPhST G.E. Palade Tg. Mureş in accordance with the National Education Law No 1/2011, Government Decision No 681/2011 on the approval of the Code of doctoral studies and the Institutional Regulation for the organization and development of doctoral studies (Annex 41-00-04).

The analysis of this domain on Institutional Capacity focuses on evaluating the fulfillment by the Institution of the criterions related to:

- The administrative, managerial institutional structures and the financial resources.
- Research infrastructure.
- Quality of human resources.

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

The organization of the doctoral studies in the field of social and human sciences, exact sciences, and engineering sciences, is carried out through the Doctoral School of Letters, Humanities and Applied Sciences (SOLS) in the form of full-time and part-time education with a duration of 3 years. SOLS operates in 4 fields of research, respectively: Philology, History, Computer Science, Engineering and Management with 22 doctoral advisors who meet the minimum CNATDCU standards for habilitation.

The analysis of this criterion focuses on evaluating the standards fulfillment by the Institution related to:

- The implementation of the effective functioning mechanisms provided for in the specific legislation on the organization of doctoral studies by IOSUD.
- The possession by IOSUD of the logistical resources necessary to carry out the doctoral studies' mission.
- 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.

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.

This standard analysis focuses on evaluating the performance indicators fulfillment related to:

- The existence of specific regulations and their application at the level of the Doctoral School of the respective university doctoral study domain.
- The inclusion of 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 by the doctoral school' Regulation.

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:*

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is confirmed that the following regulations exist and are implemented by UMPhST:

(a) the internal regulations of the Doctoral School;

- Institutional regulation for the organization and conduct of doctoral schools within UMPhST G.E. Palade: Annex 41-00-06
- Operational procedure regarding the conduct of doctoral studies POS-SDR-02: Annex 41-00-07

(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;

- Electoral regulation of UMPhST, UMPhST-REG-64: Annex 41-00-05
- Management structures CSD (2016-2021): Annex 41-00-2-02

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

- Regulations and Admission Procedures SDLS (2015-2019): Annex 41-00-08
- Procedures on the Admission to University Doctoral Studies In The Doctoral School of Literature, Humanities and Applied Sciences (2021-2022): https://www.umfst.ro/fileadmin/doctorate/DocUtile/2020/UMFST-PO-SDR-09_Ed.01_Rev.3_Admitere_2021-2022_finala.pdf
- Procedure regarding the Completion of University Doctoral Studies: https://www.umfst.ro/fileadmin/documente_oficiale/proceduri/UMFST-PO-SDR-08.pdf
- Guide for the elaboration of the doctoral thesis: https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/elaborarea-tezei-de-doctorat.html

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

- Regulations on the recognition of the quality of Doctoral advisor and Regulations on the recognition of the PhD diploma: Annex 41-00-16

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

- The Council of the Doctoral School of Literature, Humanities and Applied Sciences (2021-2026) is composed of 7 members:https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/csd.html
- Management structures CSD (2016-2021): Annex 41-00-2-02
- The Council of the Doctoral School of Literature, Humanities and Applied Sciences has conducted regular meetings since its establishment and Meeting Minutes are reported in the University`s website: https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/rapoarte-sedinte-csd.html

f) the contract for doctoral studies;

- Contract of doctoral university studies (2015-2019): Annex 41-00-2-06

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

- Internal Procedures Link: https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/conducatori-de-doctorat/profilul-stiintific-al-conducatorilor-de-doctorat.html

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that IOSUD is led by the Council for Doctoral Studies (CSUD) as a collective governing body, and the two IOSUD affiliated Doctoral Schools are led by the Doctoral School Council (CSD). The composition of the three Councils respects the legal provisions of the Code of doctoral and the Institutional Regulation for the organization and development of doctoral studies (Annex 41-00-04). CSUD was constituted following the elections that took place at the level of IOSUD in November 2020, in accordance with the electoral procedure (Annex 41-00-05) as well as that CSUD is led by a director whose appointment has met the requirements of the legal methodology (Annex 41-00-2-01).

Recommendations: No Recommendations
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.*

Referring to the assessed document on the Regulations for the Organization and Operation of doctoral schools within IOSUD of George Emil Palade University of Medicine, Pharmacy, Sciences, and Technology of Târgu Mureș at the address: https://www.umfst.ro/fileadmin/documente_oficiale/regulamente/UMFST-REG-24.pdf, it is ascertained that it provides all the aspects mentioned in the Government Decision No. 681/2011 on the Code of Doctoral Studies, with subsequent amendments and completions, at art. 17, paragraph 5.

Recommendations: No Recommendations
The indicator is fulfilled.

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

This standard analysis focuses on evaluating the performance indicators fulfillment related to:

- The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic background.
- The existence and use of an appropriate software program and evidence of its use to verify the percentage of similarity in all doctoral theses.

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.*

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that the IOSUD of George Emil Palade University of Medicine, Pharmacy, Sciences, and Technology of Târgu Mureș possess an effectiveness and appropriate IT system to keep track of doctoral students and their academic background. The recording of doctoral students and their academic path is made with the help of the computer system University Management System (UMS) (Annex 41-00-2-16). This specialized software of university management allows efficient management of the educational cycle of a student from the moment he/she applies to be admitted, until the completion of his/her studies. It also provides real-time analysis and synthesis of information needed in the decision-making process. UMS can integrate both aspects related to the academic- didactic organization, load reports, as well as tools dedicated to the management of processes and documents, or the distance learning system - eLearning.
UMS functionalities are as below (https://www.umfst.ro/e-umfst.html):

- academic organization,
- admission of candidates,
- Web Teachers (academic profile, grading system),
- scholarships (distribution and allocation of scholarships)
- student management (students' academic history, credits management, final exams, study documents, etc.),
- examinations,
- administration (creation of accounts, addition of components),
- export RMU,
- reports and analyses,
- taxes,
- additional tools (load report, teaching materials, student certificates)
- graduation documents,
- Web students (students' access to academic records and financial situations by creating a web account within the UMS platform). https://carnet.umfst.ro/auth/login

Recommendations: No recommendations
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.*

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that at the IOSUD level, there is a computer program that is used to verify the percentage of similarity for all doctoral theses subject to pre-examination. This similarity analysis is done using the Sistemantiplagiat.ro program, approved and countersigned by the Ministry of Education and Research in 2016. The Anti-plagiarism contract can be found in Annex 41-00-11 and in Annex 41-00-12 is provided the Anti-plagiarism regulation. Since the field of Engineering and Management was founded in 2018, there are still no graduates, so this Doctoral Domain has not yet used it.

Recommendations: No recommendations

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.

This standard analysis focuses on evaluating the performance indicators fulfillment related to:

- Existence of research or institutional / human resources development grant under implementation, per doctoral study domain under evaluation, existence of research or institutional development / human resources grant for the doctoral study domain, obtained by doctoral thesis advisors operating in the evaluated domain.
- The percentage of doctoral students active, who 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.
- The doctoral grants obtained by the university through institutional contracts and of tuition fees collected from the doctoral students enrolled in the paid tuition system used to reimburse professional training expenses of doctoral students.

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.*

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that at the level of the Doctoral Domain on Engineering and Management there are seven research or institutional development grants for the period 2015-2020 as evidenced by Annex 41-00-2.3-09. Detailed information on these grants is reported in the table below:

Table A.1.3.1.: Grants and Research Contracts for the Period 2015 - 2020

No.	PhD supervisor - director/ manager in the project	Project Title	Source of funding	Value
1.	Prof. univ.dr.ing. Blaga Petruța	ACTIV pe Piața Muncii: Abilități și Competențe Tehnice pentru Integrare și Valorificare pe Piața Muncii. Proiect Multi-regional FSE – POSDRU 125, Domeniul Major de Intervenție: POS DRU DMI 5.1.Dezvoltarea și implementarea măsurilor active de ocupare, 2014-2015. Parteneri: Universitatea Politehnica din București, Universitatea Tehnică "Gheorghe Asachi" din Iași, Universitatea "POLITEHNICA" din Timișoara, Universitatea „Petru Maior" din Tîrgu Mureș, Institutul pentru Politici Sociale, Pythia International	POSDRU	Buget UPM:300.000 euro
2.	Prof. univ.dr.ing. Blaga Petruța	Dezvoltarea Sistemului Național – Resurse Umane. Proiecte de Mobilitate pentru Cercetători – Proiect UEFISCDI, PN-III-P1-1.1-MC- 2018-3148, Cod Proiect: MC-2018-4506, Domeniu: 10. Științe sociale și economice.	FDI	3.700 lei

3.	Prof. univ.dr.ing. Blaga Petruța	Amélioration Continue de l'Evaluation de l'Employabilité, Director	PNCDI III-MC	226.882 euro
4.	Prof.univ.dr.ing. Moldovan Liviu	Improve Your Emotional Skills -I-YES (ERASMUS +2015-1-FR01-KA202-015115)	Institut pour le Developpement et laFormation, Franţa	27.352 euro
5.	Prof.univ.dr.ing. Moldovan Liviu	Internaţionalizarea educaţiei şi a cercetării ştiinţifice la Universitatea „Petru Maior" din Targu Mureş - INTECS	CNFIS-FDI-2016-0121	54.444 euro
6.	Prof.univ.dr.ing. Moldovan Liviu	Amélioration Continue de l'Evaluation de l'Employabilité, Beneficiar: UPM Director	2016-1-FR01-KA204-024 Erasmus+	226.882 euro
7.	Prof.univ.dr.ing. Moldovan Liviu	Direcționarea învățământului superior african în promovarea inovației incluzive pentru dezvoltare – AHEAD, Beneficiar: UMFST Director	585919-EPP-1-2017-1-RO-EPPKA2-CBHE-JP Erasmus +	706326 euro

Recommendations: No recommendations
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%.*

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that every year there are held at university level, internal, individual and collective grant competitions, in which doctoral students participate, thus benefiting from other funding sources. At the same time, the awarding of grants to doctoral advisors is done through national or international competition, and a requirement in submitting the project funding application within UEFISCDI, is represented by the inclusion of doctoral students in the research team. Annex 41-00-2-07 reports information on the students whose fee is financed, Hot. CA- funds utilization. For the evaluation period (2018-2020), within the Doctoral Domain on Engineering and Management, there are 4 doctoral students with funded tuition fee (tuition fee is borne by the university) and 3 with fee (one of the students has dropped out). So, for this period (2018-2020), the proportion of students who benefit from university support only through this action is 4/7=57.14%, which is higher than 20%. In the Internal Evaluation Report, the evaluators have included in calculation also the academic year 2020-2021, but it is not on relevance of this accreditation report, so the enrolled students during this period are not added.

Recommendations: No recommendations
The indicator is fulfilled.

Performance Indicator *A.1.3.3.[1] *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*

[1] 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.

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.).

Annex 41-00-2-07 reports information on the students whose fee is financed, Hot. CA- funds utilization. As it is evidenced for the evaluation period (2018-2020), the Doctoral Domain on Engineering and Management financially supports some of the doctoral students by financing their tuition fee. At the same time, from doctoral grants, tuition fees, doctoral students can use a large part for settlements such as for participation in national and international conferences, summer schools, publication of specialized articles, procurement of materials, transportation, etc.

Recommendations: No recommendations
The indicator is fulfilled.

Criterion A.2. Research infrastructure

The analysis of this criterion focuses on evaluating the standard fulfillment by IOSUD related to possessing a modern research infrastructure to support the conduct of doctoral studies' specific activities.

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

This standard analysis focuses on evaluating the performance indicator fulfillment related to the venues and the material equipment available to the doctoral school to enable the research activities in the domain on Engineering and Management, in line with the assumed mission and objectives (computers, specific software, equipment, laboratory equipment, library, access to international databases etc.).

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.*

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that within the projects carried out in the last 5 years in which the Doctoral School of Letters, Humanities and Applied Sciences has been involved, modern research equipment and software have been purchased, according to the specific standards of a high-performance education. The research activities of Doctoral students and teaching staff in the field of Engineering and Management, benefit from the support of the Research Center in Quality Engineering and Digital Manufacturing, presented in Annex 41-00-2-09.

Doctoral students have access to the Anelis database. Through the ANELIS PLUS consortium (Association of Universities, Research-Development Institutes and Central University Libraries in Romania), UMPhST G.E. Palade Tg. Mureş has access to the following electronic information and documentation resources (databases / full text platforms and bibliographic and bibliometric databases):

- ELSEVIER SCIENCE DIRECT,
- SPRINGERLINK,
- CLARIVATE ANALYTICS - WEB OF KNOWLEDGE,
- PROQUEST CENTRAL,
- SCOPUS,
- WILEY ONLINE LIBRARY CAMBRIDGE JOURNALS,
- NATURE RESEARCH.

Access is possible from the network www.anelisplus.ro, by mobile access (outside the institution), by authentication based on account and password: http://www.anelisplus.ro/?page id=64. Through the account the students can access those databases subscribed by the institution also from outside the university campus/ institute/ library. The total digitized fund of includes: 137,309 pages, representing 389 titles. The publications fund comprises a total of 58,837 titles in 161,824 copies, of which 1356 titles are periodicals. Meanwhile, the library ensures the access of doctoral students to a wide variety of information and specialized publications, making available to readers:

- 108 computers.
- 1 printer.
- 1 scanner for public use i2s e-Scan 10.
- 2 Lenovo All in One B 520 workstations.
- 1 copier

The composition, name, and location of the educational spaces at the Doctoral School of Letters, Humanities and Applied Sciences are shown in the table below:

Table A .2.1.1.: Activity spaces within the Doctoral School of Letters, Humanities and Applied Sciences.

BUILDINGS *A*, L, Nicolae Iorga Street No.1				
Room No.	**Room name**	**No. of seats**	**m2**	**No. of computers**
A409	Multimedia research center	4	36	3
A410	MPLR Philology Research Center	5	36	3
A411	Doctoral Studies Laboratory	20	60,6	8
L21	Computer Laboratory. Research Center Advanced computational technologies	20	74,69	20
L25	Web Programming/ Web Technologies Laboratory	28	74,69	28
L30-31	Project Management Laboratory	40	113,54	40
L33	Operating Systems*I* Computer Networks Laboratory	28	74,69	28

The scientific research activity within the Domain on Engineering and Management is in accordance the University`s Strategic Plan for Institutional Development reported in the Annex 41-00-09, and the Charter of the UMPhST G.E. Palade Tg. Mureş reported in Annex 41-00-03 which include:

- assuming strategic objectives and operational objectives

- promoting quality research by identifying research priorities
- ensuring efficient research structures
- dissemination of research results.
- pursuing visibility, national and international recognition

Valorization of research within IOSUD is realized in several ways, namely: publishing books in the university publishing house (recognized by CNCS) and in other publishing houses in the country and abroad; articles published in specialized journals from abroad and in the country; papers held and published at international and national conferences; didactic papers developed within UMPhST G.E. Palade Tg. Mureş; doctorate (completion of thesis, exams, and parts of the thesis); research contracts; organizing and equipping new laboratories, etc. The results of the doctoral research within the Doctoral School of Letters, Humanities and Applied Sciences are disseminated in journal, respectively, published books, patents, etc. which at the same time are reflected annually in the Rector's Report on the State of the University (Annex 41- 00-10).

Recommendations: No recommendations
The indicator is fulfilled.

Criterion A.3. Quality of Human Resources

The analysis of this criterion focuses on evaluating the standards fulfillment by the Institution related to:

- Sufficient qualified staff to ensure the conduct of doctoral study program at the level of each domain.
- Visible scientific activity at international level carried by the doctoral advisors.

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

This standard analysis focuses on evaluating the performance indicators fulfillment related to:

- Minimum three doctoral thesis advisors within the doctoral domain on Engineering and Management, 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 least 50% of all doctoral advisors have a full-time employment contract for an indefinite period with the IOSUD.
- 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 percentage of doctoral thesis advisors who concomitantly coordinate more than 8 doctoral students, but no more than 12, who are themselves studying in doctoral programs does not exceed 20%.

Within the SOLS, in the field of doctoral studies in Engineering and Management, there are three doctoral advisors:

1. Prof.dr.habil.eng Liviu Moldovan, habilitation certificate MO no. 4857/11.08.2016
2. Prof.dr.habil.eng Petruta Blaga, habilitation certificate MO no. 4141/21.06.2017
3. Prof.dr.habil.eng Manuela Rozalia Gabor, habilitation certificate MO no. 4142/21.06.2017

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.*

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that these three Doctoral advisors meet the minimum CNATDCU standards related to the Industrial Engineering and Management Commission, according to OMENCS 6129/2016. Annex 41-00-2.3-02 includes the Assessment forms for the fulfillment of the minimum CNATDCU standards, of the three doctoral advisors.

Table A.3.1.1. Professors who support the subjects in the training program based on advanced university studies related to the field of Engineering and Management

No.	Subject Name	Professor	Status
1	Quality assurance and sustainable assessment in engineering	Prof.dr.habil.eng. Liviu Moldovan	PhD advisor, habilitated
2	Management and quality control of production processes	Prof.dr.habil.eng. Petruta Blaga	PhD advisor, habilitated
3	Concepts and methods of statistics in engineering research	Prof.dr.habil. Manuela Rozalia Gabor	PhD advisor, habilitated
4	Scientific research methodology	Prof.dr.habil. Manuela Rozalia Gabor	PhD advisor, habilitated
5	Ethics in scientific research and intellectual property	Prof.dr.habil.eng Petruta Blaga	PhD advisor, habilitated

Recommendations: No recommendations

The indicator is fulfilled.

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

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that the three Doctoral advisors in the field of Engineering and Management: Prof. habil. eng. Liviu Moldovan PhD, Prof. habil. eng. Petruta Blaga PhD, Prof. habil. Manuela Rozalia Gabor PhD are tenured professors within IOSUD and have permanent and full-time

employment contracts at "George Emil Palade" University of Medicine, Pharmacy, Sciences, and Technology of Targu Mureş. Annex 41-00-2.3-01 includes the certificates of their tenured position.

Recommendations: No recommendations
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.*

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that the subjects in the training programme based on advanced university studies related to the field of Engineering and Management are taught by teaching staff that have the quality of doctoral advisors, as shown in the table A.3.1.1. and Annex 41-00-2-05.

Recommendations: No recommendations
The indicator is fulfilled.

Performance Indicator *A.3.1.4. *The percentage of doctoral thesis advisors who concomitantly coordinate more than 8 doctoral students, but no more than 12, who are themselves studying in doctoral programs[2] does not exceed 20%.*

Referring to the information provided in the table A.3.1.4. below and Annex 41-00-2.3-07 the number of doctoral students, and the doctoral advisors indicate that none of the doctoral advisors coordinates more than 8 doctoral students.

Table A.3.1.4. Number of doctoral students during doctoral studies and their doctoral advisors

No.	***Doctoral advisor***	***No. of students***
1	Prof.habil.eng.Liviu Moldovan, PhD	4
2	Prof.habil.eng. Petruta Blaga, PhD	2
3	Prof. habil.Manuela Rozalia Gabor,PhD	8

Recommendations: No recommendations
The indicator is fulfilled.

[2] 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.

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

This standard analysis focuses on evaluating the performance indicators fulfillment of:

- 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 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 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.

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.*

Referring to the assessed data in Annex 41-00- 2.3-03 and the meetings/discussions held during the evaluation visit, it is ascertained that the three doctoral advisors in the field of Engineering and Management have international visibility, mainly in the last five years. A summary of the information is presented below:

Prof.habil.eng. Liviu Moldovan, PhD

- 3 articles published in journals indexed in the Web of Science - Clarivate Analytics (ISI) with an f impact factor:

Moldovan, L.; Grif, H.-S.; Gligor, A (2016); ANN Based Inverse Dynamic Model of the 6-PGK Parallel Robot Manipulator. International Journal of Computers Communication & Control, ISSN 1841-9836, vol. 11, Issue 1, pp. 90-104. FI 2.093

Moldovan L. The Environmental Pillar Assessment in Vocational Education. Environmental Engineering and Management Journal, March 2017, Vol.16, No. 3, 739-750.FI 1,186

Moldovan L., Gligor A, Grif H.-S., Moldovan F. (2019) Dynamic Numerical Simulation of the 6-PGK Parallel Robot Manipulator. Proceedings of The Romanian Academy, Series A Volume 20, Number 1/2019, pp. 67-75.FI 1,752

- 20 articles in volumes indexed in the Web of Science - Clarivate Analytics (ISI) Proceedings:
- 6 patents

Moldovan. L. Mecanism paralel cu ase grade de libertate pentru constructia robotilor. Patent, OSIM No. 128018 / 2016

Vasilache V. Moldovan L. Element de filtrare. Patent, OSIM No. 129988 / 2018

Vasilache V. Moldovan L. Dispersor. Pate nt, OSIM Nr. 129989 / 2018

Vasilache V. Moldovan L. Torpila pentru injectat materiale plastice. Patent, OSIM No. 129994 / 2018

Vasilache V. Moldovan L. Duza pentru injectat materiale plastice. Patent, OSIM No. 129995 / 2018

Vasilache V. Moldovan L. Matrita pentru injectat piese cave. Patent, OSIM No. 130052 / 2018

- Director/responsible/member in grant teams/projects won through competition - 10- grants
- President of the scientific committee of the international conference Interdisciplinarity in Engineering (INTER-ENG) 2016, 2017, 2018, 2019, 2020 editions.
- Editor Proceedings of 5 international conferences
- Editor/Coordinator of the editing committee of a scientific journal Acta Marisiensis. Seria Technologica
- Member in the boards of some international professional associations;

Member in the Editorial Board of the journal Manufacturing Engineering, Slovacia

Member in the Editorial Board of the journal Research in production and Development, Brasil

Member in the Editorial Board of the journal Quality Insights, Lethonia

Member in the scientific committee - 19th International Wate r Technology Conference

Member in the Editorial Board of FAIMA Business & Management Journal

Member in the Editorial Board - Journal of Management and Economic Engineering.

Prof.dr.habil.eng. Petruta Blaga

- 3 articles published in journals indexed in the Web of Science - Clarivate Analytics (ISI) with an f impact factor, of which two articles in the yellow zone:

Gabor, M.R, Blaga, P., Mati, C., Supporting employability by skills assessment innovative tool - a sustainable transnational insights from employers, Sustainability, 11(12), article no. 3360, 1-19, ISSN 2071-1050, 2019, FI 2019 = 2,576, AIS 2019 = 0,332, the yellow zone,

Gabor, M.R., Blaga, P., Gavrila, V.A, Perception of promoting activity in Romanian supply chain of chemical substances. A complex statistical analysis, Revista de Chimie, 70, ISSN 0034-7752, 4477-4481, 2019, FI 2019 = 1,755.

Blaga, P., Gabor, M. R, Contribution of ROI Methodology in Romanian Pharmaceutical Industry through e-learning for improve performance of human resources, Inzinerine Ekonomika - Engineering Economics, 29 (3), pp. 312-318, ISS N 1 39 2-278 5, 2018, FI 2018 = 0,730,

Blaga, P., Gabor, M. R., Evaluation of the E-Learning Program Impact over Organizations in the Romanian Pharmaceutical Industry, Indian Journal of Pharmaceutical Education and Research, vol. 50, Issue 4, Oct-Dec. 2016, pp. 517-529, ISSN 0019-5464, 2016, FI 2016 = 0,250.

Blaga, P., Gabor, M. R, Investigating the impact of e-learning as an alternative for business education in pharmaceutical industry in Romania by RO I methodology, Amfiteatru Economic, XVI (37), 902 - 917, ISSN 1582-9146, 2014, WOS:000344542400015, FI 2018 = 1,238, the yellow zone.

- Member in five the scientific committees of some international publications and conferences.

Prof.dr.habil. Manuela Rozalia Gabor

- 16 articles ISI in journals with IF and AIS, out of which two articles in the red zone and six two articles in the yellow zone:

Gabor, M.R, Oltean, F.D. Babymoon tourism between emotional well-being service for medical tourism and niche tourism. Development and awareness on Romanian educated women, Tourism Management, vol. 70, pp. 170-175, ISS N 0261-5177, 2019, FI 2019 =7,432, AIS 2019 = 1,132, the red zone,

Gabor, M.R., Blaga, P., Mati, C. - Supporting employability by skills assessment innovative tool - a sustainable transnational insights from employers, Sustainability, 11(12), article no. 3360, 1-19, ISSN 2071-1050, 2019, FI 2019 = 2,576, AIS 2019 = 0,332, WOS:000473753700130, the yellow zone,

Kardos, M., Gabor, M.R, Cristache, N. - Green Marketing Roles for Sustainability and Ecopreneurship. Case Study: Green Packaging Impact on Romanian Young Co nsumers' Environmental Responsibility, Sustainability, 11(3), article no. 873, 1-13, ISSN 2071-1050, 2019, FI 2019 = 2,576, AIS 2019 = 0,332, the yellow zone

Oltean, FD; Gabor, MR; Stancioiu, AF; Kardos, M.; Kiss, M.; Marinescu RC. Aspects of Marketing in Dental Tourism - Factor of Sustainable Development in Romania. Sustainability, vol. 12(10), ID 4320, pp. 1-13, ISSN 2071-1050, 2020, FI 2019 = 2,576, AIS 2019 = 0,332,

Gabor, M. R, Cristache, N., Oltean, F.D. Romanian Consumer Preferences for Celebrity Endorsement TV Ads for Romanian and Global Apparel Brands.Fibres & Textiles in Eastern Europe, 6(144), pp. 8-14, ISSN 1230-3666, 2020, FI 2019 = 0,775, AIS 2019 = 0,101.

- 18 papers ISI Proceedings indexed in Clarivate Analytics
- Member in the scientific committees of international publications and conferences for 9 B DI journals and international conferences both in the country and abroad

American International Journal of Social Science, USA (BDI), 2014 - present, indexed ORJI,

International Business Research, Toronto, Canada (BDI), 2011 - present, indexed EBSCO, RePec, IDEAS, Publons, Ulrich's Directory,

International Journal of Economic Research, India (BDI), din 2011- present, indexed EBSCO, Ulrich's Directory, DOAJ,

International Journal of Marketing Studies, Toronto, Canada (BDI), 2011- present, indexed EBSCO, RePec, IDEAS, Publons, Ulrich's Directory,

Annals of "Dunarea de Jos" University of Galati. Fascicle I. Economics and Applied Computer Science, Universitatea "Dunarea de Jos" din Galati, Romania (BDI), 2018 - present, indexed ERIH+, EconLit, RepEc, EBSCO, DOAJ, Urlich,

Economics - Innovative and Economics Research Journal, OIKOS Institute, Bosnia Hertegovina (BDI), 2020 -present, indexed in ERIH +, DOAJ, EBSCO, Publons, ProQuest, RePec

American Research Journal of Humanities & Social Science (BDI), USA, indexed EBSCO, Index Copernicus, DOAJ.

Recommendations: No recommendations

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.*

Referring to the assessed documents, it is ascertained that the three doctoral advisors assigned to the Engineering and Management field of doctoral studies, based on the scientific results from the last five years, have obtained 100% of the score required by the minimum CNATDCU standards (Annex 41-00-2-05).

• Prof.dr. habil. eng. Liviu Moldovan, based on the scientific results from the last five years, has obtained 100% of the score required by the minimum CNATDCU standards

No. crt.	Domain of activity	Category Professor/habilitation requirements	Score obtained in the last5years
1.	**Professional and didactic activity (Al)**	Minimum 130 points	**547,5**
2.	**Research activity (A2)**	Minimum 300 points	**1.042,48**
3.	**Recognition of the activity's impact (A3)**	Minimum 100 points	**837,9**
	TOTAL	530 points	**2.427,88**

• Prof. dr. habil. eng. Petruta Blaga, based on the scientific results from the last five years, has obtained l00% of the score required by the minimum CNATDCU standards

No. crt.	Domain of activity	Category Professor/habilitation requirements	Score obtained in the last5 years
1.	**Professional and didactic activity (Al)**	Minimum 130 points	**208,65**
2.	**Research activity (A2)**	Minimum 300 points	**2 061,62**
3.	**Recognition of the activity's impact (A3)**	Minimum 100 points	**398,50**
	TOTAL	530 points	**2 668,77**

• Prof. dr. habil. Manuela Rozalia Gabor, based on the scientific results from the last five years, has obtained 100% of the score required by the minimum CNATDCU standards

No. crt.	Domain of activity	Category	Score obtained in the last 5 years
		Professor/habilitation requirements	
1.	**Professional and didactic activity (Al)**	Minimum 130 points	**380,75**
2.	**Research activity (A2)**	Minimum 300 points	937,555
3.	**Recognition of the activity's impact (A3)**	Minimum 100 points	**934,00**
	TOTAL	530 points	**22 52,30**

Recommendations: No recommendations
The indicator is fulfilled.

Domain B. EDUCATIONAL EFFECTIVENESS

The analysis of this domain on Educational Effectiveness focuses on evaluating the fulfillment by the Institution of the criterions related to:

- The number, quality and diversity of candidates enrolled for the admission contest.
- The content of doctoral programs.
- The results of doctoral studies and procedures for their evaluation.

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

The analysis of this criterion focuses on evaluating the standards fulfillment by the Institution related to:

- The capacity to attract candidates from outside the higher education institution or several candidates exceeding the number of seats available for the doctoral studies.
- The academic, research and professional performance the candidates admitted to doctoral studies demonstrate.

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.

This standard analysis focuses on evaluating the performance indicators fulfillment related to 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 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.

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.*

Referring to the assessed Institution`s document, Annex 41-00-2.3-08 related to the quality of candidates admitted and the meetings/discussions held during the evaluation visit, it is ascertained that within the field of Engineering and Management, no places financed from the state budget were allocated in the past years, thus the ratio is 0.

Recommendations: Enrolling students financed by state funds put out through contest
The indicator is not fulfilled.

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

This standard analysis focuses on evaluating the performance indicators fulfillment related to:

- Selection criteria to doctoral study program admission 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.
- The expelling rate, including renouncement / dropping out of doctoral students.

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.*

Referring to the assessed Institution`s Operational Procedure (https://www.umfst.ro/fileadmin/doctorate/DocUtile/2020/UMFST-PO-SDR-09_Ed.01_Rev.3_Admitere_2021-2022_finala.pdf) and the meetings/discussions held during the evaluation visit, it is ascertained that admission to the doctoral study program on Engineering and Management is based on selection criteria including previous academic, research and professional performance, their interest for scientific research, publications in the domain and a proposal for a research subject. Interviewing the candidates is also part of the admission procedure. The candidates participating in the competition for admission to doctoral studies are, in general (7 out of 8), master's degree graduates. (Annex 41-00-2.3-08)

Recommendations: No recommendations

The indicator is fulfilled.

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

Referring to Annex 41-00-2.3-04 and the meetings/discussions held during the evaluation visit, it is ascertained that the expulsion/dropout rate within the field of Engineering and Management is 1/4=25%. From the four students enrolled in the academic year 2018-2019, there is only one student dropping out in the academic year 2020-2021.

Recommendations: No recommendations
The indicator is fulfilled.

Criterion B.2. The content of doctoral programs

The analysis of this criterion focuses on evaluating the appropriateness of the doctoral program in Engineering and Management to improve doctoral students' research skills and strengthen their ethical behavior in science.

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.

This standard analysis focuses on evaluating the performance indicators fulfillment related to:

- 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.
- 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 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.
- All along the duration of the doctoral training, doctoral students receive counselling/guidance from functional guidance commissions.
- The ratio between the number of doctoral students and the number of teaching staff/researchers providing doctoral guidance must not exceed 3:1.

[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.

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.*

Referring to the assessed doctoral study in Engineering and Management curriculum available online at the web address: https://www.umfst.ro/fileadmin/doctorate/SD_LSUA/2020-2021/Plan_inv._INGM.pdf, subject syllabuses available at the web address: https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/studenti-doctoranzi/fisele-disciplinelor.html, as well as the meetings/discussions held during the evaluation visit, it is ascertained that the training programme is based on advanced university studies including 5 disciplines relevant to the field of Engineering and Management such as:

- Quality assurance and sustainable assessment in engineering
- Management and quality control in production processes
- Statistical concepts and methods in engineering research
- Methodology of scientific research
- Ethics in scientific research and intellectual property

Of these disciplines, the discipline "Methodology of scientific research" is meant for the in-depth study of research methodology, and the discipline "Statistical concepts and methods in engineering research" is meant for statistical data processing.

Recommendations: No recommendations
The indicator is fulfilled.

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

Referring to the assessed doctoral study in Engineering and Management curriculum available online at the web address: https://www.umfst.ro/fileadmin/doctorate/SD_LSUA/2020-2021/Plan_inv._INGM.pdf, subject syllabuses available at the web address: https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/studenti-doctoranzi/fisele-disciplinelor.html, as well as the meetings/discussions held during the evaluation visit, it is ascertained that the training programme is based on advanced university studies including 5 disciplines relevant to the field of Engineering and Management such as:

- Quality assurance and sustainable assessment in engineering
- Management and quality control in production processes
- Statistical concepts and methods in engineering research
- Methodology of scientific research
- Ethics in scientific research and intellectual property

The discipline "Ethics in scientific research and intellectual property" is meant for ethics in scientific research.

Recommendations: No recommendations
The indicator is fulfilled.

Performance Indicator B.2.1.3. *The IOSUD has mechanisms to ensure that the academic training program based on advanced university studies addresses „the learning outcomes", specifying the knowledge, skills, responsibility and autonomy that doctoral students should acquire after completing each discipline or through the research activities*[4]*.*

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that the mechanisms by which IOSUD ensures that the training programme is based on advanced university studies, related to the evaluated field, aiming at "learning outcomes" have been created. The objectives, competences, knowledge, skills and responsibility that doctoral students should acquire are specified at the link: https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/studenti-doctoranzi/fisele-disciplinelor.html
The mission and the general objectives are:

- The academic training of the doctoral student at the highest level of performance, in order to meet his/her intellectual, professional and social development needs, together with the needs of specialized workforce of today's society.
- Promoting excellence in the processes of scientific research, development, innovation, and knowledge transfer to the Romanian society, thus responding to the need to progress.

Recommendations: No recommendations
The indicator is fulfilled.

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

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that doctoral students benefit from counseling / guidance throughout the doctoral studies in Engineering and Management. The supervising commissions for the evaluated field are presented in Annex 41-00- 2-10 related to Supervision commission. Depending on the issues they face, doctoral students have on-site discussions and, in the last period because of the extraordinary situation caused by the COVID-19 pandemic, on-line through email correspondence or on Microsoft Teams.

Recommendations: No recommendations
The indicator is fulfilled.

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

[4] 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.

Referring to the assessed documents and the meetings/discussions held during the evaluation visit, it is ascertained that the counseling / guidance of the doctoral students is provided by 4 professors / researchers: Prof.habil. eng. Liviu Moldovan, PhD, Prof. habil. eng. Petruta Blaga, PhD, Prof. habil. Manuela Rozalia Gabor, PhD, Assoc.prof. eng. Emil Nutiu, PhD. The enrolled eight doctoral students during the academic years 2018-2019 and 2019-2020, benefited from the supervision provided by these professors / researchers. The ratio between the number of doctoral students and the number of teachers / researchers providing supervision is 2:1 and does not exceed 3:1 ratio.

Recommendations: The ratio is satisfactory for the accreditation period only. As in the other academic years 2020-2021, 2021-2022 there have been enrolled new students, the doctoral study domain may need to hire new teaching staff/researchers to provide the necessary doctoral guidance for the students.

The indicator is fulfilled.

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

The analysis of this criterion focuses on evaluating the standards fulfillment by the Institution related to:

- Doctoral students` capitalization on the research through presentations at scientific conferences, scientific publications, technological transfer, patents, products and service orders.
- The Doctoral School`s engagement on a significant number of external scientific specialists in the commissions for public defense of doctoral theses in the analyzed domain.

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

This standard analysis focuses on evaluating the performance indicators fulfillment related to:

- At least 3 selected papers from doctoral students who has obtained a doctor's title within the past 5 years must contain significant original contributions in the respective domain.
- 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.

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

This performance indicator is not applicable for the doctoral domain in Engineering and Management because the first admission competition was organized in the 2018-2019 academic year and there are no doctoral students who completed their doctoral studies in the evaluated period, in the last 5 years.

Recommendations: No recommendations
The indicator is not applicable.

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

This performance indicator is not applicable for the doctoral domain in Engineering and Management because the first admission competition was organized in the 2018-2019 academic year and there are no doctoral students who completed their doctoral studies in the evaluated period, in the last 5 years.

Recommendations: No recommendations
The indicator is not applicable.

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.

This standard analysis focuses on evaluating the performance indicators fulfillment related to:

- The number of doctoral theses allocated to one specialist coming from a higher education institution, other than the evaluated IOSUD.
- 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.

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.*

This performance indicator is not applicable for the doctoral domain in Engineering and Management because the first admission competition was organized in the 2018-2019 academic year and there are no doctoral students who completed their doctoral studies in the evaluated period, in the last 5 years.

Recommendations: No recommendations
The indicator is not applicable.

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.*

This performance indicator is not applicable for the doctoral domain in Engineering and Management because the first admission competition was organized in the 2018-2019 academic year and there are no doctoral students who completed their doctoral studies in the evaluated period, in the last 5 years.

Recommendations: No recommendations
The indicator is not applicable.

Domain C. QUALITY MANAGEMENT

The analysis of this domain on Quality Management focuses on evaluating the fulfillment by the Institution of the criterions related to:

- Existence and periodic implementation of the internal quality assurance system
- Transparency of information and accessibility of learning resources
- Internationalization

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

The analysis of this criterion focuses on evaluating the standards fulfillment by the Institution related to the existence of an institutional framework and procedures in place and relevant internal quality assurance policies, applied for monitoring the internal quality assurance.

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.

This standard analysis focuses on evaluating the performance indicators fulfillment related to:

- The Doctoral school 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.
- 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.

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:*

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that IOSUD is integrated, together with the Doctoral Schools, in the quality management system (QMS) implemented within the UMPhST G.E. Palade Tg. Mureş and certified according to SR EN ISO 9001: 2015. To ensure quality, IOSUD has establishes general objectives which correlate with the specific objectives formulated at the level of the compartments integrated in the QMS. The specific objectives are set, monitored, evaluated, and analyzed to ensure continuous improvement. The quality policy, together with the general objectives in the field of quality, are accessible to all members of the academic community, the information being posted on the institutional website: https://www.umfst.ro/universitate/managementul- calitatii/ obiective-generale - si-concepte.html.

In order to monitor and evaluate the established quality requirements within the Doctoral Schools, the activities for which a documented description through own regulations and operational procedures required are identified as below:

https://www.umfst.ro/doctorat/legislatie/regulamente.html
https://www.umfst.ro/doctorat/legislatie/metodologii.html
https://www.umfst.ro/doctorat/legislatie/proceduri.html
https://www.umfst.ro/fileadmin/documente_oficiale/regulamente/UMFST-REG-09.pdf
https://www.umfst.ro/fileadmin/documente_oficiale/regulamente/MC.pdf

The elaborated regulations and procedures are constantly monitored by the IOSUD management. All documents are updated according to specific internal changes, external, legislative, or regulatory ones. The IOSUD management collaborates with the Quality Assurance Department to keep under control and permanently update these documents.

The fulfillment of the quality requirements and the identification of the needs for improvement within the Doctoral Schools is done periodically, through scheduled internal audits. The audits are carried out according to the specific system procedure (UMFST-PS-02-Internal audits). Each quality audit, carried out within the Doctoral Schools, ended with an audit report, which recorded the level of compliance with the quality requirements of the audited processes, the aspects of improvement found compared to the previous audit, and aspects that needed improvement, for which appropriate recommendations have been made. In the last 5 years at the level of SOLS no non-conformities were identified, and the formulated recommendations were analyzed by the management at IOSUD level and were solved until the next audit and documented by monitored measures.

The continuous development of the evaluation process and its internal quality assurance following a procedure developed and applied at the level of the IOSUD, for the following assessed criteria is evidenced as below:

(a) the scientific work of Doctoral advisors;

Nr. crt.	Scientific supervisor	PhD student	The topic of the doctoral thesis	Year of registration	Date of public support	Center / research laboratory

Institutional regulation for the organization and conduct of doctoral studies, UMFST-REG-06UMFST-REG-06, Institutional regulation for the organization and conduct of doctoral studies UPM: Annex 41-00-04
Evaluation report of Doctoral advisors: Annex 41-00-17

(b) the infrastructure and logistics necessary to carry out the research activity;
Organization chart of the Research Center in Quality Engineering and Digital Manufacturing: Annex 41-00-2-08
In the table below are reported the Topics of Research/ Thesis Titles of PhD Students linked to Advisor Name and Laboratories in use

1	**Prof. univ. dr.ing. Liviu Moldovan**	Chila (Havadtői) K.S. Cristina	Evaluation of the performances of the organizations in the electrical and electrotechnical profile industry as a result of the application of the total quality management	2018		**Laborator Hirschmann A 207**
2	”	Chiș L. Liviu - Cristian	Applying quality management in preserving exoskeletons	2019		**Laborator Managementul calității A 309**
3	”	Farcaș F. Diana Maria	Contributions and research on traceability in the dairy industry	2020		**Laborator Chimie A 105**
4	”	Nagy-Bota Ș.C. Ștefan	Improving the quality management of supply-sales processes in the production of mineral fertilizers through sustainable logistics and intelligent and digital management solutions	2020		**Laborator Managementul calității A 309**
5	**Prof. univ. dr. Manuela - Rozalia Gabor**	Legman I. Ioan - David	Quality management of tourist services is an essential component in the hospitality industry	2018	28.07.2021	**Laborator Managementul calității A 309**
6	"	Pavalascu O.Al. Narcis-Sebastian	Insurance damage management generated by catastrophic risks in Romania	2018		**Laborator Hirschmann A 207**
7	"	Bacoș D.T. Ioan - Bogdan	Air quality and its influence in the tourism industry	2020		**Laborator Ingineria mediului A209**
8	"	Bîrlean D. Oana - Bianca	Implications and adaptations of the application of quality management in the management of human resources in the field of health compared to the industrial field	2020		**Laborator Managementul calității A 309**
9	"	Cândea S. Sebastian	Efficiency of the management system specific to the automotive industry	2020		**Laborator Bosch A 208**
10	"	Coca V. Andrei	Innovation management and technology transfer with applications for mountain economy	2020		**Laborator Azomureș A 214**
11	"	Dâmbean V. Camelia - Angelica	Psychological constructs involved in human resource management in industry (emotional intelligence)	2020		**Laborator Hirschmann A 207**
12	"	Pop R.D. Oana - Bianca	Product and process change management and performance impact analysis	2020		**Laborator Bosch A 208**

13	**Prof.univ.dr. ing. Petruța Blaga**	Pescariu (Nilca) St. Ștefania - Diana	Research on quality and human resource management in order to increase road safety in transport	2019		**Laborator Ingineria mediului A209**
14	"	Moldovan L. Flaviu	Research and contributions on quality improvement and sustainable development in health facilities	2020		**Laborator Managementul calității A 309**

(c) the procedures and subsequent rules based on which doctoral studies are organized;

Regulation of Organization and Functioning of Doctoral Schools under the I.O.S.U.D.: https://www.umfst.ro/fileadmin/documente_oficiale/regulamente/UMFST-REG-24.pdf

Operational Procedure: https://www.umfst.ro/fileadmin/documente_oficiale/proceduri/UMFST-PO-SDR-02.pdf

Admission Procedures: https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/admitere-la-doctorat/procedura-admitere.html

d) the scientific activity of doctoral students;

Publications of doctoral students

Article Type	Engineering and Management
ISI (main author)	-
ISI (coauthor)	-
ISI Proceedings papers cotate ISI	6
BDI (unique author)	1
BDI (coauthor)	-

Summary of the scientific activity is provided in the table above; meanwhile detailed information is provided below:

Proceedings papers ISI

1. **Legman, DI**; Gabor, MR. (2020). New Optimization Technique for Sustainable Manufacturing: The Implementation of the Spc Indicator (System of Evaluating Employee Performance Depending on Customer Satisfaction) as an Important Element of Satisfaction Measurement, Proceedings – MDPI, vol. 63, pp. 1-8, ISSN 2504-3900, https://doi.org/10.3390/proceedings2020063004, https://www.mdpi.com/2504-3900/63/1/4
2. **Păvălașcu, N**.; Gabor, MR. (2020). A Case Study on the Particularities and Sustainability of the Concepts of TQM, Quality Control, and Risk Management in the Corporate Insurance Industry: Loss and the Incidence of Catastrophic Risks, Proceedings – MDPI, vol. 63, pp. 1-8, ISSN 2504- 3900, https://doi.org/10.3390/proceedings2020063003, https://www.mdpi.com/2504-3900/63/1/3
3. **Chiș LC**, Copotoiu M, Moldovan L. Different Types of Exoskeletons can Improve the Life of Spinal Cord Injury's Patients–a Meta-Analysis. Procedia Manufacturing. 2020 Jan 1; 46:844-9.
4. **Havadtöi C**, Moldovan L. Diagnosis on Improving the Quality of the Wiring Product Using the Technical Level Method. Procedia Manufacturing. 2020 Jan 1;46:249-55.

5. **Havadtöi C.,** Innovation of Pull and Torque Testing Device for Cable Cords. In Multidisciplinary Digital Publishing Institute Proceedings 2020 (Vol. 63, No. 1, p. 28).

BDI

1. **Legman I.**, Blaga P.: *Six Sigma Method Important Element of Sustainability.* În: Acta Marisiensis, Seria Oeconomica, 2019, pag. 53-68, Online: ISSN 2668-3989, Print: ISSN 2668-3148
2. **Havadtöi C.**, Moldovan L., Sinthesis on Theories of Quality Management with Application in Wiring Industry. Acta Marisiensis. Seria Technologica. 2019;16(1):34-8.
3. Hodos RF, **Păvălașcu N**., Some aspects of arbitration as a way of settling insurance disputes. Institute of Financial Studies; 2019 May
4. **Coca A.,** Blaga P., *Gaps and Preliminary Perspectives Concerning Innovation Infrastructure in the Carpathian Countries*, Acta Marisiensis, Seria Oeconomica, volumul 1, 2020, pag. 41-60, Online: ISSN 2668-3989, Print: ISSN 2668-3148, http://oeconomica.umfst.ro/images/oeconomica2020/1.3_coca_blaga_corectat.pdf, http://oeconomica.umfst.ro/index.php?option=com_content&view=article&id=74&Itemid=92&lang=en
5. **Bacoș, I.B.,** Gabor, M.R. (2020). Consumers' Preferences of Winter Tourist Packages in Romania: A Quantitative Case Study. Annals of "Dunarea de Jos" University of Galati Fascicle I. Economics and Applied Informatics, vol. XXVI (3), pp. 157-164, ISSN 1584 - 0409, https://doi.org/10.35219/eai15840409149, http://www.eia.feaa.ugal.ro/images/eia/2020_3/Bacos_Gabor.pdf
6. **Legman, DI;** Gabor, M.R. (2020). Augmented Reality technology - a sustainable element for Industry 4.0. Acta Marisiensis. Seria Oeconomica, vol. 14(2), pp. 9-18, DOI: https://doi.org/10.2478/amso-2020-0008, https://sciendo.com/article/10.2478/amso-2020- 0008
7. **ID Legman**, Increase Company Sustainability by Improving Customer Satisfaction, Scientific Session of University Academic Staff 3, 121, 2020
8. **Păvălașcu, N.;** Gabor, M.R. (2020). Disaster risk management: management framework and technical process of settling disaster damage claims. Acta Marisiensis. Seria Oeconomica, vol 14(1), pp. 1-12, DOI: https://doi.org/10.2478/amso-2020-0001, https://sciendo.com/article/10.2478/amso2020-0001
9. **Bacoș, I.B.,** Gabor, M.R. (2021). Tourism economy. Mountain tourism: quantitative analysis of winter destinations in Romania, Economics, vol. 9(1), pp. 55-70, DOI: 10.2478/eoik-2021-0005, OIKOS Institute, Bosnia & Hertegovina, ISSN 2303-5005. SCOPUS
10. **Bacoș, I.B.,** Gabor, M.R. (2021). Air quality indices - case study: environmental sustainability pillar and Romania's positioning in the European and global context. Acta Marisiensis. Seria Technologica, Vol. 18 (XXXV), no. 1, 2021 ISSN 2668-4217, pp. 22-27, DOI: 10.2478/amset2021-0004, http://amset.umfst.ro/papers/2021-1/AMSET-2021-0004.pdf
11. Veres, C., **Candea, S.,** Gabor, M.R., Vasile, V. (2021). Lean tools to eliminate losses. Transposing automotive approach in other areas. Challenges of the knowledge society, vol. 1 (1), pp. 925- 931, http://cks.univnt.ro/articles/15.html

Attended conferences:

1. Inter – Eng 2020, RO, UMFST Tg. Mureș, https://intereng.umfst.ro/2020/files/technical-program/Brochure.pdf

2. Conferinta cadrelor UMFST Tg. Mures, dec 2020, https://zilele.umfst.ro/
3. Sesiunea doctoranzilor UMFST, dec. 2020, https://zilele.umfst.ro/page/aboutus/doctoral-school
4. 15th International Conference on Economics and Business, Sapientia Hungarian University of Transylvania, martie 2021, http://csik.sapientia.ro/ro/stiri/15th-international-conference-on-economics-andbusiness
5. Conferinta CKS - Challenges of the Knowledge Society București, mai 2021, http://cks.univnt.ro/cks_2021.html
6. Designing Coordinates of the Postcovid Economy - Global, Region and Local Level, mai 2021, OIKOS Institute, Bosnia & Hertegovina, http://oikosinstitut.org/ix-traditional-scientific-conference-on-the-subject-designingcoordinates-of-the-postcovid-economy-global-regional-and-local-level/
7. Risk in Contemporary Economy, iunie 2021, Universitatea Dunărea de Jos din Galați, http://www.rce.feaa.ugal.ro/images/stories/RCE2021/Conference_Program_Sections.pdf
8. 4th International Conference of the Doctoral School "Gheorghe Asachi" Technical University of Iasi, Excellence in Doctoral Studies through Innovation, Convergence and Interdisciplinarity, mai 2021, http://www.csd2021.tuiasi.ro/docs/CSD2021_Program_Detailed.pdf
9. Inter -Eng 2021, RO, UMFST Tg. Mureș

e) the training program based on advanced academic studies of doctoral students;
Individual plan of doctoral university studies: 41-00-2.3-06

f) social and academic services (including for participation *at different events, publishing papers etc.) and counselling made available to doctoral students.*
Report on the students whose fee is financed, Hot. CA- funds utilization: Annex 41-00-2-07

Recommendations: No recommendations
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.*

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that there are feedback mechanisms from doctoral students, that measure their degree of satisfaction with the doctoral study program. Satisfaction questionnaire is provided in Annex41-00-18.
The most recent Quality Audit Reports, recommendations provided, the Action Plan the Doctoral School has undertaken to solve them are provided in the Institution`s website as below:

- Activity report of the Quality Department for 2020 - https://www.umfst.ro/fileadmin/man_calit/2020/RDAC-2021-01_Raport_activitate_DAC__2020.pdf

- IOSUD Development Plan 2021-2021 - https://www.umfst.ro/fileadmin/doctorate/DocUtile/2021/Plan_de_dezvoltare_2021-2022.pdf

Recommendations: No recommendations
The indicator is fulfilled.

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

The analysis of this criterion focuses on evaluating the standards fulfillment by the Institution related to:

- Information of interest to doctoral students, future candidates and public interest information is available for electronic format consultation.
- The IOSUD/The Doctoral School provides doctoral students with access to the resources needed for conducting doctoral studies.

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

This standard analysis focuses on evaluating the performance indicators fulfillment related to publication on the website of the organizing institution by IOSUD, in compliance with the general regulations on data protection, information such as: the Doctoral School regulation; the admission regulation; the doctoral studies contract; the study completion regulation including the procedure for the public presentation of the thesis; the content of training program based on advanced academic studies; the academic and scientific profile, thematic areas/research themes of the Doctoral advisors within the domain, as well as their institutional contact data; the list of doctoral students within the domain with necessary information (year of registration; advisor); information on the standards for developing the doctoral thesis; links to the doctoral theses' summaries to be publicly presented and the date, time, place where they will be presented.

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:*

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that the information of interest to doctoral students is available in electronic format on the website of the Doctoral School of Letters, Humanities and Applied Sciences. The Doctoral School ensures the transparency of public interest information on the study programmes offered, on the website of UMPhST G.E. Palade Tg. Mureş as follows:

(a) the Doctoral School regulation;
https://www.umfst.ro/fileadmin/documente_oficiale/regulamente/UMFST-REG-06.pdf

https://www.umfst.ro/fileadmin/documente_oficiale/regulamente/UMFST-REG-24.pdf

(b) the admission regulation;
https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/admitere-la-doctorat/procedura-admitere.htm

(c) the doctoral studies contract;
https://www.umfst.ro/fileadmin/doctorate/SD_LSUA/2020-2021/2_Contract_SDLS_2020._Final.pdf

(d) the study completion regulation including the procedure for the public presentation of the thesis;
https://www.umfst.ro/fileadmin/documente_oficiale/proceduri/UMFST-PO-SDR-08.pdf
https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/elaborarea-tezei-de-doctorat.html
https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/studenti-doctoranzi/desfasurarea-studiilor-doctorale.html

(e) the content of training program based on advanced academic studies;
https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/studenti-doctoranzi/planuri-de-invatamant.html

(f) the academic and scientific profile, thematic areas/research themes of the Doctoral advisors within the domain, as well as their institutional contact data;
https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/conducatori-de-doctorat/profilul-stiintific-al-conducatorilor-de-doctorat.html

(g) the list of doctoral students within the domain with necessary information (year of registration; advisor);
https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/studenti-doctoranzi/lista-doctoranzilor/inmatriculati-2020.html

(h) information on the standards for developing the doctoral thesis;
https://www.umfst.ro/doctorat/scoala-doctorala-de-litere-stiinte-umaniste-si-aplicate/elaborarea-tezei-de-doctorat.html

(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.
https://www.umfst.ro/doctorat/sustineri-teze-de-doctorat.html

Recommendations: No recommendations
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.

This standard analysis focuses on evaluating the performance indicators fulfillment related to:

- All doctoral students have free access to one platform providing academic databases relevant to the doctoral studies domain of their thesis.
- 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.
- 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.

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.*

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that through the ANELIS PLUS consortium (Association of Universities, Research and Development Institutes and Central University Libraries in Romania), all doctoral students have access to the following electronic information and documentation resources (databases / fulltext platforms and bibliographic and bibliometric databases):

- ELSEVIER SCIENCE DIRECT,
- SPRINGERLINK,
- CLARIVATE ANALYTICS - WEB of KNOWLEDGE,
- ProQuest CENTRAL,
- SCOPUS,
- WILEY ONLINE LIBRARY
- CAMBRIDGE JOURNALS,
- NATURE RESEARCH.

Access is possible from the UMPhST G.E. Palade Tg. Mureş network: www.anelisplus.ro, by mobile access (from outside the institution), by account and password authentication: http://www.anelisplus.ro/?page_id=64

Recommendations: No recommendations
The indicator is fulfilled.

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

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that IOSUD promotes a pro-active attitude regarding the prevention and combating of fraud in science - defined as the deliberate action of making up, falsifying, plagiarizing or illicitly alienating the results of scientific research. Before the thesis defense, it is mandatory for all PhD theses to undergo an evaluation of the similarity percentage. Plagiarism prevention and anti-plagiarism verification of all IOSUD scientific productions is done in accordance with the UMPhST policy and is

regulated by the Anti-Plagiarism Regulation in Annex 41-00-12. Technically, this is done with the help of the Sistemantiplagiat.ro soft, approved and countersigned by the Ministry of Education and Research in 2016 https://sistemantiplagiat.ro/en/home-2/.

Recommendations: No recommendations
The indicator is fulfilled.

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

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that all doctoral students within UMPhST G.E. Palade Tg. Mureş have access to laboratories and research centers that have state-of-the-art equipment and have the possibility to carry out the research specific to their field.

Recommendations: No recommendations
The indicator is fulfilled.

Criterion C.3. Internationalization

The analysis of this criterion focuses on evaluating the standards fulfillment by the Institution related to the existence of a strategy in place and its application to enhance the internationalization of doctoral studies.

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

This standard analysis focuses on evaluating the performance indicators fulfillment related to:

- Mobility agreements concluded for the domain in Engineering and Management by IOSUD 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).
- 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 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.).

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.

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that there are international agreements with prestigious universities, partnerships, and affiliations to higher education associations, which carry out the extension of the forms of international cooperation, to increase the visibility and reputation of the involved universities. In this context, the strategy of the IOSUD focused on seeking international partners in both EU and non-EU countries. The University focuses its interest upon those higher education institutions with similar characteristics and with an investment in education, innovation and excellence that is attractive for the exchange of students, academic and research staff.

During the evaluation period (2018-2020) there are no ERASMUS mobilities of PhD students in Engineering and Management, although there are the following collaboration agreements with EU and Non-EU universities:
https://www.umfst.ro/fileadmin/relatii_internationale/erasmus_acorduri/2021/Faculty_of_Engineering_and_Information_Technology_-_Bilateral_Agreements_-_SMS.pdf

https://www.umfst.ro/fileadmin/relatii_internationale/erasmus_acorduri/2021/Faculty_of_Engineering_and_Information_Technology_-_Bilateral_Agreements_-_SMP.pdf:

1. Haute École Charlemagne, Liège https://www.hech.be/fr
2. Angel Kanchev University of Ruse, Ruse https://www.uni-ruse.bg/en
3. Sofia University St. Kliment Ohridski, Sofia https://www.uni-sofia.bg/eng
4. Palacký University Olomouc www.upol.cz/en/
5. CY Cergy Paris Universite https://www.u-cergy.fr/
6. Université Catholique de Lille, Lille https://www.univ-catholille.fr/
7. Université de Versailles-Saint-Quentin-en-Yvelines http://www.uvsq.fr
8. Université Paris Est Créteil Val de Marne, Paris https://www.u-pec.fr/
9. University of Piraeus, Piraeus https://www.unipi.gr/unipi/en/
10. Università degli Studi di Roma" La Sapienza", Rome https://www.uniroma1.it/
11. Università degli Studi di Perugia, Perugia https://www.unipg.it/
12. Università degli Studi di Cagliari, Cagliari https://www.unica.it/unica/
13. Università degli Studi della Tuscia, Viterbo http://www.unitus.it/
14. Universita degli Studi Roma Tre, Rome https://www.uniroma3.it/
15. Universita degli Studi di Genova https://unige. it/it/
16. Klaipeda University, Klaipeda https://www.ku.lt/
17. Goce Delcev University, Stip https://www.ugd. edu.mk/index.php/en/
18. Windesheim University of Applied Sciences, Zwolle https://www.windesheim.com/
19. Czestochowa University of Technology, Czestochowa https://www.pcz.pl/en/
20. Warsaw Management University, Warsaw http://www.wsm.warszawa.pl/en/
21. Adam Mickiewicz University, Poznan https://amu.edu.pl/en
22. Universidad de Cadiz, Cadiz https://www.uca.es/
23. Universidad de Malaga, Malaga https://www. uma.es/
24. Universidad de Castilla-La Mancha, Ciudad Real https://www.uclm.es/
25. Agri Ibrahim Cecen University, Merkez, Agri https://www.agri.edu.tr/

At university level, to increase the number of doctoral students that benefit from ERASMUS mobilities, the selection for their assignment is continuous, throughout the year. Forms of mobility such as participation in international scientific conferences, that offer attractive scientific programmes and which address topical themes, are an excellent opportunity for the doctoral students to collaborate, enjoy networking, broaden their scientific horizon and, a good opportunity to develop their communication skills within a scientific event.
As for the mobilities carried out by doctoral advisors, IOSUD also encourages the development of teacher mobility for teaching missions, academic development and scientific research in prestigious centers and research institutes. Doctoral advisors can perform these mobilities within the STA - Staff Teaching Assignment programmes as evidenced in Annex 41-00-2-03

Recommendations: Increasing the number of doctoral students participating at mobility periods abroad.
The indicator is partially fulfilled.

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

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that IOSUD supports the organization of international jointly supervised doctorates. Within the university, through the Administrative Board, it was established that four doctoral students admitted to tuition places, in international jointly supervised doctorates, benefit from the financing of the tuition fee by the University as evidenced in Annex 41-00-13.
The field Engineering and Management annually invites personalities of the scientific world to give lectures for the doctoral students:
In 2020:

- Prof. Dr. Mo Elbestawi, Ph.D., FCAE, FCIRP, FASME, FCSME, P. Eng. - McMaster W Booth School of Engineering Practice and Technology (SEPT), Canada - "Additive Manufacturing Driven Design a Key for Smart Industry Development"
- Prof. dr. habil. Laszlo Kovacs - University of Miskolc Hungary, - "Concept Lattice Structure in Data Mining"
- Prof. dr. eng. Abdelazim M. Negm, Zagazig U niversity, Zagazig, Egypt - "IoT-Based Smart Greenhouse Technology and Automated Indoor and Outdoor Irrigation Systems"

In 2019:

- Prof. dr. habil. Khalil Khalili, Department of Health Sciences and Technology, ETH Zurich, Switzerland - "Statistically3D Shaped Models for Mechanical Analysis" Prof.dr.habil. Birute Mikulskiene - Institute of Leadership and Strategic Planning of the Faculty of Public Governance in Mykolas Romeris University, Vilnius, Lithuania, "Customized manufacturing and pricing: seeking for participation based intelligent systems for Industry 4.0"
- Prof. dr. habil. Ladislau Matekovits, Department of Electronics and Telecommunications, Politecnico di Torino, Italy, "Smart Mantles for Advanced Electromagnetic Cloaking Applications"
- Prof. dr. eng. Alexandru Sover, Faculty of Engineering, Ansbach University of Applied Sciences, Germany- "Laser Technology in Plastic Recycling"

Recommendations: No recommendations
The indicator is fulfilled.

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

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that in 2017, the Doctoral School was represented at the fair of the European Association for International Education Conference EAIE 2017, Seville, Spain, and in 2018 at the European Association for International Education Conference - EAIE 2018, Geneva, Switzerland Annex 41-00-14.
Since 2015, IOSUD has become a member of the European Association of Universities EUA, within the Council for Doctoral Studies EUA-CDE. In 2018, IOSUD applied for the competition launched by EUA, to host within the UMPhST the event entitled: 12th EUA-CDE Thematic Workshop, an initiative that is an excellent opportunity to collaborate, learn and exchange information on the challenges encountered in doctoral education evidenced in Annex 41-00- 15.

Recommendations: Increase participation in educational fairs to attract international doctoral students and include international experts in guidance committees or doctoral committees.
The indicator is partially fulfilled.

IV. SWOT Analysis

Strengths:	**Weaknesses:**
-study domain leadership; -study domain staff dedication; -study domain staff quality; -modern and proper infrastructure; -reach library;	-low visibility of the study domain; -low internationalization; -non-enrolled students financed by state funds put out through contest; - no students participating at mobility periods abroad
Opportunities:	**Threats:**
- internationalization opportunities of the program through the institutional agreements; -enrolling students financed by state funds put out through contest	-low attractiveness of the study program; -low number of companies in the region; -non awareness of the region companies on developing new innovative ways of engineering

V. Overview of judgments awarded and of the recommendations

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
1.	**PI**	**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.	**Fulfilled**	
2.	**PI**	**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.	**Fulfilled**	
3.	**PI**	**A.1.2.1.** The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic background.	**Fulfilled**	
4.	**PI**	**A.1.2.2.** The existence and use of an appropriate software program and evidence of its use to verify the percentage of similarity in all doctoral theses.	**Fulfilled**	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
5.	**IP**	**A.1.3.1.** Existence of at least one research or institutional / human resources development grant under implementation at the time of submission of the internal evaluation file, per doctoral study domain under evaluation, or existence of at least 2 research or institutional development / human resources grant for the doctoral study domain, obtained by doctoral thesis advisors operating in the evaluated domain within the past 5 years. The grants address relevant themes for the respective domain and, as a rule, are engaging doctoral students.	**Fulfilled**	
6.	**PI ***	**A.1.3.2.** The percentage of doctoral students active at the time of the evaluation, who for at least six months receive additional funding sources besides government funding, through scholarships awarded by individual persons or by legal entities, or who are financially supported through research or institutional / human resources development grants is not less than 20%.	**Fulfilled**	
7.	**PI ***	**A.1.3.3.** At least 10% of the total amount of doctoral grants obtained by the university through institutional contracts and of tuition fees collected from the doctoral students enrolled in the paid tuition system is used to reimburse professional training expenses of doctoral students (attending conferences, summer schools, training, programs abroad, publication of specialty papers or other specific forms of dissemination etc.).	**Fulfilled**	
8.	**CPI**	**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	**Fulfilled**	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		presented distinctly		
9.	**CPI**	**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.	**Fulfilled**	
10.	**PI ***	**A.3.1.2.** At least 50% of all doctoral advisors have a full-time employment contract for an indefinite period with the IOSUD.	**Fulfilled**	
11.	**PI**	**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.	**Fulfilled**	
12.	**PI ***	**A.3.1.4.** The percentage of doctoral thesis advisors who concomitantly coordinate more than 8 doctoral students, but no more than 12, who are themselves studying in doctoral programs does not exceed 20%.	**Fulfilled**	
13.	**CPI**	**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;	**Fulfilled**	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		membership on boards of international professional associations; guests in conferences or expert groups working abroad, or membership on doctoral defense commissions at universities abroad or co-leading with universities abroad. For Arts and Sports and Physical Education Sciences, doctoral thesis advisors shall prove their international visibility within the past five years by their membership on the boards of professional associations, membership in organizing committees of arts events and international competitions, membership on juries or umpire teams in artistic events or international competitions.		
14.	**PI ***	**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	**Fulfilled**	
15.	**PI ***	**B.1.1.1.** The ratio between the number of graduates of masters' programs of other higher education institutions, national or foreign, who have enrolled for the doctoral admission contest within the past five years and the number of seats funded by the state budget, put out through contest within the doctoral domain is at least 0.2 or the ratio between the number of candidates within the past five years and the number of seats funded by the state budget put out through contest within the doctoral studies domain is at least 1,2.	**Not Fulfilled**	**Enrolling students financed by state funds put out through contest**
16.	**PI ***	**B.1.2.1.** Admission to doctoral study programs is based on selection criteria including: previous academic, research and professional performance, their interest for scientific or arts/sports research, publications in the domain and a proposal for a research subject. Interviewing the candidate is compulsory, as part of the admission procedure.	**Fulfilled**	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
17.	**PI**	**B.1.2.2.** The expelling rate, including renouncement / dropping out of doctoral students 3, respectively 4, years after admission does not exceed 30%.	**Fulfilled**	
18.	**PI**	**B.2.1.1.** The training program based on advanced academic studies includes at least 3 disciplines relevant to the scientific research training of doctoral students; at least one of these disciplines is intended to study in-depth the research methodology and/or the statistical data processing.	**Fulfilled**	
19.	**PI**	**B.2.1.2.** At least one discipline is dedicated to Ethics and Intellectual Property in scientific research or there are well-defined topics on these subjects within a discipline taught in the doctoral program.	**Fulfilled**	
20.	**PI**	**B.2.1.3.** The IOSUD has mechanisms to ensure that the academic training program based on advanced university studies addresses „the learning outcomes", specifying the knowledge, skills, responsibility and autonomy that doctoral students should acquire after completing each discipline or through the research activities.	**Fulfilled**	
21.	**PI**	**B.2.1.4.** All along the duration of the doctoral training, doctoral students in the domain receive counselling/guidance from functional guidance commissions, which is reflected in written guidance and feedback or regular meeting.	**Fulfilled**	
22.	**CPI**	**B.2.1.5**. For a doctoral study domain, the ratio between the number of doctoral students and the number of teaching staff/researchers providing doctoral guidance must not exceed 3:1.	**Fulfilled**	**The ratio is satisfactory for the accreditation period only. As in the other academic years 2020-2021, 2021-2022 there have been enrolled new students, the doctoral study domain may need to hire new teaching staff/researchers to provide the necessary doctoral guidance for the students.**
23.	**CPI**	**B.3.1.1.** For the evaluated domain, the evaluation commission will be provided with at least one paper or some other relevant	**NA**	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		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		
24.	**PI ***	**B.3.1.2.** The ratio between the number of presentations of doctoral students who completed their doctoral studies within the evaluated period (past 5 years), including posters, exhibitions made at prestigious international events (organized in the country or abroad) and the number of doctoral students who have completed their doctoral studies within the evaluated period (past 5 years) is at least 1.	**NA**	
25.	**PI ***	**B.3.2.1.** The number of doctoral theses allocated to one specialist coming from a higher education institution, other than the evaluated IOSUD should not exceed two (2) in a year for the theses coordinated by the same doctoral thesis advisor.	**NA**	
26.	**PI ***	**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.	**NA**	
27.	**PI**	**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	**Fulfilled**	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
		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.		
28.	**PI ***	**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.	**Fulfilled**	
29.	**CPI**	**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.	**Fulfilled**	

No.	Type of indicator (PI, PI *, CPI)	Performance indicator	Judgment	Recommendations
30.	**PI**	**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.	**Fulfilled**	
31.	**PI**	**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.	**Fulfilled**	
32.	**PI**	**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.	**Fulfilled**	
33.	**PI ***	**C.3.1.1.** IOSUD, for every evaluated domain, has concluded mobility agreements with universities abroad, with research institutes, with companies working in the field of study, aimed at the mobility of doctoral students and academic staff (e.g., ERASMUS agreements for the doctoral studies). At least 35% of the doctoral students have completed a training course abroad or other mobility forms such as attending international scientific conferences. IOSUD drafts and applies policies and measures aiming at increasing the number of doctoral students participating at mobility periods abroad, up to at least 20%, which is the target at the level of the European Higher Education Area.	**Partially Fulfilled**	**Increasing the number of doctoral students participating at mobility periods abroad.**
34.	**PI**	**C.3.1.2.** In the evaluated doctoral study domain, support is granted, including financial support, to the organization of doctoral studies in international co-tutelage or invitation of leading experts to deliver courses/lectures for doctoral students.	**Fulfilled**	
35.	**PI**	**C.3.1.3.** The internationalization of activities carried out during the doctoral studies is supported by IOSUD through concrete measures (e.g., by participating in educational fairs to attract international doctoral students; by including international experts in guidance committees or doctoral committees etc.).	**Partially Fulfilled**	**Increase participation in educational fairs to attract international doctoral students and include international experts in guidance committees or doctoral committees.**

VI. Conclusions and general recommendations

The doctoral university studies are organized by IOSUD within UMPhST G.E. Palade Tg. Mureş in accordance with the National Education Law No 1/2011, Government Decision No 681/2011 on the approval of the Code of doctoral studies and the Institutional Regulation for the organization and development of doctoral studies. The doctoral study domain in Engineering and Management was established in 2018. The evolution of the number of enrolled doctoral students reflects a constant growth with 4 students enrolled in the academic year 2018-2019 and 4 students in 2019-2020, meanwhile there are not yet graduated any of the enrolled students. In this study domain there are three doctoral advisors who at the same time have a full-time employment contract for an indefinite period with the IOSUD.

Referring to the assessed Institution`s documents and the meetings/discussions held during the evaluation visit, it is ascertained that:

- in order to support the successful development of teaching and research activities of this doctoral field IOSUD has the adequate:
- administrative, managerial institutional structures and the financial resources related to:
    - the implementation of an effective functioning mechanisms provided for in the specific legislation on the organization of doctoral studies,
    - the possession of logistical resources necessary to carry out the doctoral studies' mission,
    - optimal usage of financial resources.
- research infrastructure referring to:
    - the venues and the material equipment available to enable the research activities in the domain.
- quality of human resources such as:
    - sufficient qualified staff to ensure the conduct of doctoral study program,
    - visible scientific activity at international level carried by the doctoral advisors.
- content of doctoral programs attributing to:
    - a training program based on advanced academic studies,
    - mechanisms to ensure that the academic training program is based on advanced university studies addressing „the learning outcomes", specifying the knowledge, skills, responsibility, and autonomy that doctoral students should acquire after completing each discipline or through the research activities,
    - providing necessary counselling/guidance from functional guidance commissions to doctoral students all along the duration of the doctoral training,
- periodic implementation of the internal quality assurance system related to:
    - a continuous development of the evaluation process and its internal quality assurance following a procedure developed and applied at the level of the IOSUD,
    - implemented mechanisms to enable feedback from doctoral students allowing to identify their needs, as well as their overall level of satisfaction with the doctoral study program,
- transparency of information and accessibility of learning resources referring to:
    - availability in electronic format consultation on information of interest to doctoral students, future candidates, and public interest,
    - access to the resources needed for conducting doctoral studies to students.

However, there are evidenced needs of improvement related to:

(i) the number, quality and diversity of candidates enrolled for the admission contest.
(ii) Internationalization.

To overcome these weaknesses, it is recommended to the study program to:

(i) promote the program to be able to enroll students financed by state funds put out through contest
(ii) Increasing the number of doctoral students participating at mobility periods abroad.
(iii) Increase participation in educational fairs to attract international doctoral students as well as include international experts in guidance committees or doctoral committees.

VII. Annexes

- *Annex 1: The detailed schedule of the evaluation visit.*
- *Annex 2: – Supportive evidence 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.*