

The External Evaluation Report of Doctoral Study Domain  
MATERIALS ENGINEERING

**„DUNĂREA DE JOS“ UNIVERSITY OF GALATI – ROMANIA**

**by**

**The international Expert**

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## **I. Introduction**

This external evaluation report was drafted in the the context of the external evaluation of Doctoral Study Domain MATERIALS ENGINEERING at „DUNĂREA DE JOS“ UNIVERSITY OF GALATI – ROMANIA.

Instead of physical visit, the on-line meetings organized by ARACIS-host university, were taking place, live discussions, as well as questions-answers (Q-A) in verbal and written form.

The evaluation period was 12-16 July 2021, according to the timetable (in the Annexes) of the institutional visit IOSUD-Doctoral Study Domains at the doctoral study domain of MATERIALS ENGINEERING at „DUNĂREA DE JOS“ UNIVERSITY OF GALATI – ROMANIA.

The a.m. university has 15 different faculties, but doctoral study domain of MATERIALS ENGINEERING is organized by School for Doctoral Studies in Fundamental and Engineering Sciences, having now at the a.m. doctoral study domain 4 (four) professors as the doctoral advisers, and 9 (nine) doctoral students.

„DUNĂREA DE JOS“ UNIVERSITY OF GALATI – ROMANIA was established more than 70 years ago, belonging now to a group of well established Romanian-EU universities and accordingly is Faculty of Engineering, having a sort of good cooperation with steel and the other industries in the region around GALAȚI, as well as solid academic background.

## **II. Methods used**

- Reading and analysing of the internal evaluation report of the doctoral study domain MATERIALS ENGINEERING with its annexes.
- Reading and analysing of the documents like CODE OF ETHICS AND RULES ... then NATIONAL EDUCATION LAW no1/2011 etc.
- Reading and analysing of the documents, data and information available on „DUNĂREA DE JOS“ UNIVERSITY OF GALATI – Faculty of Engineering website.
- Discussing during on-line meetings with the doctoral advisers and doctoral students, as well as sending additional questionnaires to both of these groups in the doctoral study domain MATERIALS ENGINEERING.

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

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

„DUNĂREA DE JOS“ UNIVERSITY OF GALATI – ROMANIA was established more than 70 years ago, belonging now to a group of well established Romanian-EU universities and accordingly is Faculty of Engineering, having a sort of good cooperation with steel and the other industries in the region around GALAȚI, as well as solid academic background.

There are 4 schools for doctoral studies, covering 16 different fields of study including MATERIALS ENGINEERING, which is a part of the School for Doctoral Studies in Fundamental and Engineering Sciences.

My impression is that the mission of doctoral studies MATERIAL ENGINEERING is well defined and realized, as well as their objectives, comprising that the number of 4 (competitive) doctoral advisers is satisfactory, namely good enough for a number of the doctoral students.

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

„DUNĂREA DE JOS“ UNIVERSITY OF GALATI is HE institution organizing doctoral studies (IOSUD) starting with 1990s in several branches, comprising now 16 doctoral fields.

Starting with 2012, there were organized 2 schools for doctoral studies (Engineering and Socio-human sciences), but having from 2017/2018 total of 4 schools for doctoral studies, covering 16 different fields of study including MATERIALS ENGINEERING, which is a part of the School for Doctoral Studies in Fundamental and Engineering Sciences.

IOSUD has implemented the effective functioning mechanisms, along with a legal framework, for the organization of the doctoral studies, and my impression about it is very good.

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.

The existing 4 Doctoral Schools and 16 doctoral fields are well established and about an optimum for the size of the University, from both scientific and legal framework aspects.

**Performance Indicator A.1.1.1.** The existence of specific regulations and their application at the level of the School for Doctoral Studies in Fundamental and Engineering Sciences at MATERIALS ENGINEERING study domain

- a) The internal regulations of the School for Doctoral Studies in Fundamental and Engineering Sciences are well established.
- b) The Methodology for conducting the elections for the position of director of the Council of the School for Doctoral (CSD) Studies in Fundamental and Engineering Sciences, as well as the elections by the students of their representative in CSD and the evidence of their conduct are well defined and realized.

c) The Methodologies for organizing and conducting doctoral studies (for the admission of doctoral students, for the completion of doctoral studies) are also well defined and realized.

d) The existence of mechanisms for recognizing the status of a Doctoral advisor and the equivalence of the doctoral degree obtained abroad are both well defined and some doctoral students already had a cooperation with the universities from Portugal, Germany and Italy.

e) Functional management structures (Council of the School for Doctoral Studies in Fundamental and Engineering Sciences), give as well a proof of the regularity of meetings and the other important events at School level, as well as at the domain MATERIALS ENGINEERING level.

f) The contract for doctoral studies at the School for Doctoral Studies in Fundamental and Engineering Sciences – MATERIALS ENGINEERING is to be signed for each and every doctoral student.

g) The internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs at the domain MATERIALS ENGINEERING are based on advanced academic studies.

- some facts and the findings from the domain MATERIALS ENGINEERING's documents confirm that (see the Annexe to this report), and the evaluation "visit" through on-line sessions also confirm that.

- The number of the doctoral advisers and doctoral students is about an optimum. Doctoral students are very well satisfied by their doctoral advisers, as well as with the library and lab recourses, even with a variety of sport activities and grounds offered.

*Recommendations: Increase the number of foreign doctoral students, enhance English capabilities of the doctoral advisers, search in advance for new doctoral advisers (since 2 of the existing ones are contracted retirees), get a new plastometer for the lab.*

**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 (for any doctoral school and for the School for Doctoral Studies in Fundamental and Engineering Sciences as well).

- Mandatory criteria are met and fulfilled. The procedures and standards binding to the aspects specified in the a.m. legal framework are also met and fulfilled.

- „DUNĂREA DE JOS“ UNIVERSITY OF GALATI is HE institution having an academic tradition more than 70 years, organizing doctoral studies (IOSUD) starting with 1990s in several branches, comprising now 16 doctoral fields, and is well established HE institution, as well School for Doctoral Studies in Fundamental and Engineering Sciences, as well as the doctoral study MATERIALS ENGINEERING. Along with that fact there are many cooperation fields and projects with EU-HE institutions and it has a sort of beneficial influence on its quality performances.

*Recommendations: Increase the number of common reserch projects with HE institutions abroad, according to your requirements and specific interest of the doctoral instuctors and students. Enhance promotion of the best doctoral students and their (eventual) patents.*

**The indicator is fulfilled.**

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

An general „DUNĂREA DE JOS“ UNIVERSITY OF GALAȚI is well established HE institution, as well as the doctoral study MATERIALS ENGINEERING. It has the logistical resources necessary to carry out the doctoral studies' mission.

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

- Yes, there is an appropriate IT system to keep track of doctoral students and their academic background (see the Annexe to this report).

- the a.m. IT system is for a time being good enough and it is needed just to follow EU development trends in this field, as well as regarding the legal framework.

*Recommendations: It is needed just to follow EU development trends in the universities IT field, as well as regarding the legal framework.*

**The indicator is fulfilled.**

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

- Yes, there is a software for the antiplagiarism and it is accordingly applied to all doctoral theses. There were also the discussions about this topic during on-line sessions and the replies from the host side, as well as the documentation, and all of them were satisfactory.

*Recommendations: It would be advisable to enhance CODE OF ETHICS in the reality at the University and maybe to use several more softwares for the antiplagiarism.*

**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.

Yes. My impression is that The IOSUD (not only for MATERIALS ENGINEERING) makes sure that financial resources are used optimally, and the revenues obtained from doctoral studies are supplemented through additional funding, besides governmental funding.



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

- Yes. The facts are presented in the Annexe of this report and cooperation projects with the universities in Portugal, Germany and Italy are very good for the reputation and for the future improvements of Doctoral Domain MATERIALS ENGINEERING, as well for the other doctoral studies. It would be very good if domestic doctoral supervisors or students are the leading researchers in these projects in a future.

*Recommendations: It would be very good if doctoral advisers or students are the leading researchers in these foreign cooperation projects or at least to cooperate with EU-world leading universities-scientists in a future.*

**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%.

- There were 26 doctoral students at Doctoral Domain MATERIALS ENGINEERING in the period 2016-2020, of whom 11 of them completed their studies and only 1 interrupted the studies. About 16% of them were financially supported for at least 6 months through research grants or an institutional development.

*Recommendations: It would be advisable to motivate and guide the students for stronger cooperation in the projects with local-foreign industries and to apply for local-international research projects.*

**The indicator is partially fulfilled.**

**Performance Indicator \*A.1.3.3.<sup>1</sup>** At least 10% of the total amount of doctoral grants obtained by the university through institutional contracts and of tuition fees collected from the doctoral students enrolled in the paid tuition system is used to reimburse professional training expenses of doctoral students (attending conferences, summer schools, training, programs abroad, publication of specialty papers or other specific forms of dissemination etc.).

Yes. It is approximately at least 10%.

*Recommendations: It would be advisable to enhance and guide the students for stronger participation in projects announced at-with local-foreign industries and to apply for local-international research projects.*

**The indicator is partially fulfilled.**

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

There are many annexes mentioned in THE INTERNAL EVALUATION REPORT for MATERIALS ENGINEERING doctoral study (page 27-29), which confirm that the research infrastructure is good enough to support carrying out the activities at that doctoral domain.

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

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

It would be better to express that it is a sort of solid research infrastructure, which should be re-evaluated and innovated soon (in the next 2-5 years).

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

- There are many annexes mentioned in THE INTERNAL EVALUATION REPORT for MATERIALS ENGINEERING doctoral study (page 27-29), which confirm that the research infrastructure is good enough to support carrying out the activities at that doctoral domain. Majority of the specified equipment is a sort of solid one, and is adequate to carry out research activities at that doctoral domain, but there is one obsolete item (like the plastometer), which should be replaced with a new one.

*Recommendations: Perform a sort of precise re-evaluation of the equipment and make a plan to purchase new items, according to the priorities defined by doctoral advisers from MATERIALS ENGINEERING.*

**The indicator is partially fulfilled.**

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

There are sufficient qualified staff to ensure the conduct of doctoral study program, but it is now a time to plan for new ones, since 2 of doctoral supervisors at MATERIALS ENGINEERING are contracted retirees.

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

Since I am concerned with MATERIALS ENGINEERING doctoral study there are 4 of them-doctoral advisers (specified at page 7 in THE INTERNAL EVALUATION REPORT for MATERIALS ENGINEERING doctoral study), and they are sufficient to carry out that doctoral study program.

**Performance Indicator A.3.1.1.** Minimum three doctoral thesis advisers 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.

At MATERIALS ENGINEERING doctoral study there are 4 doctoral supervisors (specified at page 7 in THE INTERNAL EVALUATION REPORT for MATERIALS ENGINEERING doctoral study), and they are sufficient to carry out that doctoral study program, as well they are high profile professors (some of their references are in the Annexe of this report), and doctoral students appreciate them very high.

*Recommendations: Enhance English capability of the doctoral supervisors.*

**The indicator is fulfilled.**

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

- Yes. It is in reality like prescribed in the a.m. performance indicator and on top of it, doctoral advisers are with proven expertise and very highly appreciated by doctoral students.

*Recommendations: Follow doctoral advisers age and plan on time to get new ones, especially because 2 of them are contracted retirees.*

**The indicator is fulfilled.**

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

- Yes. It is in reality like prescribed in the a.m. performance indicator. It is a part of well established University and well defined content by the national Law of HE.

*Recommendations: Regular self-evaluating and QA measures enhancing, and cooperating especially with EU-world leading universities-scientists in a future.*

**The indicator is fulfilled.**

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

Yes, it is in reality like prescribed in the a.m. Standard and is presented in the Annexe of this report.

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

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<sup>2</sup> 3 years for the doctoral university studies with the duration stipulated at Article 159, paragraph (3), respectively 4 years for the doctoral university studies with the duration stipulated at Article 174, paragraph (3) of the Law of national education No.1/2011 with subsequent amendments and additions, with additional extension periods approved as per Article 39, paragraph (3) of the Code of doctoral studies approved by the GD No. 681/2011 with subsequent amendments and additions.

- Yes. It is in reality like prescribed in the a.m. performance indicator and besides that, these doctoral advisors carry out scientific activities, which are visible internationally (documented in the Annexe of this report).

*Recommendations: Regular self-evaluating and QA measures enhancing.*

**The indicator is fulfilled.**

**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.

- It is in reality only approximately like prescribed in the a.m. performance indicator and besides that, these doctoral advisors carry out scientific activities, which are visible internationally, although they are not all at the same (high) level.

*Recommendations: Regular self-evaluating and QA measures enhancing, along with more and more participation in the international research projects.*

**The indicator is partially 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.

- In the average, all doctoral advisers accomplish about 25% of the score required CNATDCU minimum standards in the last 5 years (2016-2020).

*Recommendations: Regular self-evaluating and QA measures enhancing, along with more and more participation in the international research projects (for both, doctoral advisers and students).*

**The indicator is partially fulfilled.**

## **Domain B. EDUCATIONAL EFFECTIVENESS**

„DUNĂREA DE JOS“ UNIVERSITY OF GALAȚI is well established HE institution, as well as the doctoral study MATERIALS ENGINEERING. That is why in the last 5 years the number of seats financed from the state budget corresponding to the number of candidates, is in a competition with approximately 1.2 points.

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

Since there is a competition to get state financed seat for doctoral study MATERIALS ENGINEERING, that is a positive signal, regarding the quality and educational effectiveness, for both sort of candidates, from the other Romanian universities, or from abroad.

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.

Yes. Doctoral study MATERIALS ENGINEERING at „DUNĂREA DE JOS“ UNIVERSITY OF GALATI has the capacity to attract candidates from outside the higher education institution and a number of candidates exceeding the number of seats available.

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

- Yes. It is fulfilled like prescribed in the a.m. Indicator and the number of seats financed from state budget within SD-SFI is 0,48 (page 31 of The INTERNAL EVALUATION REPORT).

*Recommendations: Enhance and promote the advantages of getting a good job for the students, as well the international research projects (for both, doctoral advisers and students), to get more foreign students.*

**The indicator is fulfilled.**

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

Yes, it is like prescribed in the a.m. Standard and the candidates are approximately within the rates good-very good-excellent.

**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 research, publications in the domain and a proposal for a research subject. Interviewing the candidate is compulsory, as part of the admission procedure.

- Yes, the situation is like prescribed in the a.m. Indicator and the candidates are approximately within the rates good-very good-excellent.
- It is not easy to get good-very good-excellent candidates, because of general decreasing trend in elementary and high education, but the variety of preconditions is obviously very usefull.

*Recommendations: Increase the variety of preconditions for the admission at doctoral study.*

**The indicator is fulfilled.**

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

- Doctoral students dropout rate, 3 to 4 years after the admission is less than 30% and these are the findings from the assessed institution's documents and the evaluation visit itself.
- Good doctoral advisors performance and overall organization, including the infrastructure of MATERIALS ENGINEERING doctoral study contribute to that.

*Recommendations: Increase a sort of pedagogical interaction between doctoral advisers and students.*

**The indicator is fulfilled.**

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

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

That content is well designed and performed in practice.

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.

Yes, it is like prescribed in the a.m. Standard

**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.

- Yes, it is like prescribed in the a.m. Indicator and my impression is that both sides, doctoral students and adviser are satisfied.
- That program is appropriate to develop-improve research skills and science ethical behaviour of the doctoral students.

*Recommendations: Increase a sort of pedagogical interaction between doctoral advisers and students.*

**The indicator is fulfilled.**

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

- Yes, it is like prescribed in the a.m. Indicator and my impression is that doctoral students are satisfied about it..
- Doctoral students are included at IPR, namely patent protection activities, what is visible in the Annexe of this report

*Recommendations: Include both disciplines (Ethics and Intellectual Property) and students will be more prepared for scientific break-throughs.*

**The indicator is fulfilled.**

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

- Yes, the situation is like prescribed in the a.m. Indicator and after getting PhD, the candidates usually get even a better job.
- It is documented in (students replies) the Annexe of this report

*Recommendations: Make a sort of stronger and regular relations with the alumni and use their practical experience and advises.*

**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.

- Yes, the situation is like prescribed in the a.m. Indicator and doctoral students benefit during their entire stage of doctoral preparation from their advisers advices, guidance and supervision.
- Doctoral students benefit as well through mutual publications, what is pointed out on the page 33 of The INTERNAL EVALUATION REPORT.

*Recommendations: Increase a sort of pedagogical interaction between doctoral advisers and students.*

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<sup>4</sup> Or by what the graduate should know, understand and to be able to do, according to the provisions of the Methodology of 17 March 2017 regarding inscription and registration of higher education qualifications in the National Register of Qualifications in Higher Education (RNCIS) approved by the Order No.3475/2017 with subsequent amendments and additions.

**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.

- Yes, the situation is like (and better than) prescribed in the a.m. Indicator and in the academic year 2020-2021, there are 12 enrolled doctoral students and 12 doctoral supervisors, on mutual satisfaction.
- The a.m. fact confirms an excellent atmosphere to carry out all academic activities.

*Recommendations: In case of increased number of enrolled students, it seems it will be no problems for the proper mutual interaction.*

**The indicator is fulfilled.**

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

Doctoral students in their academic activities, especially in the research, capitalize in the publications, patents, products, technology transfer, services etc. It is presented in The Annexes of this report.

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

Yes, the situation is like prescribed in the a.m. Standard.

**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.

- Yes, the situation is approximately like prescribed in the a.m. Indicator.
- Unfortunately there no presented examples of the doctoral students entrepreneurship or technology transfer.

*Recommendations: Enhance and promote the advantages of an entrepreneurship for the students, as well a participation in the international research projects and scientific or technological joint-ventures.*

**The indicator is partially fulfilled.**

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

- Yes, the situation is approximately like prescribed in the a.m. Indicator.
- Although all students completed the requirement from the a.m. Indicator, unfortunately there are no examples of the doctoral students entrepreneurship or technology transfer.

*Recommendations: Enhance and promote the advantages of an entrepreneurship for the students, as well a participation in the international research projects and scientific or technological joint-ventures, especially with the leading EU-world universities or leading R&D companies departments.*

**The indicator is partially fulfilled.**

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

Yes, the situation is approximately like prescribed in the a.m. Standard.

**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.

- Yes, the situation is approximately like prescribed in the a.m. Indicator.
- It is presented at the page 34 of The INTERNAL EVALUATION REPORT.

*Recommendations: Regular self-evaluating and QA measures enhancing, along with more and more external scientific specialists in the commissions.*

**The indicator is fulfilled/partially fulfilled/not fulfilled.**

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

- In the last 5 years (2016-2020) the ratio is (very good) 0,18 comparing to prescribed: not exceed 0.3

*Recommendations: Keep as it is.*

**The indicator is fulfilled.**

## **Domain C. QUALITY MANAGEMENT**

There is visible existence and regular development of the internal QA system.

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

Yes, there is the existence and regular development of the internal QA system.

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

Yes, the situation and application of QA system is like prescribed in the a.m. Standard.

**Performance Indicator C.1.1.1.** The Doctoral school in the respective university study domain shall demonstrate the continuous development of the evaluation process and its internal quality assurance following a procedure developed and applied at the level of the IOSUD, the following assessed criteria being mandatory:

(a) the scientific work of Doctoral advisors – is very good and internationally visible;

(b) the infrastructure and logistics necessary to carry out the research activity - is very good and enable the doctoral students to carry out internationally visible reserch projects;

(c) the procedures and subsequent rules based on which doctoral studies are organized – are very good and in a trend with EU ones;

d) the scientific activity of doctoral students – is good-very good;

e) the training program based on advanced academic studies of doctoral students - is good-very good;

f) social and academic services (including for participation at different events, publishing papers etc.) and counselling made available to doctoral students  
- is good-very good.

- Doctoral study MATERIALS ENGINEERING at „DUNĂREA DE JOS“ UNIVERSITY OF GALATI is a very good one, and has the capacity to be improved and then to achieve high ranking EU universities (indicators are at pages 35-37 in The INTERNAL EVALUATION REPORT and my impression is very good).

*Recommendations: Enhance and promote the advantages of an entrepreneurship for the students, as well a participation in the international research projects and scientific or technological joint-ventures, especially with the leading EU-world universities or leading R&D companies departments.*

**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.

- Yes, the situation is like prescribed in the a.m. Indicator, including regular annual evaluation.

- The doctoral students are very satisfied with teaching and guiding by their doctoral advisers and are getting ready for their own research activity. They express it on the assessment sheets.

*Recommendations: Regular self-evaluating and QA measures enhancing, along with more external scientific specialists in the commissions, as well as more participation-leading in the international research projects.*

**The indicator is fulfilled.**



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

Doctoral study MATERIALS ENGINEERING at „DUNĂREA DE JOS“ UNIVERSITY OF GALAȚI is a very good one, and has the transparency of information and accessibility to learning resources like a god-very good EU university (indicators are at pages 37-38 in The INTERNAL EVALUATION REPORT and my impression is very good).

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

Yes, the situation is like prescribed in the a.m. Indicator.

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

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

(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 - Yes

- Doctoral study MATERIALS ENGINEERING at „DUNĂREA DE JOS“ UNIVERSITY OF GALAȚI is a very good one, and has the transparency of information and all important information are visible at the web (indicators are at pages 37-38 in The INTERNAL EVALUATION REPORT and my impression is again very good).

*Recommendations: Keep as it is.*

**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.

The doctoral students are very satisfied with the implementation of the a.m. Standard.

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

- Yes, the situation is like prescribed in the a.m. Indicator.

- In students replies to my questions concerned with this Indicator, only one student replied that 98% of his requirements are available, and all others replied like 100% (or almost all...)

*Recommendations: Keep as it is, untill new databases and technologies are available to be provided.*

**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.

- All doctoral students are granted access to the antiplagiarism system (page 39 of The INTERNAL EVALUATION REPORT).
- The a.m. fact-opportunity is very good tool for the identification of the degree of similarity, if there is...

*Recommendations: Keep as it is, untill new (better) software-technology is available to be provided.*

**The indicator is fulfilled.**

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

- Yes, it is like described in the a.m. Indicator.
- There are 3 labs (research centers for excellence) available for all doctoral students, of course according to their specialization field, and the students benefit of their services-testings.

*Recommendations: Perform a sort of precise re-evaluation of the equipment and make a plan to purchase new items, according to the priorities defined by doctoral advisers from MATERIALS ENGINEERING. I propose to get new plastometer, since the existing one is old-fashioned, but a plastometer as a very good tool to research the behaviour of the materials on different temperatures and under different schemes and types of loadings.*

**The indicator is fulfilled.**

**Criterion C.3. Internationalization**

That is very important characteristic of any modern and good HE, which is well applied at the doctoral study MATERIALS ENGINEERING at „DUNĂREA DE JOS“ UNIVERSITY OF GALATI.

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

That is the strategy to enhance and increase the internationalization of the doctoral study. According to that strategy the number of PhD students participating in training courses abroad is to be achieved at the level of at least 20%, what is a level of EHEA (European Higher Education Area).

**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.

- All doctoral students in the period 2016-2020 had at least 1 international participation, but in this generation 2020-2021 almost half of them (47%) already had a sort of the international participation.
- That is the topic which is very much taken care and even better results are expected in a near future, since the agreement ERASMUS +K103 is signed.

*Recommendations: Regular self-evaluating and QA measures enhancing, along with more participation-leading in the international research or mobility projects.*

**The indicator is fulfilled.**

**Performance Indicator C.3.1.2.** In the evaluated doctoral study domain, support is granted, including financial support, to the organization of doctoral studies in

international co-tutelage or invitation of leading experts to deliver courses/lectures for doctoral students.

- Leading experts were invited and delivered the lectures to doctoral students. The conferences with the international participation are 2 to 2 years organized.
- Both a.m. facts can contribute to better performance of the doctoral students.

*Recommendations: Starting with a new sort of scientific publication-journal on quarterly or a half-year basis would be beneficial for both, the doctoral students and supervisors. Regular self-evaluating and QA measures enhancing, along with more participation-leading in the international research or mobility projects.*

**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.).

- It is mentioned at the page 40 of The INTERNAL EVALUATION REPORT.

*Recommendations: International fairs are useful to attract the doctoral students, as well as the service of the specialized agencies in that field.*

**The indicator is partially fulfilled.**

#### **IV. SWOT Analysis**

<p><b><u>Strengths:</u></b></p> <p>- the strengths are: Doctoral study MATERIALS ENGINEERING at „DUNĂREA DE JOS“ UNIVERSITY OF GALATI is a very good one, based on over 70 years of academic tradition.</p>	<p><b><u>Weaknesses:</u></b></p> <p>- Weaknesses are: Labs equipment should be re-evaluated and some missing devices should be provided. (Recommend.... Related to the Performance Indicator C.2.2.3.)</p>
<p><b><u>Opportunities:</u></b></p> <p>- Oportunities are: further improvement of solid doctoral advisers staff and their stronger</p>	<p><b><u>Threats:</u></b></p> <p>- Threts are: state financed grants for the doctoral students could be cut or decreased.</p>

interaction with the leading visiting professors, along with more participating-leading in the international projects and more cooperation agreements with local and foreign research centers.	Contracted retirees among the doctoral advisers could be stopped from further contracts in a near future.
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## V. Overview of judgments awarded and of the recommendations

No.	Type of indicator (*, C)	Performance indicator	Judgment	Recommendations
1	C	C.2.2.3.	The Indicator is fulfilled	<i>Recommendations: Perform a sort of precise re-evaluation of the equipment and make a plan to purchase new items, according to the priorities defined by doctoral advisers from MATERIALS ENGINEERING. I propose to get new plastometer, since the existing one is old-fashioned, but a plastometer as a very good tool to research the behaviour of the materials on different temperatures and under different schemes and types of loadings.</i>
2	C	C.3.1.2	The indicator is fulfilled	<i>Recommendations: Starting with a new sort of scientific publication-journal on quarterly or a half-year basis would be beneficial for both, the doctoral students and</i>

				<i>supervisors. Regular self-evaluating and QA measures enhancing, along with more participation-leading in the international research or mobility projects.</i>
<b>3</b>	<b>C</b>	C.3.1.3.	The indicator is partially fulfilled	<i>Recommendations: International fairs are useful to attract the doctoral students, as well as the service of the specialized agencies in that field.</i>

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

Doctoral study MATERIALS ENGINEERING at „DUNĂREA DE JOS“ UNIVERSITY OF GALATI is a very good one, based on over 70 years of academic tradition.

Its INTERNAL EVALUATION REPORT is a solid and realistic, although a few Romanian instead of English phrases are found and it should be corrected. Some links from that report are not in English, as well as English version of the University-Faculty of Engineering web should be better supplied with all information available in Romanian.

## **VII. Annexes (attached in electronic format)**

*1.The timetable of the institutional evaluation visit - IOSUD / doctoral study domains at the*

**„DUNĂREA DE JOS“ UNIVERSITATII OF GALAȚI**

**Perioada de derulare a vizitei: 12-16.07.2021**

*The evaluation period: 12-16.07.2021*

2.List of relevant contributions of doctoral students who defended their doctoral thesis in the last 5 years 2016-2020

3. Questions for the doctoral students

4. Questions for the doctoral advisers

**5.DOCTORAL STUDENTS AND GRADUATED – Materials Engineering Domain**

6. Question about the patents