

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

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

#### **Visiting Team:**

- Prof. Mircea NICOARĂ, The Polytechnic University of Timisoara – coordinator
- Prof. Gultekin GOLLER, Universitatea Tehnică Istanbul – internațional expert
- Giovanina-Iuliana LUPU, Universitatea POLITEHNICA din București – student representative

Materials Engineering area of doctoral study is a relatively new one at “Gheorghe Asachi” Technical University of Iași as Institution Organising Doctoral Studies (IOSUD-TUIASI), in which prestigious scholars carried out their work. Over the course of time, Materials Engineering evolved from a nucleus of professors from Metals Technology department in accordance with the academic, economic and social context and in accordance with the proposed mission and objectives. At present, doctoral activities in the area of Materials Engineering are carried out at the Faculty of Materials Science and Engineering. In “Gheorghe Asachi” University of Iași research laboratories, Faculty of Materials Science and Engineering along with Faculty of Mechanics (1 phd advisor) and Faculty of Chemical Engineering Cristofor Simionescu (1 phd advisor) under the coordination of a total number of 12 PhD advisors. There are 35 PhD students in total in various stages of doctoral training under the guidance of the founding PhD supervisors.

### **II. Methods used**

As a part of evaluation process, online meetings were done with the panel members, PhD students, academic staff, ethics and quality commission and employers of the doctoral graduates. All meetings were very productive. All the questions asked were answered and the suggestions were received very positively. It can be said that graduated students are allocated in highly prestigious institutions. Based on the information given in the meetings and shared documents, it was understood that the laboratories of the doctoral school were very well equipped and suitable for scientific researches. All ethical issue aiming to control all unexpected situation probable as well.

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



Since I did not have the chance to visit the school, I cannot comment on the physical spaces of the school.

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

#### Domain A. INSTITUTIONAL CAPACITY

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

*Standard A.1.1. The institution organizing doctoral studies (IOSUD) has implemented the effective functioning mechanisms provided for in the specific legislation on the organization of doctoral studies.*

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

(a) *the internal regulations of the Doctoral School;*

**The criterion was met. Specific regulations within IODS and the Doctoral School are published on the site of TUIASI ([www.doctorat.tuiasi.ro](http://www.doctorat.tuiasi.ro)):**

**Regulation of the Doctoral School:**

**[http://www.doctorat.tuiasi.ro/doc/Regulamente/Regulament\\_SD\\_03.2021.pdf](http://www.doctorat.tuiasi.ro/doc/Regulamente/Regulament_SD_03.2021.pdf)**

(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;*

**Methodology for the organisation of elections for the position of director of the Doctoral School Council (DSC), as well as for the election by the students of their representative in DSC and evidence of them having taken place;**

**[http://www.doctorat.tuiasi.ro/doc/Proceduri\\_Alegeri\\_Director\\_CSUD\\_CCPD\\_.pdf](http://www.doctorat.tuiasi.ro/doc/Proceduri_Alegeri_Director_CSUD_CCPD_.pdf)**

**[http://www.doctorat.tuiasi.ro/doc/Proceduri\\_Alegeri\\_Director\\_SD\\_CSD.pdf](http://www.doctorat.tuiasi.ro/doc/Proceduri_Alegeri_Director_SD_CSD.pdf)**

**[http://www.doctorat.tuiasi.ro/doc/Proceduri\\_Alegeri\\_Consilii.pdf](http://www.doctorat.tuiasi.ro/doc/Proceduri_Alegeri_Consilii.pdf)**

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

**Methodologies for the organisation and delivery of doctoral studies (admission examinations for doctoral students, completion of doctoral studies):**

**- admission:**

**[http://www.doctorat.tuiasi.ro/Htm/Admiterea\\_2021.htm](http://www.doctorat.tuiasi.ro/Htm/Admiterea_2021.htm)**

**[http://www.doctorat.tuiasi.ro/doc/Procedura\\_admitere\\_02.2021.pdf](http://www.doctorat.tuiasi.ro/doc/Procedura_admitere_02.2021.pdf)**

**- completion of studies:**

**[http://www.doctorat.tuiasi.ro/doc/DOCUMENTE\\_SUSTINERE/Procedura\\_Anexe\\_Procedura\\_sustinere\\_teza.pdf](http://www.doctorat.tuiasi.ro/doc/DOCUMENTE_SUSTINERE/Procedura_Anexe_Procedura_sustinere_teza.pdf)**

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

**Relevant information given in website given below;**



[http://www.doctorat.tuiasi.ro/doc/Procedura\\_echivalare\\_conducere.pdf](http://www.doctorat.tuiasi.ro/doc/Procedura_echivalare_conducere.pdf)

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

**Relevant information given in website given below;**

[http://www.doctorat.tuiasi.ro/Htm/Componenta\\_CSUD-2020.htm](http://www.doctorat.tuiasi.ro/Htm/Componenta_CSUD-2020.htm)

f) the contract for doctoral studies;

**Relevant information given in website given below;**

[http://www.doctorat.tuiasi.ro/Htm/Contract\\_doctorat.htm](http://www.doctorat.tuiasi.ro/Htm/Contract_doctorat.htm)

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

**Relevant information given in website given below;**

[http://www.doctorat.tuiasi.ro/Htm/Teme\\_cercetare.htm](http://www.doctorat.tuiasi.ro/Htm/Teme_cercetare.htm)

- the procedure of initiation, approval, monitoring and periodic evaluation of PhD programmes (art. 15, 16 and Annex 3): [http://www.doctorat.tuiasi.ro/doc/Proceduri\\_diverse/CSUD\\_13.pdf](http://www.doctorat.tuiasi.ro/doc/Proceduri_diverse/CSUD_13.pdf)

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

**All regulations and relevant informations are given in the Annexes and websites.**

*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.*

**The criterion was met**

**The Regulation of the Doctoral School includes under:**

- art. 13: specific references to the way new members who are doctoral advisors are accepted;
- art. 10, 11: references to the mechanisms by means of which the decisions regarding the content of the training programme are made;
- art. 14, 15, 16 in the regulation of DSC with references to the procedures for the doctoral advisor's replacement;
- art. 22, 23, 24, 25 in the regulation of DSC with references to the conditions under which the PhD programme can be interrupted;
- art. 32 in the regulation of DSC with references to the modalities to prevent fraud;
- art. 21 in the regulation of DSC and art. 15 in the regulation of DSC with references to the way access to research resources is ensured;



**-the methodology regarding attendance obligations in accordance with a methodology elaborated by the Ministry of Education was not issued.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**. Details related with these informations are given in the Annexes 2.2 and websites**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All regulations and relevant informations are given in the Annexes and websites.**

*Recommendations:*

**The indicator is fulfilled.**

*Standard A.1.2. The IOSUD 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.*

**The criterion was met**

**The Doctoral School keeps the doctoral students' record by its own IT system consisting of a database, and by means of the Unique Matriculation Register (UMR).**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Print screens are shown in Annex 2.3.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All regulations and relevant informations are given in the Annexes.**

*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.*

**The criterion was met. Plagiarism Detector application is used (<http://www.plagiarism-detector.com/c/en/index.php>) on the basis of a contract concluded between TUIASI and Plagiat-Sistem Antiplagiat prin Internet SRL.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**A copy of the contract is presented in Annex 2.4., together with pieces of evidence of its use.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All regulations and relevant informations are given in the Annexes.**

*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.*

**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.

**The criterion was met**

**In the doctoral area of study Materials Engineering, the situation is as follows:**

**- the number of research grants under implementation at the moment of submission of the application 3**

**- the number of institutional/human resources development grants under implementation at the moment of submission of the application: 1**

**- the number of research or institutional/human resources development grants obtained by the doctoral advisors in the evaluated area within the last 5 years: 14**

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

**Details are given in Annex 2.5.**

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

**All regulations and relevant informations are given in the Annexes.**

*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%.

**The criterion is met.**

**The number of doctoral students on 30.09.2020 is 66**

**Doctoral students members in research grants: 14. The calculated proportion is  $14/66 = 0.2121$  which means a percentage of 21.21 %**

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

**Details and copies of the agreements are given in Annex 2.6**

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

**All regulations and relevant informations are given in the Annexes.**

*Recommendations:*

**The indicator is fulfilled.**



**Performance Indicator \*A.1.3.3.2** *At least 10% of the total amount of doctoral grants obtained by the university through institutional contracts and of tuition fees collected from the doctoral students enrolled in the paid tuition system is used to reimburse professional training expenses of doctoral students (attending conferences, summer schools, training, programs abroad, publication of specialty papers or other specific forms of dissemination etc.).*

**Sum of revenues Oct. 2015 – Sept 2020: 1430894.63**

**Sum of expenses Oct. 2015 – Sept 2020: 46192034.44**

**Calculated percentage 3.1 %.**

**Special measures are foreseen for percentage increasing, a part of them being already implemented starting from October 2020.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Details about the calculation method and about data specific to the area are presented in Annex 2.7.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All regulations and relevant informations are given in the Annexes.**

*Recommendations:*

**The indicator is fulfilled.**

**A specific budget should be allocated to be spent within the scope of research part of the doctoral studies and these expenses should be recorded.**

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

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

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

**The criterion was met.**

**The learning spaces and the material equipment of the Doctoral School allow for research activities in the area of Materials Engineering to take place, in accordance with the targeted mission and objectives. The material equipment includes computers, specific software, equipment, laboratory equipment, library, access to international databases, etc. The research infrastructure and the research services offer are presented publicly by the platform**

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



**ERRIS, at (link):**

<https://eeris.eu/ERIF-2000-000J-0642>

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**The research infrastructure purchased and developed over the past 5 years is presented in detail in Annex 2.8.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All regulations and relevant informations are given in the Annexes and websites.**

*Recommendations:*

**The indicator is fulfilled.**

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

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

**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.*

**The criterion was met.**

**Within the doctoral area of study, there are 12 doctoral advisors and 12 meet the NCAUTDC minimal standards that are required and compulsory in order to obtain the habilitation qualification.**

**The corresponding percentage is 100 %.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Evidence for the fact that NCAUTDC are met is given in Annex 2.9.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Relevant informations are given in the Annexes.**

*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.*

**The criterion was met.**

**The total number of doctoral advisors in the doctoral area of study Materials Engineering**

**Tenured doctoral advisors in the area of study 9**

**The corresponding percentage: 75 %**



- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

**Details are given in Annex 2.10.**

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

**Relevant informations are given in the Annexes.**

*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.*

**The criterion was met.**

**The subjects in the education programme based on advanced higher education studies corresponding to the area Materials Engineering. are delivered by: 8 lecturers holding the title of professor or associate professor, with expertise in the area of the subjects they teach within the evaluated area, according to the Curricula.**

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

**Curricula available online at:**

**[http://www.doctorat.tuiasi.ro/Htm/Planuri\\_invatamant.htm](http://www.doctorat.tuiasi.ro/Htm/Planuri_invatamant.htm)**

**Details are given in Annex 2.11.**

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

**All regulations and relevant informations are given in the Annexes and websites.**

*Recommendations:*

**The indicator is fulfilled.**

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

**The criterion was met.**

**The number of doctoral advisors in the area of Materials Engineering supervising a number of no more than 8 doctoral students is : 11**

**The number of doctoral advisors in the area of Materials Engineering supervising a number of 8-12 doctoral students is 1**

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





**There are no doctoral advisors supervising more than 12 doctoral students during their doctoral studies period.**

**The corresponding percentage is 8.33 %**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Details are given in Annex 2.12.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes**

*Recommendations:*

**The indicator is fulfilled.**

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

**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.*

**The criterion was met.**

**The number of doctoral advisors in the area who have no less than 5 Web of Science-indexed or ERIH-indexed publications in journals with an impact factor is: 12.**

**The number of doctoral advisors in the area who are members in the scientific or organising boards of international conferences within the past 5 years is: 12.**

**The corresponding percentage: 100 %**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Details and supporting documents are given in Annex 2.13**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes.**

*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.*

**The criterion was met**

**The number of doctoral advisors in the area of study who are still active in their scientific field, obtaining, on the basis of scientific results within the past 5 years, more than 25% of the score requested by NCAUTDC minimal standards in order to obtain the habilitation qualification (100%) is: 12**

**The corresponding percentage is: 100 %**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Details and supporting documents are given in Annex 2.14.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes.**

*Recommendations:*

**The indicator is fulfilled.**

## **Domain B. EDUCATIONAL EFFECTIVENESS**

*\*general description of domain analysis.*

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

*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.*

**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.*

**The criterion was met.**

**In the past five years, there have been 55 budget-funded places in the area of study.**

**During this time, a number of 16 graduates from other institutions registered for the admission exam, amounting to a ratio of 0.29.**

**The ratio between the number of candidates in the past five years and the number of budget-funded places advertised in the area of study Materials Engineering is: 1.209.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Details are given in Annex 2.15.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*



**All relevant informations are given in the Annexes.**

*Recommendations:*

**The indicator is fulfilled.**

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

**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.

**The criterion was met.**

**Admission to doctoral studies programs in the area of Materials Engineering is conducted according to selection criteria that include: academic, research and professional merit, interest in scientific or artistic/sports research, publications in the field and a research proposal. An interview with the applicant is a compulsory part of the admission procedure.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Details and admission criteria in the past five years are given in Annex 2.16.a.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes.**

*Recommendations:*

**The indicator is fulfilled.**

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

**The criterion was met.**

**Total of registered students 2015-2019: 69**

**PhD students expelled after 3 years: 13**

**Dropout rate: 18.73 % < 30%.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Details are given in Annex 2.16. b**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes.**

*Recommendations:*

**The indicator is fulfilled.**

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



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

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

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

**The criterion was met.**

**The curricula show the existence of at least three important subjects for the PhD students' education for scientific research and one subject dedicated research methods, according to recommendations.**

**The curricula for the past academic year (2020-2021) are:**

**[http://www.doctorat.tuiasi.ro/doc/Planuri\\_invatamant\\_2020-2021.pdf](http://www.doctorat.tuiasi.ro/doc/Planuri_invatamant_2020-2021.pdf)**

**where one can notice the presence of three subjects relevant to the all the PhD students' education, that is:**

- Academic ethics and integrity**
- Research methods**
- A specialised subject of the PhD advisor's choice, in collaboration with the PhD student.**
- Individual study (as an optional subject, to be chosen by the CCPD)**

**The subject 'Research Methods' consists of in-depth notions on research methodologies and/or the statistical processing of data, according to the subject outline attached to this file.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**The curricula for the past academic year (2020-2021) are given below link:**

**[http://www.doctorat.tuiasi.ro/doc/Planuri\\_invatamant\\_2020-2021.pdf](http://www.doctorat.tuiasi.ro/doc/Planuri_invatamant_2020-2021.pdf)**

**Details and supporting documents are given in Annex 2.17.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes and websites.**

*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.*

**The criterion was met.**

**The subject 'Academic Ethics and Integrity', taught by prof. Nicolae Seghedin and prof. Mariana Gavrilesu is offered by the Doctoral School.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**[http://www.doctorat.tuiasi.ro/doc/Planuri\\_invatamant\\_2018-2019.pdf](http://www.doctorat.tuiasi.ro/doc/Planuri_invatamant_2018-2019.pdf)**



**The subject outline is given in Annex 2.18.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes and websites.**

*Recommendations:*

**The indicator is fulfilled.**

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

**The criterion was met.** The IODS established these mechanisms through the DSC, the DS regulations and the procedures drafted by DSC, where these skills are listed.

In addition to the basic procedures there also specific procedures that regulate the mechanisms by which the education programme based on advanced higher education studies associated with the evaluated area aim at learning outcomes, stating the knowledge, skills, duties and autonomy that PhD students should acquire after the completion of each subject or by conducting research.

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**The procedure that ensures that level 8 of qualification is met according to the national qualifications framework (nqf) and the european qualifications framework (eqf)**

**Code po.csud.14**

**[http://www.doctorat.tuiasi.ro/Htm/Legislatie\\_Noutati.htm](http://www.doctorat.tuiasi.ro/Htm/Legislatie_Noutati.htm)**

**and**

**The procedure for the initiation, approval, monitoring and periodic evaluation of doctoral programmes:**

**[http://www.doctorat.tuiasi.ro/doc/Proceduri\\_diverse/CSUD\\_13.pdf](http://www.doctorat.tuiasi.ro/doc/Proceduri_diverse/CSUD_13.pdf)**

**Details are given in Annex2.19.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes and websites.**

*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.*

**The criterion was met.**

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



**For the entire duration of the doctoral programme, PhD students in the area of Materials Engineering benefit from the counselling/guidance of functional advisory committees, also reflected in guidance and opinions expressed in writing or during regular meetings.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Details regarding the existence and function of advisory committees are given in Annex 2.20.a**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes.**

*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.*

**The criterion has been met.**

**Number of PhD students at the time of the evaluation: 66**

**Number of instructors/researchers providing guidance: 54**

**The ratio between the number of PhD students and the number of instructors/researchers providing guidance: 1.22**

**The ratio is lower than 3:1.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Details are given in Annex 2.20.b**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes.**

*Recommendations:*

**The indicator is fulfilled.**

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

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

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

**The criterion was met.**

**Number of PhD students who completed the doctoral studies programme in the area of Materials Engineering in the past five years: 32**



**There is at least one relevant contribution per area of study and for each of the PhD students who defended their thesis in 2016 – 2020.**

**This file includes one contribution per PhD student, deemed by the PhD advisor to be the most relevant.**

1. V Paleu, G Gurău, R I Comăneci, V Sampath, C Gurău and L G Bujoreanu, A new application of Fe-28Mn-6Si-5Cr (mass%) shape memory alloy, for self-adjustable axial preloading of ball bearings, *Smart Materials and Structures*, 27(7), 2018, 075026 (11pp), <https://doi.org/10.1088/1361-665X/aac4c50964-1726> , FI = 3,543.
2. Burduhos-Nergis, D.P., Vizureanu, P., Sandu, A.V., Bejinariu, C., Phosphate Surface Treatment for Improving the Corrosion Resistance of the C45 Carbon Steel Used in Carabiners Manufacturing, *Materials*, (2020), Volume: 13 Issue: 15, Article Number: 3410, <https://www.mdpi.com/1996-1944/13/15/3410> FI = 3,057.
3. Mitrica, D; Olaru, MT; Dragut, V; Predescu, C; Berbecaru, A; Ghita, M; Carcea, I; Burada, M; Dumitrescu, D; Serban, BA; Banica, IC, Influence of composition and as-cast structure on the mechanical properties of selected high entropy alloys, *Materials Chemistry and Physics* (2020), Volume: 242, Article Number: 122555, <https://doi.org/10.1016/j.matchemphys.2019.122555> , FI = 3,408.
4. B. Istrate, J.V. Rau, C. Munteanu, I.V. Antoniac, V. Saceleanu, Properties and in vitro assessment of ZrO<sub>2</sub>-based coatings obtained by atmospheric plasma jet spraying on biodegradable Mg-Ca and Mg-Ca-Zr alloys, *Ceramics International*, 2020, Vol. 46, Is. 10, 15897-15906 Part: B, <https://doi.org/10.1016/j.ceramint.2020.03.138> , FI = 3.83.
5. A. Luca, V.Maier, S.S.Maier, M. Butnaru, M.Danu, C.Ibanescu, M.Pinteala, M.Popa, Biomacromolecular-based ionic-covalent hydrogels for cellencapsulation: The atelocollagen – Oxidized polysaccharides couples, *Carbohydrate polymers*, 169, 366–375, 2017, <http://dx.doi.org/10.1016/j.carbpol.2017.04.046> , FI = 13,2.

**All selected articles were published in high impact factor journals. It should be said that all articles will make significant contributions to the relevant literature.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**List of relevant papers per PhD student and the papers themselves are given in Annex 2.21**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes.**

*Recommendations:*

**The indicator is fulfilled.**

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

**The criterion was met.**

**Number of PhD students who completed the doctoral studies programme in the past five years:**

**32**



**Number of presentations per area of study: 35**

**Ratio: 1.09.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Details are given in Annex 2.22.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes.**

*Recommendations:*

**The indicator is fulfilled.**

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

**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.*

**The criterion was met.**

**The number of doctoral theses assigned to any one reviewer from an institution of higher education other than the evaluated IODS must not be higher than two (2) for theses supervised by the same PhD advisor in one year.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Decision copies following the public defence of PhD these are given in Annex 2.23.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes.**

*Recommendations:*

**The indicator is fulfilled.**

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

**The criterion was met.**

**Number of PhD theses defended in the area of Materials Engineering in the past five years: 32**

**Maximum ratio: 0.25.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Details are given in Annex 2.24.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*





**All relevant informations are given in the Annexes.**

*Recommendations:*

**The indicator is fulfilled.**

## **Domain C. QUALITY MANAGEMENT**

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

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

- (a) the scientific work of Doctoral advisors;*
- (b) the infrastructure and logistics necessary to carry out the research activity;*
- (c) the procedures and subsequent rules based on which doctoral studies are organized;*
- (d) the scientific activity of doctoral students;*
- (e) the training program based on advanced academic studies of doctoral students;*
- (f) social and academic services (including for participation at different events, publishing papers etc.) and counselling made available to doctoral students.*

**The criterion was met.**

**The main applicable procedure is:**

- **THE PROCEDURE FOR THE INITIATION, APPROVAL, MONITORING AND PERIODIC EVALUATION OF DOCTORAL PROGRAMMES, CODE PO.CSUD.13:**  
[http://www.doctorat.tuiasi.ro/doc/Proceduri\\_diverse/CSUD\\_13.pdf](http://www.doctorat.tuiasi.ro/doc/Proceduri_diverse/CSUD_13.pdf)

**Supporting procedures:**

- **THE PROCEDURE FOR THE EVALUATION OF PHD SUPERVISORS BY THE MANAGEMENT STRUCTURES, CODE PO.CSUD.12:**  
[http://www.doctorat.tuiasi.ro/doc/Proceduri\\_diverse/CSUD\\_12.pdf](http://www.doctorat.tuiasi.ro/doc/Proceduri_diverse/CSUD_12.pdf)
- Annex PO.CSUD.13-A3 of PO.CSUD.13 contains specific details regarding the periodic evaluation process in all mentioned aspects concerning this criterion.
- **THE PROCEDURE FOR THE ACCOMODATION OF STUDENTS DORMITORIES:**  
[https://www.tuiasi.ro/wp-content/uploads/2020/10/PO.PRS\\_01\\_E1R5.pdf](https://www.tuiasi.ro/wp-content/uploads/2020/10/PO.PRS_01_E1R5.pdf)
- The regulation for the organisation and running of the sports facility:  
<https://campus.tuiasi.ro/wp-content/uploads/ROF-Baza-Sportiva.pdf>
- Access to the TUIASI dispensary.
- Free access to the TUIASI library: <https://biblioteca.tuiasi.ro/>
- The regulation for the running and organisation of the TUIASI Center for career orientation, counselling and social inclusion <https://campus.tuiasi.ro/centrul-de-consiliere-orientare-in-cariera-si-incluziune-sociala/>

The listed procedures also establish evaluation mechanisms concerning:

- a) the PhD advisors' scientific activity;
- b) the infrastructure and logistics necessary for conducting research;
- c) the regulations and procedures on which the organisation of doctoral studies is based;
- d) the PhD students' scientific activity;
- e) the PhD students' education programme based on advanced higher education studies;
- f) the social and academic support services;
- g) counselling services.

The social and academic support services (including regarding participation to various events, the publication of articles etc.) and counselling at the PhD students' disposal can be identified through:

- professional counselling;
- accommodation;
- access to campus facilities;
- the posting of local, national and international events regarding doctoral studies.
- *description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

[http://www.doctorat.tuiasi.ro/doc/Proceduri\\_diverse/CSUD\\_13.pdf](http://www.doctorat.tuiasi.ro/doc/Proceduri_diverse/CSUD_13.pdf)

[http://www.doctorat.tuiasi.ro/doc/Proceduri\\_diverse/CSUD\\_12.pdf](http://www.doctorat.tuiasi.ro/doc/Proceduri_diverse/CSUD_12.pdf)

<https://campus.tuiasi.ro/wp-content/uploads/ROF-Baza-Sportiva.pdf>

<https://campus.tuiasi.ro/centrul-de-consiliere-orientare-in-cariera-si-incluziune-sociala/>

Details regarding implemented procedures and support services provided to PhD students are given in Annex 2.25.

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes and the websites.**

*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.*

**The criterion was met.**

The Doctoral school is constantly preoccupied with the PhD students' level of satisfaction. The first questionnaire testing the level of satisfaction was distributed in 2018, followed by a series of questionnaires which included:

- The administrative services;
- The education programme based on advanced higher education studies;
- Assessment and grading;
- Communication with the PhD advisor;
- Research infrastructure;
- The scientific relationship with the PhD advisor;



- **The relationship with the DSC and DS;**
- **The need to implement various measures;**
- **Other criteria.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**A plan of action was drafted and implemented as a result of the analysis of the obtained results, are given in Annex 2.26.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes.**

*Recommendations:*

**The indicator is fulfilled.**

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

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

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

- (a) the Doctoral School regulation;*
- (b) the admission regulation;*
- (c) the doctoral studies contract;*
- (d) the study completion regulation including the procedure for the public presentation of the thesis;*
- (e) the content of training program based on advanced academic studies;*
- (f) the academic and scientific profile, thematic areas/research themes of the Doctoral advisors within the domain, as well as their institutional contact data;*
- (g) the list of doctoral students within the domain with necessary information (year of registration; advisor);*
- (h) information on the standards for developing the doctoral thesis;*
- (i) links to the doctoral theses' summaries to be publicly presented and the date, time, place where they will be presented; this information will be communicated at least twenty days before the presentation.*

**The criterion was met. All regulations and procedures published at the link below:**

**<http://www.tuiasi.ro/rectorat/consiliul-pentru-studiile-universitare-de-doctorat>  
[www.doctorat.tuiasi.ro](http://www.doctorat.tuiasi.ro)**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

*<http://www.tuiasi.ro/rectorat/consiliul-pentru-studiile-universitare-de-doctorat>  
[www.doctorat.tuiasi.ro](http://www.doctorat.tuiasi.ro)*

**Details and individual links are given in Annex 2.27.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*



**All relevant informations are given in the Annexes.**

*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.*

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

**The criterion was met.**

**All PhD students have access to international databases particular to their area of study on any computer registered in the TUIASI network through the ANELIS (National Electronic Access to the Scientific Literature for Supporting the Research and Education System in Romania) contract.**

**The databases provide access to: Web of Science, SCOPUS, Science Direct, IEEE, Springer etc.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Details and a copy of the contract are given in Annex 2.28.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes.**

*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.*

**The criterion was met.**

**TUIASI signed a contract of service with the 'Plagiat-Sistem Antiplagiat prin internet SRL' (Plagiarism- Anti-plagiarism System via the Internet LLC) company to check the degree of similarity.**

**Each PhD student has access, upon request, through their PhD supervisor, to an electronic system to check the degree of similarity with other scientific works. Access is free for up to 50000 signs annually, anything exceeding this number requiring payment.**

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Access details and payment rules are given in Annex 2.29.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes.**

*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.*



The criterion was met.

PhD students have access to research laboratories with the endorsement of the laboratory head instructor, also mentioned by DSC regulations.

Furthermore, a specific access regulation was developed considering the situation in the country starting with March 2020.

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Details are given in Annex 2.30.**

*- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**All relevant informations are given in the Annexes.**

*Recommendations:*

**The indicator is fulfilled.**

### Criterion C.3. Internationalization

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

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

The criterion was met.

**The number of mobility agreements with foreign universities: 16 international agreements and 37 Erasmus agreements and SEE**

**Number of PhD students with mobilities: 8**

**Mobility percentage: 25%.**

The IODS develops and implements policies and action plans designed to increase of the number of PhD students participating in scholarships abroad to up to at least 20%, the target of the European Higher Education Area. Briefly, among these measures we can find:

- the development of the Erasmus programme;
- the partnership with the platform phd-hub.eu;
- the set-up of summer schools for PhD students;
- the introduction of the European PhD;
- encouraging participation in programmes of the COST type;
- posting international events dedicated to doctoral studies on the website, scholarships in the European and non-European areas.

*- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

**Details are given in Annex 2.31.**



- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

**All relevant informations are given in the Annexes.**

Recommendations:

**The indicator is fulfilled.**

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

**The criterion was met.**

**The number of joint international supervision agreements: 2.**

**First-rank experts that held classes/lectures before the PhD students in 2016 - 2020: 4.**

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

**Details on agreements and a few measures to encourage the development of cooperation with first-rank experts from the evaluated area are given in Annex 2.32.**

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

**All relevant informations are given in the Annexes.**

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.).

**The criterion was met.**

**The internationalisation of activities in the area of doctoral studies is also supported by other specific measures, such as:**

- participation to educational fairs in order to attract international PhD students;
- the inclusion of international experts in advisory committees or PhD thesis defense committees;
- joint-supervision theses;
- participation in international PhD defense committees;
- the establishment of the European PhD;
- the inclusion of doctoral studies in specialised European networks etc.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

**Details are given in Annex 2.33.**

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

**All relevant informations are given in the Annexes.**

Recommendations:

**The indicator is fulfilled.**



#### IV. SWOT Analysis

<u>Strengths:</u>	<u>Weaknesses:</u>
<u>Opportunities:</u>	<u>Threats:</u>

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

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

*The recommendations contained in the report shall be resumed in the indicators' analysis. Other general recommendations may be made that do not fit within a particular indicator.*

*VERY IMPORTANT!!! – Each identified weakness must be correlated with at least one recommendation to improve the situation!*

#### VI. Conclusions and general recommendations

*Self assesment report has been prepared in detailed and provides the opportunity to answer all possible questions. As a part of evaluation process, online meetings were done with the panel members, PhD students, academic staff, ethics and quality commission and employers of the doctoral graduates. All meetings were very productive. All the questions asked were answered and the suggestions were received very positively.*

*My observations and recommendations during the evaluation of self study report and meeting with different shareholder of the material science doctoral program of the TUIASI are listed below:*

- 1. Based on the information given in the meetings and shared documents, it was understood that the laboratories of the doctoral school are very well equipped and suitable for scientific researchs.*
- 2. Materials Engineering Department is quite active in research and department members acting active to allocate budget for the research activities by using different tools like Erasmus, special programs and collaboration with the companies.*
- 3. I believed that the collaboration of material and mechanical engineering departments provides good results in terms of research infrastructures and university-industry collaboration.*
- 4. As mentioned in the meetings, although the location of the university is a disadvantage, department members are acting quite active to compensate this deficiency.*
- 5. Ethical issues aiming to control all unexpected situation probable as well.*



6. *It is observed that many of the graduates from PhD level are being allocated with very prestigious organizations in Romania.*

7. *It seems like specific budget allocated for the research related with each doctoral study is not enough. It would be very useful to introduce a higher budget for the thesis advisors at least purchasing starting powders (raw materials), metallographic specimen preparation consumables, conference participations, publishing articles and etc.*

8. *It was stated that some PhD studies could not be completed in 3 years due to budget problems.*

9. *It was mentioned that the evaluation processes of national funds and pot-doc funds applications take too long. This situation affects adversely the research activities.*

10. *Another important issue, there should be a mechanism to promote the researchers to publish article. For this purpose, both PhD students and thesis advisors should be encouraged by an award mechanism. This mechanism is based on the offering some amount of money to thesis advisors and students according to their publishing number end of each year. This award can be offered by two ways: national scientific research council and TUIASI research funds.*

11. *Some professors mentioned that instead of getting money from companies for their work, they receive services related to their work. I think, Instead, a revolving fund-like system can be established and companies can pay money for the work done. Some of this money can be allocated to the revolving fund management of university rectorate, some to the department where the work is done as overhead and rest of them to the professor who perform the work for research activities after taxation.*

12. *I observed that the students are not willing to go to abroad due to the long duration (6 months) of the Erasmus programs because of their marriage and other family status.*

13. *As a final point, it was mentioned that there is a strong relationship between the students and the advisors. The advisors always guide the students not only the research but also in every field.*

14. *For all performance indicators are awarded the grade FULFILLED:*

*Regards,*

*Prof. Dr. Gultekin Goller*