

The External Evaluation Report of a Doctoral Study Domain

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I. Introduction¹



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Târgoviște, also spelled Tîrgoviște, city, capital of Dâmbovița județ (county), south-central Romania. It lies along the Ialomița River, in the southeastern Transylvanian Alps (Southern Carpathians), 50 miles (80 km) northwest of Bucharest. Târgoviște was the capital of feudal Walachia from the 14th to the 17th century. Its monuments include a 16th-century watchtower and a 17th-century church founded

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



by Vasile Lupu. The city has become a center of the oil industry, with oil-field equipment works and many modern residential buildings. Târgoviște has a rare-books museum that was the former residence of Princess Safta; its exhibits trace the history of printing in Romania. An archaeological museum contains artifacts from the Stone and Iron Ages and the Greek, Roman, and Dacian occupations. Railway connections and highways radiate from Târgoviște throughout the county. Pop. (2007 est.) 89,773.



"Wallachia" the University of Targoviste is the continuation of the tradition of the first higher education institution in Muntenia, "Schola Graeca et Latina"(1646 - 1652), established during the reign of Matei Basarab, who applied the curriculum known as Ratio Studiorum, used since the end of the century. 16th century in many universities and colleges in Western and Central Europe. Courses such as logic and rhetoric, which were taught in Greek and Latin, were meant to train the elites of Wallachia to meet the needs of the state, the church and society. Medieval royal residence and the metropolitan seat of Wallachia, the city of Targoviste has hosted, since that period, an active nucleus for the development of humanities and the printing houses from Dealu Monastery and from the Metropolitan Church, where the first works were printed in Romanian, but also the famous "Correcting the law ", one of the first codes of law in Europe written in a national language. The long cultural tradition of the city of Targoviste was animated by the creation and development of the State University "Wallachia", a prestigious institution with a European vocation, which makes its mark on the economic, social, political and religious life of the former capital of Wallachia.





The “Valahia” University of Târgoviște, a public institution of higher education, has implemented the European education system Bachelor-Master-Doctorate and trains highly trained professionals following the current requirements of the labor market in Romania and the European Union, promoting a set of values based on solidarity, non-discrimination, equity, scientific objectivity, creativity and dynamism.

Valahia University aims to promote and support - in the local, regional, national and international community - the development of specific cultural components:

- training of specialists with higher education for education, science, economics, social activities, engineering, theology, etc .;
- promoting fundamental and applied scientific research activities;
- promoting a cult of lifelong and innovative learning;

Benefiting from the competence of the employed teaching staff, the “Valahia” University of Târgoviște has the necessary capacity to attract and develop scientific projects, structural projects and other types of projects at regional, national and European levels. By developing scientific research at the university level, within the teams/departments and by involving the students from the initial training, master's and doctorate, within the stages of project realization, excellence in the educational process is obtained.

The mission of the “Valahia” University of Târgoviște is to integrate into the elite of Romanian universities and to:

- to develop the education system to be continuously compatible with that practiced in the European Union, so that university graduates are recognized as European specialists;
- to meet customer requirements by using a high-performance educational process, based on new information and communication technologies;
- to develop scientific research by involving in national and international scientific projects, projects financed from structural funds or local funds that lead to the increase of organizational efficiency;
- to ensure the financial resources to carry out in optimal conditions all the activities;
- to develop and modernize the spaces destined for the educational process, scientific research, libraries, student accommodation and administrative activities.
- meet the requirements of stakeholders (parents, employers, local community, etc.).



The organization of bachelor's, master's and doctoral programs in the "Valahia" University of Târgoviște is based on the Regulation of university activity of students, the Regulation on the organization and development of master's university studies and the Regulation on the organization and development of doctoral university studies developed according to legal regulations. in force and approved by the University Senate.

The evaluation of the students' preparation is done both qualitatively - through the marks awarded at the exams, colloquia and the projects they take, and quantitatively - through the credit points awarded at the end of the disciplined activity (exam or colloquium). The introduction of the transferable credit system allows the standardization of the volume and quality of activities carried out by the student during the semester (partial exams or median exam, direct seminar activity, homework, direct laboratory activity, exam session) and tracking students' training in during the semester.

The activity of compulsory training of students has two main components: a component of frontal training during classes, seminar, laboratory or project and a component of individual training during individual study hours, documentation, information for homework, preparation on-the-spot verification exams, projects and other individual papers included in the Analytical Program of the discipline, activities that have different weights in granting the credit points allocated to the discipline.

The Faculty of Electrical Engineering provides specialized training in high-level fields of contemporary science and technology. The Electrotechnical specialization emphasizes the intelligence, professional potential and availability to intellectual and creative effort of the young people who follow it.

In the context of the development of current science and technology, Electrotechnical Specialization has special perspectives in the evolution of small and medium enterprises with activities in the field of electrical networks, electrical appliances and equipment, electrical machines and actuators, transducers and data acquisition systems, regulation systems. automatic, in the management and use of



conventional and unconventional electricity, but also in terms of designing electrical and electric power systems. The Electrotechnical specialization from the Faculty of Electrical Engineering ensures to their graduates a diploma compatible with the profile faculties from the European Union countries and equivalent transferable credits so that the students and graduates of this field can continue their bachelor studies.

We start our mission of evaluation 8.11.2021 from 09:00 - 10:00 Romanian time with a Meeting Online meeting for the preparation and harmonization of evaluation steps, in hybrid mode, of doctoral study domains and IOSUD with all evaluation panel members

8.11.2021 continue from 10:15 to 11:15 with an Online meeting with representatives of the VALAHIA UNIVERSITY and of the Council for Academic Doctoral Studies (CSUD) with representatives of the University's management, -representatives of the CSUD and of the Valahia Doctoral School and the contact person for IOSUD/doctoral domains.

8.11.2021 continue from 11:30 to 12:30 : Online meeting with the contact person for the doctoral study domain under review and the team who drafted the internal evaluation report with members of domain evaluation panel and - the doctoral study domain contact person and the team who drafted the internal evaluation report.

8.11.2021 continue from 14:30 to 15:30 with Online meeting with the academic staff corresponding to the doctoral study domain, Domain evaluation panel, members of domain evaluation panel and members of domain evaluation panel.

09.11.2021 start from 09:00 to 10:00 with online meeting with Valahia University PhD students and members of domain evaluation panel form domain of Electrical Engineering.

09.11.2021 continue 13:15 to 14:15 with Online meeting with graduates of the respective doctoral study domain of Electrical Engineering, members of domain evaluation panel and representatives of Valahia University doctoral graduates.

11.11.2021 start from 10:00 to 10:45 with online meeting with the Directors/persons in charge of the research centers/laboratories within the doctoral study domain, members of domain evaluation panel and directors of research centers/laboratories.

11.11.2021 continue from 14:30 to 15:30 with online meeting with the Commission for Quality Evaluation and Assurance (CEAC) members/Quality Assurance Department with all evaluation panel members and - representatives of Commission for Quality Evaluation and Assurance (CEAC)/Quality Assurance Department.

12.11.2021 start from 14:30 to 15:30 with online meeting for conclusions with IOSUD evaluation panel and all evaluation panel members.

12.11.2021 finish from 12:00 to 13:00 with Meeting with representatives of the institution under review to discuss on the conclusions of the evaluation process and the main reccomandations, IOSUD evaluation panel and VALAHIA UNIVERSITY's representatives.



II. Methods used

The logical framework, or log frame, is the most common and best-known planning tool used in international development. It is also the most hotly debated. Originally designed for use in simple time-bound projects, it is now the tool of choice for donors in interventions ranging from small projects to organizational core funding. The logical framework is often used as a basis for monitoring and evaluation.

A logical framework can have many different purposes depending on the context, and it is probably this that has made it so popular. It was originally conceived as a planning tool, aimed at supporting the management of planned processes. However, depending on the circumstances, a log frame can be:

- a planning tool.
- a tool for program management.
- the basis for M&E in a project or program.
- an accountability mechanism.
- a succinct summary of a piece of work.
- a 'window' into the work of an organization or complex program.
- a linear theory of change; or
- a mechanism for seeking fundin

This chapter will contain the methods and tools used in the external evaluation process, before and during the evaluation visit, including at least:

Narrative summary	Objectively Verifiable Indicators	Means of Verification	Assumptions
<i>Goal:</i>			
<i>Objectives:</i>			
<i>Outputs:</i>			
<i>Activities:</i>			
<i>Inputs:</i>			

Starting with the narrative summary column, the goal defines the longer-term impact that a project or program aims to contribute to. The goal may be designed to be achieved after completion of the project or program and may depend on the actions of many different agencies, as well as changes in the external environment. The next row down deals with the objectives or purpose of the project or program - the changes it hopes to directly influence over its lifetime. The outputs row includes the tangible products or services the project or program aims to produce. The last two rows deal with the activities of the project or program and the resources required (inputs).

The second column - objectively verifiable indicators - defines what information will be collected to indicate whether or how far the goal, objectives and outputs have been achieved. The third column - means of verification - indicates the sources that will be used to collect the indicators, such as interviews,



observation, or secondary sources. The final column identifies the key risks and assumptions that might influence the success or otherwise of the project or program.

III. Analysis of ARACIS's performance indicators

Domain A. INSTITUTIONAL CAPACITY

**general description of domain analysis.*

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

**general description of the criterion analysis.*

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

**general description of the standard analysis.*

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

- (a) the internal regulations of the Doctoral School;*
 - (b) the Methodology for conducting elections for the position of director of the Council of doctoral school (CSD), as well as elections by the students of their representative in CSD and the evidence of their conduct;*
 - c) the Methodologies for organizing and conducting doctoral studies (for the admission of doctoral students, for the completion of doctoral studies);*
 - d) the existence of mechanisms for recognizing the status of a Doctoral advisor and the equivalence of the doctoral degree obtained abroad;*
 - e) functional management structures (Council of the doctoral school), giving as well proof of the regularity of meetings;*
 - f) the contract for doctoral studies;*
 - g) internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs based on advanced academic studies.*
- *University that takes a mission to generate and transfer knowledge towards society through initial and permanent training at the university and postgraduate level with the purpose of personal development, professional insertion of the individual, and through scientific research, development, innovation, and technological transfer, through individual and collective creation, as well as capitalizing on and disseminating their results.*
 - *University "Valahia" of Tergoviste accomplishes its mission by achieving the following objectives:*
 - a) *Has developed and implemented specific regulations following the legislation on the organization of doctoral studies. The institutional regulation for the organization and development of doctoral university study programs at the University of Wallachia in Targoviste, approved by the Senate of the University of Wallachia in Targoviste in its meeting of January 31, 2019, by decision no. 47 D.*



- Doctoral School of Engineering Sciences (here in after referred to as SDSI), with the fields:
 - electrical engineering
 - material engineering and
 - mechanical engineering.
 - The doctoral university studies carried out in UVT (the University of Wallachia in Targoviste) represents the third cycle of university studies, focused on learning through research, whose purpose is to develop competent human resource in conducting research.
 - The doctoral university studies allow the acquisition of a level 8 qualification from the European Qualifications Framework (EQF) and the National Qualifications Framework.
- b) The Methodology for conducting elections for the position of director of the Council of doctoral school (CSD), approved by HS 22Q / 27.04.2017.
 - M08 - Methodology for conducting elections for the members of the Doctoral School Council and for appointing the director of the doctoral school, approved by HS 22Q / 27.04.2017.
 - The director of SDSI is appointed by CSUD for a term of 5 years.
 - The election by the students of their representative in CSD took place in two rounds
- c) The methodologies for organizing and conducting doctoral studies: (admission of doctoral students, completion of doctoral studies):
 - This Institutional Regulation provides the general frame of reference regarding the organization and development of doctoral university study programs within the "Valahia" University of Targoviste - an institution accredited by the Ministry of National Education and Scientific Research as an Organizing Institution for University Studies.
 - The approval of the Methodology for receiving studies and schooling of foreign citizens on places without payment of tuition fees and with scholarships and places without payment of tuition fees, but without a scholarship, in higher education institutions accredited state;
 - Completion of doctoral studies using alternative methods
- d) the existence of the mechanisms for recognizing the quality of doctoral supervisor and for equivalence of the doctorate obtained in other states;
 - Recognition of the doctoral degree obtained abroad approved at the meeting of the Monitoring Commission on 06.12.2018, approved at the meeting of the University Senate on 19.12.2018.
 - Recognition of the quality of doctoral supervisor obtained abroad,
- e) CSD - SDSI is constituted according to the Methodology for electing the members of the Doctoral School Council and appointing the director of the doctoral school.
- f) The doctoral studies contract give doctoral student-specific rights:
 - to have the support, guidance and coordination of the doctoral supervisor and the steering committee;
 - to participate in the seminars or working meetings of the research and development staff within IOSUD, which are of interest for the topic of his doctoral thesis;



- to be represented in the decision-making forums of the doctoral school, according to the provisions of the code of doctoral studies;
- to benefit from the logistics, documentation centers, libraries and equipment of the doctoral school and IOSUD for the elaboration of the research projects and of the doctoral thesis; enroll in courses and seminars organized by other doctoral schools;
- to work with teams of researchers from IOSUD or from research and development units that have concluded institutional agreements or partnerships with IOSUD; to benefit from national or international mobility;
- to participate in the scientific communication sessions organized by the doctoral school and/or IOSUD,
- to capitalize by presenting in national and international publications the results of the interim research reports; doctoral activities, taking into account that the maximum total duration of extensions and interruptions does not exceed 2 years;
- to request the change of the doctoral supervisor in the situations provided by law, with the consent of the IOSUD management;

Recommendations:

The indicator is fulfilled.

Performance Indicator A.1.1.2. *The doctoral school's Regulation includes mandatory criteria, procedures and standards of the Government Decision No. 681/2011 on the approval of the Code of Doctoral Studies with subsequent amendments and additions.*

- *The SDSI Regulation addresses the aspects of art. 17 para. (5) of HG 681/2011 with subsequent amendments and completions.*
 - The acceptance of new doctoral advisors are regulated, and the withdrawal of the quality of members of the doctoral school.
 - The training program based on advanced university studies is regulated.
 - the change of the doctoral supervisor is discussed, and the mediation of conflicts.
 - the interruption of the doctoral program has established
 - the prevention of fraud in scientific research, including plagiarism, is established,
 - the access of doctoral students to research and documentation resources is provided;
 - it is specified that the doctorate at SDSI is frequent or part-time it is specified that the doctoral student must carry out the activities provided in the individual plan of doctoral university studies under the conditions of frequency set by the doctoral supervisor.

Recommendations:

The indicator is fulfilled.

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

**general description of the standard analysis.*

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



- University “Valahia” of Tergoviste has an information system that manages students' activities, study programs, facilitates the collection, processing and analysis of data and information relevant for institutional quality assessment and assurance. Currently, UMS is used in 24 Romanian universities. UVT is using UMS since 2011. In IOSUD, UMS has been introduced in 2018..
- University website (<https://www.valahia.eu>) together with the pages of the faculties and departments provides information on study programs, teaching staff, student facilities, regulations, procedures and other useful documents, announcements of current events and any information relevant to students or prospective students.
- The University website is of good quality with all information for doctoral and postdoctoral students.

Recommendations:

- Translate all documents on the website to English.

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.*

- University “Valahia” of Tergoviste uses a dedicated software to verify the similarity index of all doctoral theses, namely www.sistemantiplagiat.ro University “Valahia” of Tergoviste ensures the verification of the authenticity and originality of doctoral theses and other scientific papers with the help of the program www.sistemantiplagiat.ro recognized by the National Council for Attestation of University Degrees, Diplomas, etc.

Recommendations:

- Using an international expert in commission for PhD study and always translate doctoral thesis into English. In this way similarity on English and translation part of the thesis will be reduced to the minimum.

The indicator is fulfilled.

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

**general description of the standard analysis.*

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

- At the level of Electrical Engineering within the Doctoral School of Electrical Engineering, there is 4 research grants.

- There is currently an ongoing grant type PNIII-PED in which PhD student C. G. BUICA is involved and funded. Another 3 research grants, 1 IDEI type grant and two PARTNERSHIP type grants have been carried out in the last 5 years
- The projects obtained by the doctoral supervisors in the field are:
 1. PN-III-P2-2.1-PED-2019-2464, Image lossless compression by reversible data hiding, director D. Colțuc, Aug. 2020 – July 2022;
 2. PN-III-P4-ID-PCE2016-0339, Reversible watermarking: advanced techniques - SWAT, PN-III-P4-ID-PCE2016-0339, <http://www.swat.valahia.ro/>director D. Colțuc, June 2016 – Dec 2019;
 3. PN-II- PTPCCA-2013-4-1762, Intelligent Management, Monitoring and Maintenance System for Pavements and Roads Using Modern Imaging Techniques- PAV3M, 2013-2017, <http://193.231.19.17/PAV3M/> responsible UVT D. Colțuc;
 4. PN-II-PT-PCCA-2011-3.2-1162, Far-field and near field investigation of melanoma - NANOLASCAN, <http://nanolascan.ro/> 2012-2016, responsible UVT D. Colțuc;
 5. POSDRU/182/2.3/5/152783 “Qualification, adaptation, performance - for a better life”, 2014-2016, director H. Andrei.

Recommendations:

- University must use more EU grants for foreign PhD and postdoctoral students to have the possibility to be excellent in education and to increase the internationality of the study of Electrical Engineering.

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 indicator is fulfilled with a percentage of 25%. Four out of the 16 existing PhD students of SDSI-IE (Annex 11), have other sources of funding, namely C.G. Buică (20 months from project PN-III-P2-2.1-PED-2019-2464), B. Sălișteanu scholarly tax waiving of 50% (2016-2021), I. Istudor scholarly tax waiving of 50% (2016-2021) and I.V. Vasile who received funding from IOSUD-UVT as a fixed-term employee at ICSTM-UVT (2016-2017).
- Regarding the financing of SDSI doctoral students from other sources, we must also mention that 8 PhD students (47%) out of the 17 PhD students who defended their theses during the evaluated period received funding from other sources. Thus, 5 PhD students received funding from research contracts, respectively (A. Ciubotariu 8 months from FP7- PEOPLE 276991/2010 / Marie Curie ERG and 8 months from PN-II- RU-TE-2011-3- 0299, IC Dragoi 36 months from PN-II- PT-PCCA-2011-3.2-1162 and 20 months from PN -II-PT-PCCA-2013-4-1762, V. Miron-Alexe 37 months from PN-II- PT-PCCA-2013-4- 0686 / 232, V. Gurgu 18 months from PN-III-P2- 2.1-PED-2016-1675 and MG Ioniță 6 months from the project Network of intelligent multisensory nodes for indoor monitoring (SMARD), contract CI100 / 2017). Three other PhD students received scholarly tax waiving of 50%, namely R.A. Enescu (Jan. 2020 - Oct. 2020), I. Vasile (2016-2019), B. Tene (2017-2018).

Recommendations:



- *In the future is recommended more private sources for doctoral and postdoctoral study.*

The indicator is fulfilled.

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

- *The indicator is partially fulfilled - the percentage is 7.64%. We consider the budget allocation for engineering fields of 25.300 RON and 4.500 RON taxes. During the evaluation period, 11 PhD students were admitted to SDSI-IE by budget places and 3 by fee places. The budget allowance is paid for 3 years. Considering the duration of 3 years and for the doctorates in fee regime we obtain an amount of $3 \times 11 \times 25.3 + 3 \times 4.5 \times 3 = 875,400$ RON.*
- *SDSI-IE PhD students benefited for professional training of RON 2750 representing participation fees for ISEEE 2017 (I. Marinescu), ECAI 2017 (IV Gurgu, CA Badea), EEEIC, Florence, Italy (CA Badea), ECAI 2016 (N. Fidel) and ISFEE 2017 (G. Oprea),*
- *We also mention the payment for access to electronic resources via ANELIS, the purchase of licenses and software used by doctoral students. Thus, 10 ANSYS Academic Teaching Electronics Suite licenses, 10 ANSYS Academic Teaching CFD licenses and 5 ANSYS Academic Teaching Mechanical Licenses were purchased, the amount being 30,000 lei and during the period 2016-2020, the amount of 138,754 was been paid for Microsoft Office M365 EDU licenses A3. During all these years the interest in the development of applications using the resources of this contract has mainly been expressed by students in electrical engineering. Thus, we will consider the sixth part of this value, namely 23,126 RON.*
- *SDSI-IE doctoral students employed by the UVT also benefited from 50% reductions on tuition fees, respectively of RON 41,046. Adding up, we have $2,750 + 23,126 + 41,064 = 66,992$ RON, i.e., the total sum represents 7.64% of 875,400 RON.*
- *We mention that SDSI supplemented the aspect of financing from UVT allowances/fees by financing from other sources, respectively from research contracts and POSDRU projects, an aspect that can be observed by examining the participation in scientific events (* B.3.1.2) and the financing of doctoral students from other sources (* A.1.3.2).*

Recommendations:

- *In next year must be increased from 7,64% to a minimum 10% from a doctoral grant for professional training expenses of PhD students.*

The indicator is fulfilled.

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



Criterion A.2. Research infrastructure

**general description of the criterion analysis.*

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

**general description of the standard analysis.*

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

- *SDSI uses the UVT research infrastructure without restrictions. As presented in Section 1.2 of the report, SDSI-IE PhD students have access to the laboratories of the ICSTM research centers and the Faculty of Electrical, Electronic and Information Technology Engineering.*
- *We list the laboratories:*
- *Environmental Energy Research Department:*
 - *Energy Conversion Laboratory in Grid-Connected Systems*
 - *Materials Laboratory Used in Energy Conversion*
 - *Systems Laboratory for Distributed Energy Management in Intelligent Networks*
- *Electric Vehicle Research Center*
- *Research Center in Electrical Engineering, Electronics and Information Technology*
 - *Laboratory of Electrical and Electronic Systems used in Renewable Energy Sources*
 - *Printed Wiring Development and Prototyping Laboratory*
- *Laboratories from the Faculty of Electrical Engineering, Electronics and Information Technology:*
 - *Electrical Equipment and Installations;*
 - *Modeling and simulation of electrical networks*
 - *Electrical and Electronic Measurements*
 - *Protocols and Communication Interfaces for Industrial Environment and Embedded Systems*
 - *Integrated Systems for Signal Processing*
 - *Image Processing and Pattern Recognition*
 - *Systems for Energy Management Distributed in Intelligent Networks*
- *Electric Vehicle Research Center.*
- *We also mention the unrestricted access to the documentation resources of the UVT Library, including the electronic resources*
- *UVT equipment and the offer of services is also presented on the ERIS (Engage of European Research Infrastructures System*

Recommendations:

The indicator is fulfilled.



Criterion A.3. Quality of Human Resources

**general description of the criterion analysis.*

Standard A.3.1. At the level of each domain, there is sufficient qualified staff to ensure the conduct of a 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.*

- *"Wallachia" the University of Targoviste, Doctoral school of ELECTRICAL ENGINEERING filling the maximum standards by doctoral advisors in the field of ELECTRICAL ENGINEERING:*
- *Fulfillment of % of the minimum CNATDCU standards in the field of ELECTRICAL ENGINEERING from SD-SFI in the period 2014-2018:*
- *Prof. Dr. Eng. Horia Leonard ANDREI, Complies 25% of OM / 5774,6 points 962%*
- *Prof. Dr. Eng. Dinu COLTUC, Complies 25% of OM / 6101,38 points 1001%*
- *Prof. Dr. Eng. Nicolae VASILE 25% of OM / 1875,52 points 312%.*
- *Calculation sheets calculation of individual minimum standards, to meet at least 25% of the score required by CNATDCU minimum standards for qualification in the field of ELECTRICAL ENGINEERING from the Doctoral School of Fundamental Sciences, for the last 5 years (2014-2020).*

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 indicator is fulfilled with 50% - two out of the 4 doctoral thesis advisors (D. COLTUC, V. DOGARU-ULIERU) having a full-time employment contract for an indefinite period with IOSUD - UVT*

Recommendations:

- *In the future, universities need more advisors with indefinite contract periods.*

The indicator is fulfilled.

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

- *The subjects in the training program based on advanced university studies related to the field of Electrical Engineering within SD IEE are supported by teachers who have the quality of doctoral*

supervisor / habilitated, all teaching staff being Professors -members of SD IEE, with proven expertise in the field of taught subjects.

- The Ethics and Academic Integrity course was held until 2019 by Assoc. Prof. Gheorghiu (CV in Annex 8.1), from the Law Faculty of UVT where he teaches courses in Intellectual Property Law, Private International Law, Commercial Law. We also mention that, in addition to the didactic activity, Mr. Gheorghiu is an industrial property advisor, intellectual property arbitrator, member of the scientific council of the Romanian Journal of Intellectual Property Law and member of the editorial board of the magazine.
- The Research Methodology course is taught by Prof. V. Bratu, PhD supervisor in the field of materials engineering at SDSI and dean of the Faculty of Materials Engineering and Mechanics (CV in Annex 8.3) or by Prof. N. Vasile, PhD supervisor in engineering electric. Both have extensive research experience. Prof. V. Bratu participated in 18 research contracts financed from the National Research - Development Programs or by industrial enterprises and design institutes (of which 2 as managers) an international research contract as director, a national contract as scientific director. It should also be mentioned that Prof. N. Vasile was for 13 years (1992-2005) General Director of the Research Institute for Electrical Engineering (ICPE) Bucharest.
- The other 3 specialized courses are recommended by the doctoral supervisor depending on the subject of the thesis and the course of the doctoral student. Courses from the Master's programs given by the SDSI-IE doctoral supervisors can be recommended, and for doctoral students who have already followed the master's courses at UVT, an individual study is usually specified based on a recommended bibliography and which must include recent articles from that field.
- All 4 PhD supervisors have representative publications indexed Web of Science and international visibility. We list 20 publications (with a cumulative impact factor of 65,073) and elements on the international visibility of doctoral supervisors in the last 5 years

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 programs³ does not exceed 20%.

- The indicator is fulfilled. No doctoral advisor guides more than 8 PhD students. More precisely, H. Andrei guides 2 PhD students, D. Coltuc 5, V. Dogaru-Ulieru 3 and N. Vasile 6 doctoral students.

Recommendations:

The indicator is fulfilled.

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

*general description of the standard analysis.

³3 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.



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.*

- *Each of the PhD supervisors in the field of Electrical Engineering has at least 5 Web of Science indexed publications, which include international contributions that reveal progress in scientific research.*
- *The international visibility of doctoral supervisors in the last five years is highlighted in the Minimum Standards Sheets by membership in the scientific committees of international publications and conferences, membership in the boards of international professional associations, guest quality at conferences or groups of experts conducted abroad:*
- *All 4 PhD supervisors have representative publications indexed Web of Science and international visibility. We list 20 publications (with a cumulative impact factor of 65,073) and elements on the international visibility of doctoral supervisors in the last 5 years*

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 indicator is satisfied with 75%: 3 out of the 4 doctoral supervisors exceed, based on the scientific results of the last five years, 25% of the score of the minimal standards (Annex 5). Reporting the scores to 25% of the minimum score for habilitation (150 points), scores higher than 23 times (prof. Horia ANDREI), 16 times (Dinu COLTUC) and 3 times (prof. Nicolae VASILE) are obtained for the three advisors).*

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

**general description of the criterion analysis.*

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

**general description of the standard analysis.*

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

- *The indicator is fulfilled with the ratio $14/11 = 1.27 > 1,2$. 11 out of the 14 candidates enrolled in the past five years have been admitted on seats founded by the state budget. The three PhD students that have not been admitted on seats founded by the state budget are S. Sontea (2020) and I. Craiu, A. Enescu (in 2017).*

Recommendations:

The indicator is fulfilled.

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

**general description of the standard analysis.*

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

- *The selection criteria for admission to doctoral study programs are specified in the Doctoral School Regulations*
- *Candidates for doctoral admission are assessed according to the level of training and information in the field, the ability to address specific research problems, formulate innovative solutions and the quantifiable results of previous scientific research.*
- *The rate of rejected students is 0%.*
- *The specialized exam consists of an interview in which the scientific interests of the candidate, his research skills and his results are analyzed, based on the research topics established by each doctoral supervisor.*

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 admission⁴ does not exceed 30%.*

- *Within the doctoral field ELECTRICAL ENGINEERING, there weren't identified any expulsions/dropouts of the doctoral students, 3 years after the admission.*

Recommendations:

The indicator is fulfilled.

Criterion B.2. The content of doctoral programs

**general description of the criterion analysis.*

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

**general description of the standard analysis.*

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

- *The training program based on advanced university studies includes five disciplines, namely, Research Methodology, three other specialized disciplines proposed by the doctoral supervisor (master courses or individual study based on the bibliography indicated by the supervisor, bibliography which must include recent articles, relevant to the subject of the doctoral thesis, and Ethics and academic integrity.*

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.*

- *In addition to the Ethics and Academic Integrity course, Research Methodology in the Doctoral School -SD IEE contains the subject of Scientific research ethics and academic integrity.*
- *The theme of the course includes introductory notions on ethics and morals, research ethics in Romania, the correct writing of an academic paper, plagiarism and auto plagiarism, the use of computer programs to detect plagiarism, the code of ethics and professional ethics of UVT.*

Recommendations:

The indicator is fulfilled.

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



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 activities⁵.*

- *At the level of the Doctoral in Electrical Engineering, mechanisms are developed to ensure that the training program based on advanced university studies, related to the evaluated fields, aims at "learning outcomes", specifying the knowledge, skills and abilities that Doctoral students should acquire after going through each subject.*
- *The files of the courses in the curriculum specify the competencies, responsibility and autonomy acquired by the doctoral students after completing the related training program. The course sheets are analyzed and approved by the SD-SFI Committee.*
- *The training program based on advanced university studies includes Ethics and academic integrity, Research Methodology and 3 specialized courses recommended by the doctoral supervisor depending on the subject of the thesis and the background of the PhD student (master courses or individual study based on a recommended bibliography with recent scientific papers). For each discipline, doctoral students have a colloquium in which the acquisition of skills is verified (knowledge of the field, synthesis capacity, critical analysis, ability to evaluate results).*
- *The curriculum also provides three Progress reports of the research which are presented before the guidance committee. CSD-SDSI recommends that PhD students' publications be included in these reports, allowing the guidance committee to analyze the evolution of the doctoral student in problems statement, formulating hypotheses, analytical skills, handling of the mathematical apparatus, writing and presentation.*

Recommendations:

The indicator is fulfilled.

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

- *All doctoral students benefit during the entire doctoral training period from the counseling/guidance of Advisory committees composed of the doctoral supervisor and three specialists in the field/fields in which the doctoral student carries out his / her activity.*
- *Based on this questionnaire, the insertion of graduates on the labor market is monitored, as well as the evolution of their level of satisfaction. The questionnaires are processed by the Career Counseling and Guidance Center.*

⁵Or 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 guidance commissions are made up of specialists in the field, teachers in UVT, with whom the doctoral student meets regularly (face to face or online). We exemplify functionality with joint publications of 4 doctoral students with theses defended in the evaluated period with co-authors from the guiding commissions. 4 of the 17 graduates of SDS-IE represent 23,5%*

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 training of the 16 PhD students enrolled at IE is provided by 12 teachers, respectively 4 PhD supervisors, 2 professors for Research Methodology, Ethics and 6 others in the guidance commissions (prof. N. Olariu, assoc. prof. C. Sălișteanu, assoc. prof. A. Husu, assoc. prof. H. Coandă, lecturer. Căciulă, lecturer Drăgoi), i.e., the ratio is of 16: 12 = 1,3: 1.*

Recommendations:

The indicator is fulfilled.

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

**general description of the criterion analysis.*

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

**general description of the standard analysis.*

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

- *"Wallachia" University of Targoviste has a system for the periodic evaluation of teaching, research and management activities that is constantly used, improved from year to year and which has become a basic component in the culture of quality.*
- *There are competent human resources, organized pyramidally, for each study program; University research has international and national recognition, transparency in the university's ranking among top research universities, based on a large number of research contracts, ISI listed publications, investment in infrastructure and involvement of young researchers, PhD students, postdocs extended;*
- *We present, below, the list of 29 (20 indexed or listed ISI) of representative publications of the 17 PhD students who defended their theses in the last 5 years. We mention that 5 articles are published in ISI Q1 journals (2.1 - 290 citations, 2.2-80 citations, 2.3 - 70 citations) and ISI Q2*



(1.1, 7.2). Another 15 articles are indexed by ISI (2 published in the journal JOSA, in recognized conference proceedings in the field as IEEEIC (1), ATEE(3), ICSSC (2), ECAI (4), ISEEE (3), ICSTCC(1) and a book chapter 12.1).

Recommendations:

- Recommendation for Electrical Engineering to insist on applied science papers. In the future Electrical Engineering will be very popular according to trends in the development of electrical vehicles and renewable energy and waste energy.

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 indicator is satisfied with a ratio of 1.59. 11 out of the 27 participants are at well-known international events, namely: 4 ones at European Signal Processing Conference-(EUSIPCO), 4 participants at International Conference on Robotics and Automation (ICRA), 1 at International Conference on Environment and Electrical Engineering (IEEEIC), 2 at IEEE International Conference on Advanced Intelligent Mechatronics (AIM).
- The other 17 participants are at traditional conferences organized in the country, respectively 2 participations at International Symposium on Advanced Topics in Electrical Engineering (ATEE), Bucharest, participation at International Conference on System Theory, Control and Computing (ICSTCC), Sinaia, 2 participants at International Symposium on Signals, Circuits & Systems - ISSCS, Iasi, 8 at Int Conf. Electronics, Computers and Artificial Intelligence –ECAI, 2 at IEEE-Int Symposium of Fundamentals of Electrical Engineering – ISFEE, and 1 at Int.Symposium on Electrical and Electronics Engineering-ISEEE.

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.

*general description of the standard analysis.

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

- In the last 5 years, no more than two doctoral theses per year have been completed for a doctoral supervisor.
- There are 4 cases of two theses per year allocated by a leader to the same referent.



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 a minimum of ten doctoral theses have been presented within the past five years should be analyzed.*

- *The indicator is fulfilled with a ratio of $0.23 < 0.3$.*
- *The greatest number of participations in PhD commissions is 4, for prof. Costin CEPISCA, UPB, that leads to a ratio of $4/17 = 0.23 < 0.3$.*
- *On the second position is prof. Sorin Dan GRIGORESCU from UPB with 3 participations.*

Recommendations:

The indicator is fulfilled.

Domain C. QUALITY MANAGEMENT

**general description of domain analysis.*

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

**general description of the criterion analysis.*

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

**general description of the standard analysis.*

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

- (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 participation at different events, publishing papers etc.) and counseling made available to doctoral students.

- The scientific activity of doctoral supervisors was carried out during an academic year. This is the number of publications in relevant journals and the degree of fulfillment of the minimum standards for the award of the habilitation certificate, in force in the academic year subject to evaluation, the number of doctoral students who have completed their studies within three years from the date of enrolment out of the total number of doctoral students and who have publicly defended the thesis.
- IOSUD and SDSI follow the quality assurance policy implemented at the University of Valahia. The objectives of IOSUD are in line with the objectives of the university, namely, in the field of the quality management system, continuing education and training, scientific research and international cooperation.
- Infrastructure and facilities necessary for carrying out the research activity is analyzed how the funds of the doctoral school were used to improve the infrastructure and facilities necessary to carry out the research activity in the academic year subject to evaluation like the number of doctoral students financially supported to publish/participate in conferences; organizing symposia, summer schools, etc.
- Subsequent procedures and rules based on which doctoral studies are organized like analysis of the degree of fulfillment of the obligations mentioned in the curriculum by the doctoral students coordinated by each doctoral supervisor.
- Analysis of the reasons why the doctoral students could not be complete the doctoral program within three years from the date of enrolment.
- An evaluation questionnaire was completed for the social and academic support services and counseling, as well as for the infrastructure and logistics necessary to carry out the activity

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 them to identify their needs, as well as their overall level of satisfaction with the doctoral study program 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.

- In the “Valahia” University of Târgoviște, there is a Quality Council (CC) led by the rector, coordinated by the vice-rector with quality problems, which has in its structure the Commission for evaluation and quality assurance (CEAC) and the Quality Department (CoC). . The Commission for quality evaluation and assurance and the Quality Department is structured with composition and attributions in the field of quality, approved by the Senate.
- The “Valahia” University of Târgoviște has a system for the periodic evaluation of teaching, research and management activities that is constantly used, improved from year to year and has become a basic component in the culture of quality.

- *Recognition of the professional-scientific value of the members of the academic community from “Valahia” University of Târgoviște by:*
 - *participation in management commissions and boards and quality assurance of education and scientific research at the national level;*
 - *The quality of experts for the evaluation of scientific research projects and programs and educational, at national and international level;*
 - *The quality of reviewers or members in the editorial committees of some representative magazines from the main international scientific flow.*
 - *The quality of the study was distributed like a questionnaire. 98% of PhD student was told that is an excellent study.*

Recommendations:

The indicator is fulfilled.

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

**general description of the criterion analysis.*

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

**general description of the standard analysis.*

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

- (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 institutional regulation for the organization and development of doctoral study programs at the University of Wallachia in Targoviste, approved by the Senate of the University of Wallachia in Targoviste in its meeting of January 31, 2019, by decision no. 47 D;*
- *The regulation of organization and functioning of IOSUD, approved by the Senate of the University of Wallachia from Târgoviște in its meeting of January 31, 2019, by decision no. HSU Nr. 47 DI;*
- *Regulation of the Doctoral School of Engineering Sciences, approved by the Senate of the University of Wallachia in Târgoviște in its meeting of January 29, 2020, by decision no. 61 E*

- *The Doctoral School of Electrical and Energy Engineering provides all doctoral students with access to the resources necessary to carry out doctoral studies, by:*
 - access to the literature;
 - depending on the topic of the thesis;
 - access to modern research laboratories, which are very well equipped;
 - access to the research teams to which the doctoral students are integrated;
 - access to specialized laboratories at industrial partners -under research and development contracts

Recommendations:

- *More PhD and postdoctoral PhD study of Electrical Engineering based on the English language.*
The indicator is fulfilled.

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

**general description of the standard analysis.*

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

- **SDSI doctoral students have access to Online databases:**
 - *ANELIS PLUS - National Electronic Access to Scientific Literature for Supporting the Research and Education System in Romania - scientific databases for study and research in various fields*
 - *ScienceDirect Freedom Collection, Elsevier - provides access to online scientific research journals, academic books, book series and online encyclopedias; covered fields: humanities, medicine, exact sciences, technology.*
 - *Web of Science - Core Collection, In Cites Journal Citation Reports, Derwent Innovations Index, Clarivate Analytics - mainly includes scientific journals, conferences and books; covered fields: humanities, social sciences, arts, exact sciences.*
 - *PROQUEST Central -offers access to scientific research journals in online format, reports, newspapers, books; fields found: science and technology, medical sciences, literature, society and culture, art, history, religion, computers, education, business and much more.*
 - *Scopus, Elsevier -c comprises; scientific journals, books and conference papers; fields found: medical sciences, technology, social sciences, arts, humanities.*
 - *de Gruyter ebooks - includes academic papers of the highest level; fields covered: humanities, social sciences, medicine, natural sciences, law.*
 - *Cab ebooks - provide online access to authority information from a top scientific publisher; fields: agriculture, environment, health, nutrition, etc.*
- *Teachers and students of the University of Wallachia in Targoviste can access the subscribed databases from the University's computer network, based on IP or remotely, through mobile access.*

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.

- All doctoral students "Wallachia" University of Targoviste are granted access to the system of verifying the degree of similarity with other scientific creations through the verifying system of. having an electronic system for verifying the degree of similarity: with sistemantiplagiat.ro

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.

- All doctoral students have access to scientific research laboratories or other facilities specific to the field of Electrical Engineering, according to internal rules.
- All doctoral students are granted access to scientific research laboratories within the Research Centres mentioned at the criterion A.2.1.1.
- Some doctoral students have access to research laboratories or testing laboratories within companies with which some doctoral supervisors have concluded research contracts
- Doctoral students have access, based on ID, to libraries, reading rooms, laboratories, rooms equipped with computers of the faculty, according to the provisions of study contracts and legislation in force on the schooling of all students.

Recommendations:

- Build virtual joint access laboratory for better online activities of PhD students. This means virtualizing real laboratories and giving access to students to training in virtual space, before starting real laboratory work.

The indicator is fulfilled.

Criterion C.3. Internationalization

**general description of the criterion analysis.*

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

**general description of the standard analysis.*

Performance Indicator *C.3.1.1. IOSUD, for every evaluated domain, has concluded mobility agreements with universities abroad, with research institutes, with companies working in the field of study, aimed at the mobility of doctoral students and academic staff (e.g., ERASMUS agreements for the doctoral studies). At least 35% of the doctoral students have completed a training course abroad or other mobility forms such as attending international scientific conferences. IOSUD drafts and applies policies



and measures aiming at increasing the number of doctoral students participating at mobility periods abroad, up to at least 20%, which is the target at the level of the European Higher Education Area.

- The mobility indicator is fulfilled with a percentage of 38,1%. Namely 16 PhD students out of 42 (16 ongoing students and 26 graduates) participated in scientific events abroad (as listed below).

Recommendations:

- The institution must increase the number of PhD students in Erasmus projects incoming and outgoing abroad. Internationalization is a key to educational success in the future.

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.*

- A joint supervision thesis of D.A. Ciubotariu, Design, Modeling, Fabrication and control of PMN-PT Piezoelectric Systems with Franche-Comté University, France and FEMTO-ST Institute, large-scale research laboratory has been defended at SDSI-IE. FEMTO-ST Institute has double affiliation: Franche-Comté University and National Research Center Scientific (CNRS - UMR 6174). The thesis was coordinated by Prof. D. Colțuc from UVT and Prof. Philippe Lutz coordinator from UFC, Director of the Doctoral School for Engineering Sciences and Microtechnology (SPIM) of UFC.
- SDSI-IE doctoral students participate in scientific events organized in UVT. For the period subject to evaluation, we mention the lectures given at ICSTM-UVT by:
 - Prof. Eng., PhD José Machado, Mech., University of Minho, School of Engineering, Mechanical Engineering Department, PORTUGAL, „Mechatronic System for the Promotion of Physical Activity in People with Motor Limitations” 06 September 2018;
 - PhD. John Mack - Rhodes University, Grahamstown, South Africa “The rational design of BODIPY dyes for biomedical and optical limiting applications”, 06 October 2017, <http://www.icstm.ro/content/Invited-Lecturer-PhD-John-Mack>
 - PhD Eng. Ion Stiharu- Department of Mechanical and Industrial Engineering, Concordia University, Canada „MEMS Application to Life Science” , ”A New Approach for the Non-Linear Analysis of the Deflection of Beams Using Lie Symmetry Groups” 07 September 2017

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.).

- Regarding the participation of international experts in doctoral committees, we report the presence of prof. Rosario TOSCANO, of École Nationale d'Ingénieurs de Saint-Étienne (ENISE), France, in the thesis committee of D.A. Ciubotariu.
- 37 Internationalization works in the other direction as well. Thus, Prof. D. Coltuc was a member of the doctoral committees of the theses "Reversible watermarking scheme with watermark and signal robustness for audio", author María Alejandra Menéndez Ortiz, National Institute of Astrophysics, Optics and Electronics, Puebla, Mexico, 2017, Print quality assessment by image processing and color prediction models, author David Nébouy, Univ. Jean Monnet, Saint Etienne, France, 2015 and external rapporteur for the doctoral theses "Capacity Analysis in Reversible Watermarking Schemes", author Rushikesh Prakash Borse at Indian Institute of Technology, Bombay, 2016 and "Reversible Watermarking based on Histogram Shifting and Error Expansion", author Ayesha Siddiq, Dept. of Computer and Inf. Sciences, Pakistan Inst. of Eng. and Applied Sciences, Islamabad, Pakistan, 2016.

Recommendations:

- Internationalization is a key for a future for an excellent University. This level of Erasmus, Ceepus and other mobilities must be doubled in the future.

The indicator is fulfilled.

IV. SWOT Analysis

<p>Strengths:</p> <p>The university remains a regional leader in the field of higher education, through the study programs of Electrical Engineering it offers and the importance of research contracts;</p> <p>The university offers to study a program in an area of Electrical Engineering for a doctorate for full-time, part-time and distance learning;</p> <p>One of the best Doctoral schools in Electrical Engineering</p> <p>There is an adequate material basis for education and research activities, in continuous improvement and modernization;</p> <p>There are competent human resources, organized pyramidally, for each study program;</p> <p>University research has international and national recognition, transparency in the university's ranking among top research universities, based on a large number of research</p>	<p>Weaknesses:</p> <p>The low share of research funding from private funds;</p> <p>The low level of attractiveness of the teaching and/or research career; big companies have more money than universities.</p> <p>Low efficiency of technology transfer in case of research results (with poor funding), in the current economic environment; Insufficient visibility concerning EU universities.</p> <p>An increased level of internationalization is a key for a future for an excellent University.</p> <p>The number of doctoral advisors are minimum.</p> <p>Doctoral grants aren't enough for supporting doctoral students' activities.</p> <p>A small rate of exchange students trough Erasmus and CEEPUS projects.</p>
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<p>contracts, ISI-listed publications, investment in infrastructure and involvement of young researchers, PhD students, postdocs extended;</p> <p>The University has adopted and implemented a strategy and operational plan for research and innovation compatible with the latest trends at the European and national level;</p> <p>Research centers have been reorganized; The regulatory framework for doctoral and post-doctoral programs was adopted - as institutional and methodological premises for the emergence of research poles;</p> <p>The intensification of the European mobility programs Erasmus, Erasmus +, Erasmus Mundus has continued;</p> <p>The general principles of quality assurance take into account transparency, compatibility and convertibility. In the strategic plan of the https://www.valahia.ro/en/, the quality is essential and constantly improving;</p> <p>The material base is characterized by the existence of modern equipment for education and research, provides optimal conditions for teaching, as well as practical work in pilot units and experimental stations;</p> <p>All students have access to library services, databases, Internet, dormitory accommodation, social programs, sports facilities, as well as the restaurant.</p> <p>PhD students are very satisfied with their level of education. Many of them are working and continue working in other Universities in Romania or big Companies in Romania.</p>	
<p>Opportunities:</p> <p>Development of collaboration networks and partnerships with foreign universities; Accessing specific grants for student practice;</p> <p>Collaboration with the economic environment for possible technological transfers, service offers, consultancy, initiation of study programs;</p>	<p>Threats:</p> <p>Funding for higher education and research may lead to insufficient funding for the academic process;</p> <p>Domestic and international competition: open competitions to attract students, quality resources and funds;</p>

<p>The interest was shown by young people from various countries in and outside the European space to pursue doctoral degree programs, through the educational offer in languages of international circulation;</p> <p>Use the HORIZON 2020 strategy to encourage and support the university's research programs;</p> <p>Development of new European programs such as "Lifelong learning", Post-doctorate and e-Platforms;</p> <p>Development of existing partnerships with public institutions and the private environment, with the role of generating new sources of financing;</p> <p>Reconfiguring the relations between the public authorities, the university and the economic environment;</p> <p>Generalization of the values of a culture of quality at the level of university education and research;</p> <p>The existence of a dynamic economic environment that requires graduates;</p> <p>The possibility of accrediting new doctoral fields, full of English language;</p> <p>Development of partnerships with other European universities for doctoral studies;</p> <p>Imposing the organization as a partner for the regional economic and social environment;</p> <p>Requirements for participation in projects with companies and institutions in the area of Electrical Engineering</p> <p>Existence of ICSTM with the afferent endowment;</p> <p>National/international visibility of doctoral supervisors;</p> <p>Public-private partnerships with Renault, Arctic and Schneider existing in UVT that can employ PhD students, offer doctoral assignments at the proposal of economic agents and involve them financially.</p>	<p>An aggressive policy of Electrical Engineering in attracting doctoral and postdoctoral students;</p> <p>National legislation that does not stimulate the attraction of foreign students (from outside the EU);</p> <p>A lack of interest of high school graduates for the Doctoral Study;</p> <p>The current economic context, only with a few relevant economic actors;</p> <p>The payment of state employees does not allow financial incentives for research activity;</p> <p>The risk of absorbing funds lower than forecast and for which expenses have been incurred;</p> <p>Financing. The number of budget-funded seats allocated to UVT is small. In addition, we faced the non-rhythmicity of research project competitions.</p> <p>The relatively high average age of doctoral supervisors;</p> <p>Decreasing attractiveness of the doctorate in engineering.</p>
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V. Overview of judgments awarded and of the recommendations

No.	Type of indicator (*, C)	Performance indicator	Judgment	Recommendations
1	A.1.1.1.	<p>The existence of specific regulations and their application at the level of the Doctoral School of the respective university doctoral study domain:</p> <p>(a) <i>the internal regulations of the Doctoral School;</i></p> <p>(b) <i>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;</i></p> <p>(c) <i>the Methodologies for organizing and conducting doctoral studies (for the admission of doctoral students, for the completion of doctoral studies);</i></p> <p>(d) <i>the existence of mechanisms for recognizing the status of a Doctoral advisor and the equivalence of the doctoral degree obtained abroad;</i></p> <p>(e) <i>functional management structures (Council of the doctoral school), giving as well proof of the regularity of meetings;</i></p> <p>(f) <i>the contract for doctoral studies;</i></p> <p>(g) <i>internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs based on advanced academic studies.</i></p>	<i>The indicator is fulfilled.</i>	
2	A.1.1.2.	<p>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.</p>	<i>The indicator is fulfilled</i>	
3	A.1.2.1.	<p>The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic backgrounds.</p>	<i>The indicator is fulfilled</i>	Translate all documents on the website to English.

4	A.1.2.2.	The existence and use of a software program and evidence of its use to verify the percentage of similarity in all doctoral theses.	The indicator is fulfilled	Using an international expert in commission for PhD study and always translate doctoral thesis into English. In this way similarity on English and translation part of the thesis will be reduced to the minimum.
5	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 indicator is fulfilled	University must use more EU grants for foreign PhD and postdoctoral students to have the possibility to be excellent in education and to increase the internationality of the study of Electrical Engineering.
6	*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 indicator is fulfilled	In the future is recommended more private sources for doctoral and postdoctoral study.
7	*A.1.3.3.	At least 10% of the total amount of doctoral grants obtained by the university through institutional contracts and of tuition fees collected from the doctoral students enrolled in the paid tuition system is used to reimburse professional training expenses of doctoral students (attending conferences, summer schools, training, programs abroad, publication of specialty papers or other specific forms of dissemination etc.).	The indicator is fulfilled	In next year must be increased from 7,64% to a minimum of 10% from a doctoral grant for professional training expenses of PhD students.
8	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,	The indicator is fulfilled	

		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.		
9	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 indicator is fulfilled	
10	*A.3.1.2.	At least 50% of all teaching/research staff involved in teaching/research activities related to training programs for advanced university studies or in individual research/art creation programs have a full-time employment contract for an indefinite period with the IOSUD.	The indicator is fulfilled	In the future, University need more advisors with indefinite contract periods.
11	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 indicator is fulfilled	
12	*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 ⁶ does not exceed 20%.	The indicator is fulfilled	

⁶ 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

13	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.	<i>The indicator is fulfilled</i>	
14	*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.	<i>The indicator is fulfilled</i>	
15	*B.1.1.1.	<i>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</i>	<i>The indicator is fulfilled</i>	

		<i>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.</i>		
16	*B.1.2.1.	<i>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.</i>	The indicator is fulfilled	
17	B.1.2.2.	<i>The expelling rate, including renouncement / dropping out of doctoral students 3, respectively 4, years after admission⁷ does not exceed 30%.</i>	The indicator is fulfilled	
18	B.2.1.1.	<i>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.</i>	The indicator is fulfilled	
19	B.2.1.2.	<i>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.</i>	The indicator is fulfilled	
20	B.2.1.3.	<i>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</i>	The indicator is fulfilled	
21	B.2.1.4.	<i>All along with the duration of the doctoral training, doctoral students in the domain receive counseling/guidance from functional guidance commissions, which is reflected in written guidance and feedback or regular meeting.</i>	The indicator is fulfilled	

⁷ 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.

22	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 guidance shall not exceed 3:1.	The indicator is fulfilled	
23	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 indicator is fulfilled	Recommendation for Electrical Engineering to insist on applied science papers. In the future Electrical Engineering according to trends in the development of electric vehicles and renewable energy and waste energy.
24	*B.3.1.2.	<i>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.</i>	The indicator is fulfilled	
25	*B.3.2.1.	<i>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.</i>	The indicator is fulfilled	
26	*B.3.2.2.	<i>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.</i>	The indicator is fulfilled	
27	C.1.1.1.	<i>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:</i>	The indicator is fulfilled	

		<p>(a) the scientific work of Doctoral advisors;</p> <p>(b) the infrastructure and logistics necessary to carry out the research activity;</p> <p>(c) the procedures and subsequent rules based on which doctoral studies are organized;</p> <p>d) the scientific activity of doctoral students;</p> <p>e) the training program based on advanced academic studies of doctoral students;</p> <p>f) social and academic services (including for participation at different events, publishing papers etc.) and counselling made available to doctoral students.</p>		
28	*C.1.1.2.	<p>Mechanisms are implemented during the stage of the doctoral study program to enable feedback from doctoral students allowing them to identify their needs, as well as their overall level of satisfaction with the doctoral study program 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.</p>	The indicator is fulfilled	
29	C.2.1.1.	<p>The IOSUD publishes on the website of the organizing institution, in compliance with the general regulations on data protection, information such as:</p> <p>(a) the IOSUD/Doctoral School regulation;</p> <p>(b) the admission regulation;</p> <p>(c) the doctoral studies contract;</p> <p>(d) the study completion regulation including the procedure for the public presentation of the thesis;</p> <p>(e) the content of the study programs, based on advanced academic studies;</p> <p>(f) the academic and scientific profile and thematic areas/research themes of the Doctoral advisors within the domain, as well as their institutional contact data;</p> <p>(g) the list of doctoral students within the school, with necessary information (year of registration; Advisor);</p>	The indicator is fulfilled	<p>More PhD and postdoctoral PhD study of Electrical Engineering based on the English language</p>

		<p>(h) information on the standards for developing the doctoral thesis;</p> <p>(i) information on the opportunities for doctoral students aiming to attend conferences, to publish articles, awarding scholarships etc.</p> <p>(j) 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.</p>		
30	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.	<i>The indicator is fulfilled</i>	
31	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.	<i>The indicator is fulfilled</i>	
32	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.	<i>The indicator is fulfilled</i>	Build virtual joint access laboratory for better online activities of PhD students. This means virtualizing real laboratories and giving access to students to training in virtual space, before starting real laboratory work.
33	*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.	<i>The indicator is fulfilled</i>	The institution must increase the number of PhD students in Erasmus projects incoming and outgoing abroad. Internationalization is a key to educational success in the future.

		level of the European Higher Education Area.		
34	C.3.1.2.	In the evaluated doctoral study domain, support is granted, including financial support, to the organization of doctoral studies in international cotutelage or invitation of leading experts to deliver courses/lectures for doctoral students.	The indicator is fulfilled	
35	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 indicator is fulfilled	<i>Internationalization is a key for a future for an excellent University. This level of Erasmus, Ceepus and other mobilities must be doubled in the future.</i>

VI. Conclusions and general recommendations

After full evaluation The "Valahia" University of Târgoviște, Doctoral study of Electrical Engineering document's and talking with professors, rectors, deans, students, chief of laboratories, employers of PhD students, etc. and after reading plans and programs, annexes, and all other document's, I have only one decision. The "Valahia" University of Târgoviște, Doctoral study of Electrical Engineering fulfilled all 35 indicators.

In the future University needs more collaboration activities according to the internationalization of Doctoral Study, University needs more advisors with indefinite contract periods, also must be increased from 7,64% to a minimum of 10% money from a doctoral grant for professional training expenses of PhD students.

The "Valahia" University of Târgoviște, Doctoral study of Electrical Engineering, fulfilled all 35 indicators for of IOSUD evaluation.

VII. Annexes

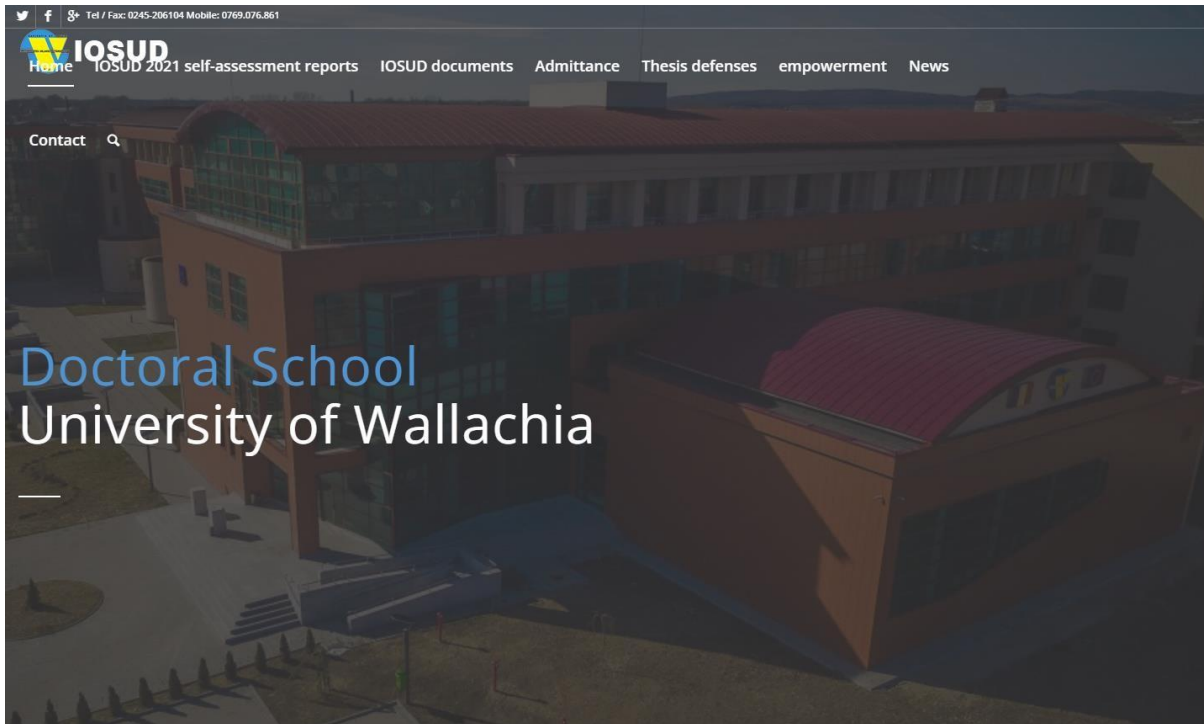


Admission of candidates enrolled in undergraduate studies at the University of Wallachia in Targoviste, in the academic year 2020/2021, is made through COMPETITION - the admission criterion being the average of the baccalaureate exam - 100% weight.

If a candidate enrolls in two or more undergraduate fields within the structure of the "Valahia" University of Targoviste, the benefits from a 50% reduction of the registration fee starting with the second enrollment

September 7 - 21, 2020

<i>specialization</i>	<i>Dom.</i>	<i>Budget</i>	<i>Toll</i>
Telecommunications Technologies and Systems (TST)	<i>EIT</i>	20	28
Applied Electronics (ELA)	<i>EIT</i>		
Automation and Applied Informatics (AIA)	<i>out</i>	4	26
Industrial Energy (EI)	<i>take</i>	11	14
Electrical Engineering (EH)	<i>EHI</i>	13	14
Total		48	82



Presentation of the PhD in Electrical Engineering

The doctoral school of electrical engineering, works through OM no. 3597 / 14.04.2010 of MECTS and by obtaining the title of doctoral supervisor by prof.dr.ing. Horia ANDREI and prof.dr.ing. Dinu COLTUC (OM no. 4631 / 11.08.2010).

The authorization was possible at the end of a long journey to increase the quality of education, research, management of the structures of the Faculty of Electrical Engineering (FIE) and the competencies assimilated by the FIE faculty, especially those now PhD leaders, developed over about 17 years.

In this sense, the Doctoral School, through FIE and UVT structures, offers - bachelor's and master's specializations accredited by ARACIS, appropriate indicators on tenured staff, accredited research centers, access to national and international documentation resources on a subscription basis, generous study spaces, high-performance laboratories, national and international collaborations with prestigious universities and companies.

In the doctoral structure with frequency, the curriculum addresses, in the first year, disciplines such as - Simulation of electrical circuits, Signal and image processing, Distributed systems, Conversion and storage of renewable energies, Techniques and equipment for energy quality assurance, Integrated signal processing systems, respectively in the next 2 years, research topics in areas such as - systems for real actions to reduce the risk of accidents due to electrical causes, measurement and analysis of deformation regime in electrical installations, effects introduced by changing the parameters of linear electrical circuits, reversible marking, demosaic, the complexity of the algorithms max./min. etc .

The research topics and the topics of the doctoral theses can be implemented in the laboratories of UVT, of the traditional national partner companies, or in those of foreign partners such as - Polytechnic Institute of Grenoble or Polytechnic Institute of Turin with which UVT has signed collaboration contracts for a doctorate.



PhD supervisors

- Prof. univ. Dr. VASILE Nicolae
- Professor ANDREI Horia - Leonard
- Professor COLTUC Dinu
- Professor DOGARU-ULIERU Valentin

Methodologies, regulations, procedures

The institutional regulation for the organization and development of doctoral study programs at the University of Wallachia in Targoviste, approved by the Senate of the University of Wallachia in Targoviste in its meeting of January 31, 2019, by decision no. 47 D.

The regulation of organization and functioning of IOSUD, approved by the Senate of the University of Wallachia from Târgoviște in its meeting of January 31, 2019, by decision no. HSU Nr. 47 DI

The Regulation of the Doctoral School of Economics and Humanities, approved by the Senate of the University of Wallachia in Târgoviște in its meeting of January 29, 2020, by decision no. 61 E

Regulation of the Doctoral School of Engineering Sciences, approved by the Senate of the University of Wallachia in Târgoviște in its meeting of January 29, 2020, by decision no. 61 E

Methodology for evaluating doctoral theses by the guiding committee

Minimum standards for the elaboration of the doctoral thesis

Completion of doctoral studies - Operational procedure

Completion of doctoral studies using alternative teaching methods - Operational procedure

Research Center for Electrical Engineering, Electronics and Information Technology

- *Research Center in Electrical Engineering, Electronics and Information Technology*
For additional information, access the link <http://ccieeti.valahia.ro/index.html>
- *Energy-Environment Research Department*
For additional information access the link [DCEM Valahia - Just another WordPress site](#)

Research Center in Electrical Engineering, Electronics and Information Technology:

Handling and Characterization at Micro and Nano Scale



Fields of research

- Microelectronics and Micromechatronics
- Design of embedded systems
- Advanced micro and nanoscale handling and characterization devices\
- Microelectromechanical generators and systems based on piezoelectric materials

Research projects

- Advanced micro and nanoscale handling and characterization devices, PN-II-RU-TE-2011-0299, 2011 - 2014, 900,000 RON, www.adman.valahia.ro
- MicroElectroMechanical Generators Based on High-Performance Piezoelectric Materials, FP7-PEOPLE-ERG 276991/2010, A. Ivan - director
- Reconfigurable Microassembling and Self-Actuating Micro-Opto-Electro-Mechanical Systems, PN-II-RU-PD-2012-3, 2013 - 2015, 300,000 RON, A. Ivan - tutor
- A New On-Chip Magnetically-Actuated Mobile Micro robotic Agent and Embedded Control System, PN-II-RU-PD-2012-3, 2013 - 2015, 300,000 RON, A. Ivan - tutor

Image Processing Broadcasting and HD Television





Fields of research

- Image processing
- Technologies, systems and networks for fixed and mobile communications. Signal processing for remote information transmission.
- Techniques, algorithms and methods developed at the level of protocol models for telecommunications
- architectures; Broadcasting and high definition television

- Research projects
- Intelligent system for management, monitoring and maintenance of pavements and roads using modern imaging techniques - Pav3M, 2014 ÷ 2017, contract PN-II-PT-PCCA- 2013-4-1762, 180,000 lei (partner), Univ. Babes Bolyai from Cluj-Napoca, Univ. The technique from Cluj-Napoca, Univ. Valahia din Targoviste, sa,<https://econ.ubbcluj.ro/PAV3M/Methods for predicting the>

- Evolution of infantile hemangiomas to prevent disfiguring complications by multiple interventional methods - 2014 ÷ 2017, PN-II-PT-PCCA- 2013-4-0201, 175,000 lei (ground floor), Carol Davila University of Medicine in Bucharest, Don Polytechnic University of Bucharest, Valahia University of Targoviste, sa,<http://imag.pub.ro/hemacad/>

- New optical methods and micro and nano investigation protocols to streamline early diagnosis, monitoring, prognosis and therapy in non-melonic skin cancer, UEFISCDI, PN-II-PT-PCCA-2011-3.2-1162, D. Coltuc UVT partner manager (600,000 lei, 2011 - 2014), <http://nanolascan.ro/>

- Study on Multi-non-binary turbo codes and Reed Solomon turbo codes, UEFISCDI. PN-II-RU-PD-2012-3-0122, D. Coltuc, guardian, <http://turbocod.valahia.ro/>



A002 / course room

A008 / laboratory file

A009 / laboratory file

A013 / laboratory file

A020 / laboratory file

A102 / course room



A103 / laboratory file

A104 / laboratory file

A105 / laboratory file



A107 / laboratory file

_A108 / laboratory file

A109 / laboratory file



A110 / laboratory file



A112 / laboratory file



A114 / laboratory file



A115 / laboratory file



A116 / laboratory file



A117 / laboratory file



A118 / laboratory file



A119 / laboratory file



A120 / laboratory file



A305 / laboratory file



A307 / laboratory file



A308 / laboratory file



**Research laboratories - Research Centers Institute of Scientific and Technological Research
Multidisciplinary**

Laboratory - Energy Conversion to Grid Connected Systems (B23)



Photovoltaic experimental platform

Active surface: over 250m²; Installed power: approximately 25KWp; Composed of: Si ribbon PV modules, hydrogenated amorphous Si. PV modules, monocrystalline - Si PV modules, copper - indium - gallium selenide PV modules, flexible PV modules, transparent PV modules; Served by inverters with powers between 2.5 and 9.3 KW; Two positioning platforms, one of them dedicated to Solar Array type installations.

Department of Environmental Energy Research

Laboratory - Materials Used in Energy Conversion (C13, C14)



Installation for vacuum deposition of metal and dielectric layers by sputtering

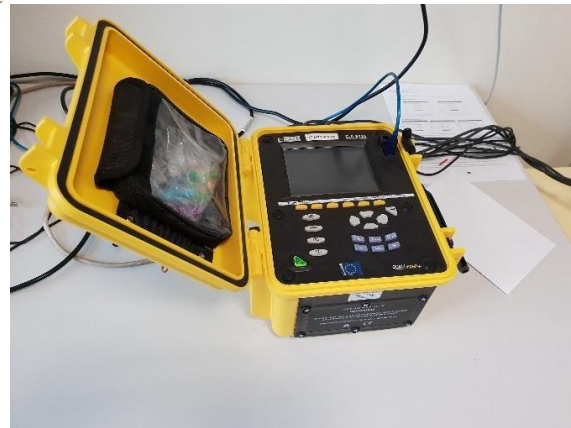
Electron Beam Thin Vacuum Deposition Plant (E -BEAM)

Centrifugal thin-film deposition plant (SPIN - ON)

Installation for thin film deposition by controlled immersion (DIP - COATER)

Planar Plasma Reactive Corrosion Plant (RIE)

**Department of Environmental Energy Research
Laboratory - Intelligent Distributed Energy Management Systems (B24)**



- Professional signal generator
- Laboratory function generator
- Professional multimeter
- RLC bridge
- Three-sensor gas analyzer
- Portable spectrum analyzer
- Programmable current and voltage sources 600 V and 5 A source
- Electronic components soldering station
- Accessories for electronic equipment

**Research Center in Electrical, Electronic Engineering and Information Technology Laboratory -
Electrical and Electronic Systems used in Renewable Energy Sources (B22)**



- Real time computer
- Micromanipulation platform
- High voltage amplifier for piezoelectric elements
- XYZ platform with automatic / manual operation
- Technical binocular microscope with articulated arm
- High precision oscilloscope
- 3-axis CNC

**Research Center in Electrical Engineering, Electronics and Information Technology Laboratory -
Electrical and Electronic Systems used in Renewable Energy Sources (B12)**



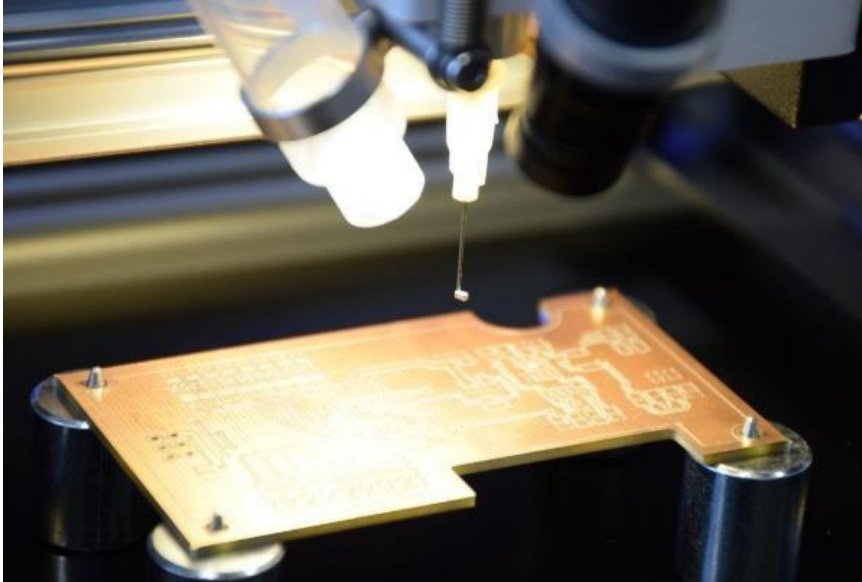


- OKI C841 printer - 1 piece
- Intel core i3-2120 3.3GHz computer, 4Gb ram, AMD Radeon HD 7400 video card - 5 pieces
- Intel core i7 980 computer 3.33GHz, 24Gb ram, Nvidia GeForce GTX 580 1 piece video card
- Lecroy waveSurfer 64Xs oscilloscope 1 piece
- Teledyne Lecroy HDO 6104 - MS Oscilloscope - 1 piece

- Bruel & Kjaer 2250 LIGHT Sound Level Meter - 1 piece
- Bruel & Kjaer 3653 - A SoNoScout - 1 piece
- Acoustic Test Room 1.5x1.5x1.8m - 1 piece
- Plate Data Instruments SCC 68
- EPSON Video Projectors - 2 Pieces

Center for Research in Electrical Engineering, Electronics and Information Technology

Center for the Development and Prototyping of Printed Wiring (C11)



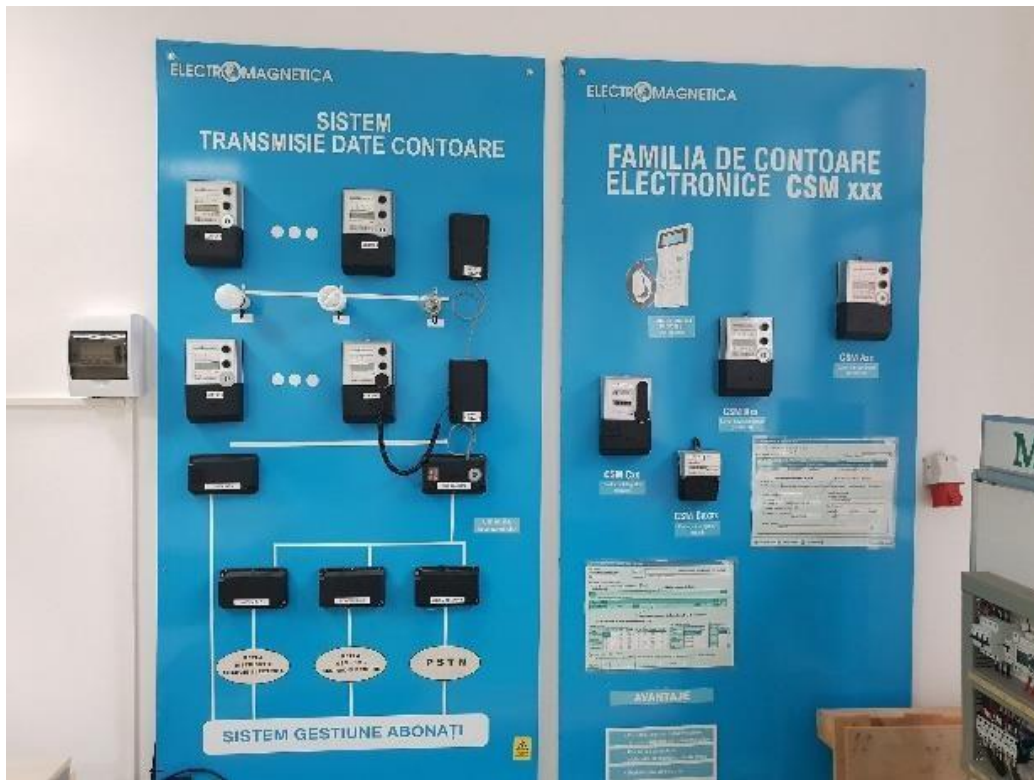
Research laboratories Faculty of Electrical, Electronics and Engineering Information technology

Electrical equipment and installations; Modeling and simulation of electrical networks (A114)



- Electrical panels Prisma Plus Schneider Electric
- Masterpact NW08 Low Voltage Circuit Breakers, 1000 V Vigi
- Differential Protection Circuit Breakers, 500 V Source Inverter
- Inverter controller
- Smoke detectors
- Smoke Detector Modems iCT Electromagnetic
- Contactors, 220 V, 63 A Fuse Separators, 690 V, 50 A
- Removable shock absorbers iQuick PRD, 230V Signal lamps
- C applications - local variant, LabVIEW 8, MATLAB, EDSA, VISUAL C ++.

Use and Quality of Electricity (A008)



Drive stand with synchronous machines and asynchronous machines, contains:

- Excitation voltage controller - SO3301-1Z;
- Synchronous machine - SE2662-5Q;
- Three-phase power supply system - SO3212-5U;



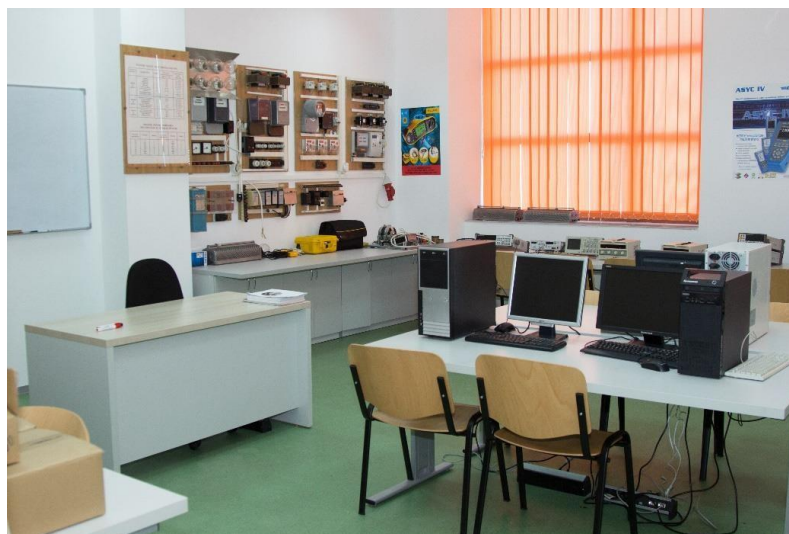
- Asynchronous electric drive machine - SE2663-6U;
- Control unit of the drive machine - SE2663-6U;
- Tachometer - SE2663-6U;
- Coupling and safety system - SE2662-6B / SE2662-6C / SE2662-6A;
- Resistant decedent load - SE2662-8P;
- Capacitive decedent load - SE2662-8H;
- Inductive decedent load - SE2662-8C;
- Measuring devices - SO5127-1Z;
- Three-storey model housing;
- Documentation.
- The stand corresponding to the synchronization circuit, contains:
 - Power switch module - SO3301-5P;
 - Dual voltmeter - SO3213-3W;
 - Dual frequency meter - SO3213-1L;
 - Synchronoscope - SO3301-5Z;
 - Synchronization indicator - SO3212-6T;
 - Cosmometer - SO5127-1Z;
 - Phase-sequence indicator - SO3301-5Z;
 - Ammeter- SO5127-1Z.
- The power factor control stand contains:
 - Fi basket controller for generator - SO3301-5Z;
 - Documentation.
- The power factor compensation stand contains:
 - - Reactive power controller - SO3301-5D;
 - - Switching capacitor bank - SE2662-8H;
 - - Asynchronous motor with 230V / 400V cage rotor - SE2662-5G;
 - - Magnetic braking system - SE2663-6U;
 - - Brake system control unit - SE2663-6U;
 - - Coupling and safety system - SE2662-6B / SE2662-6C / SE2662-6A;

Engineering Control Systems and Devices (A009)



Complex measurement and control command stand for three-phase voltage converters (CCTV 3x400 6/165) composed of: - CCTV 3x400 6/165, three-phase active power transducer with indicator instrument (4-350 W), three-phase active power transducer with indicator instrument (3.5 W), single-phase active power transducer with indicator instrument (250 W), three-phase active power transducer with indicator instrument (2 kW); The current transducers are type TPM 79 with 4-90 mA current loop output with direct connection.

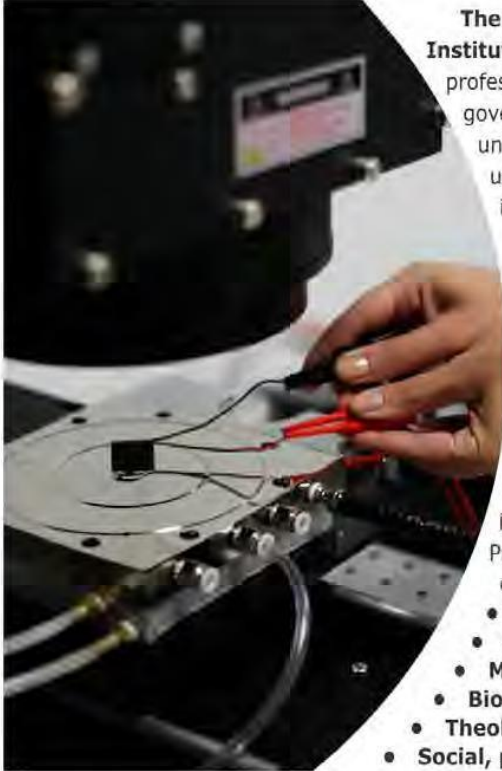
Electrical and Electronic Measurements (A103)





- Direct measurement of active and reactive electricity in alternating mode Three-phase (three-phase meter with double tariff type T-2CA43DTA 3x400 / 230, 10 (40) A, 50Hz, induction, class 2 - 1 pc, three-phase reactive energy meter type T - 2CR43, 3x400, 5A, 50Hz, induction, class 2.5 - 1 pc, analog ferromagnetic ammeter type E 541, (0-5A) ~ 50Hz -1 pc, analog ferromagnetic voltmeter type E541, (0-250V) ~ 50Hz - 1 pc, incandescent lamps, 230V, 500W - 6 pc)
- Indirect measurement of active and reactive electricity in three-phase alternating mode with voltage measuring transformers (voltage measuring transformer 500 / 100V type TIB05 - 2pcs, active energy meter type ELA 7Wadq'1 / 6, 3x100V, 5A, 50Hz, 4000imp / KWh, three-phase reactive energy meter type T - 2CR32, 2400rot / KWh, 3x100V, 5A, 50Hz, class 2.5 - 1pc)
- Indirect measurement of active and reactive electricity in three-phase alternating mode with current measuring transformers (three-phase active energy meter type T - 2CA43, 960 rot / KWh, 3x400 / 230, 3x5A, 50Hz, class 2-1 pcs, three-phase reactive energy meter type T - 2CR43, 3x400 / 230, 3x5A, 50Hz, class 2.5 - 1pc, ballast for mercury lamp 230V, 250W, 960 rot / KWh, type 3192, $\cos\phi = 0.55$; , 2 , 15A; 50Hz. - 3pcs, HgLi - 250W mercury vapor lamp type TUNGSRAM - 3 pcs, voltage measuring transformer 30 / 5A, type - CIBO - 05)
- Single-phase active electricity measuring stand (single-phase active electricity meter type 5CM4UD, 230V, 10 (40) A, 50 Hz, 480rot / KWh, class 2. - 1pc, single-phase active electricity meter with double tariff type 5CM4DTB, 230V, 10 (40) A, 50 Hz, 480rot / KWh, class 2 - 1pc, single-phase electricity meter TYPE CEEM 16-11, sodium vapor lamp type 1LPNT - 250W - 3 pcs, capacitor type MKP 18 μ F, 250 V, 50 / 60Hz - 3pcs, analog voltmeter AEM E541, ferromagnetic, (0-400V), 50Hz, class 1.5, analog voltmeter AEM E541, ferromagnetic, (0-400V), 50Hz, class 1.5 , analog frequency meter AEM44L1 / 220V, magnetolectric with rectifier, 45-55Hz, class 1.5)
- Electric power measuring stand (incandescent lamps, 230V, 500W - 6 pcs, analog voltmeter AEM 1EQ144, ferromagnetic, 0-600V, 50Hz, ~, class 1.5, analog voltmeter AEM E6 ferromagnetic, 0-250V, 50Hz, ~, class 1.5, analog frequency meter AEM 44L1- Hz, magnetolectric with rectifier, 230V, 45-55Hz, class 1.5, analog ammeter AEM EQ96 ferromagnetic, 0-6A, 50Hz, class 1.5, wattmeter analog AEM D4 - ferrodynamic, 0-800W, 50Hz, class 2.5, AEM D4 - ferrodynamic heater, 0-800W, 50Hz, class2.5)





The Multidisciplinary Scientific and Technologic Research Institute (ICSTM) of "Valahia" University of Targoviste (UVT) is a professional and independent organization, apolitical and non-governmental, legally dependent of UVT, created to attend the university personnel and the other specialized collaborators of the university in realizing research projects, financed by national and international programs and trough contracts with businesses.

The ICSTM mission is to provide, coordinate, monitor and support scientific research, experimental development, innovation and technological transfer; consultancy, expertise, training and professional development in the areas of scientific competence of UVT. ICSTM reunites all the research centers accredited institutional in UVT. Now, ICSTM is composed of 15 research centers where the active staff and associated holders of UVT operate. Research infrastructure is spread over an area of 6720 m² developed area and 2220 m² built area, which includes 35 research laboratories and its own administrative body

Priority research fields of ICSTM are:

- **Renewable energy and electric systems;**
- **Environment and physico-chemical processes;**
- **Nanomaterials and micromechanics;**
- **Mechanical engineering and materials science;**
- **Biotechnologies and biotechniques;**
- **Theology ;**
- **Social, political and communication sciences;**
- **Economical sciences.**

The Institute has the latest IT systems, software for designing and modeling in specific research areas. Among most representative features, we can include: experimental photovoltaic and wind power platform, experimental thermosolar platform, system for developing and prototyping PV modules, inductively coupled plasma mass spectrometer (**ICP-MS**), electric vacuum deposition and dielectric layers by sputtering, scanning electron microscope (**SEM**), facility for processing micromaterials and microchannels with focused electron beam (**FEB**), atomic force microscope (**AFM**), laser ablation, nanoindenter. In our research laboratories can be realized structural analysis, qualitative and quantitative analysis, morphological and structural determinations, atomic force microscopy (2D and 3D topography, phase contrast, adhesion forces etc.), electrical characterizations, prototyping and designing.



Nanomaterials and nanotechnologies

SCANNING ELECTRON MICROSCOPE (SEM) SU-70 COUPLED WITH ENERGY DISPERSIVE SPECTROMETER (EDS), WITH WAVELENGTH DISPERSIVE SPECTROMETER (WDS) AND E-BEAM LITHOGRAPHY SYSTEM (EBL)

The Scanning Electron Microscope (SEM) SU-70 (manufactured by Hitachi, Japan) is a very sensitive research equipment, with field emission, and is based on a Schottky electron source. SU-70 includes several modules required for surface analysis of materials; for processing materials nanolithography (EBL), energy dispersive spectrometry (EDS) and wavelength dispersive spectrometry(WDS).

NANOINDENTER AGILENT G200



Nanoindenter Agilent G200 is an instrument for indentation and scratch tests, thus mechanical properties can be determined for a wide range of materials including metals, composites, ceramics, polymers, fibers, thin films.

Nanoindenter Agilent G200 is the world's most accurate, flexible and userfriendly instrument for nanoscale mechanical testing. Electromagnetic actuation allows the Nano Indenter G200 to achieve unparalleled dynamic range in force and displacement. Load capacity can be expanded to 500mN, maximum depth of indentation 500 μm , load resolution is ≤ 50 nN, force at contact ≤ 10 μN , scratching maximum distance > 100 mm and speed of scratching - 100nm/s to 2mm/s.

Nanoindentation is a technique for measuring mechanical properties such as hardness and elastic modulus Young of small volumes of materials. A tiny tip of very precise geometry is made to press into a sample using a small load in order to make minute indentations on the sample. The load applied and the depth of penetration of the tip into the surface are measured in real-time during the indentation process. As the geometry of the indenter tip is known, the data recorded can be analysed to determine the indentation area.

ATOMIC FORCE MICROSCOPE (Ntegra Prima by NT-MDT)



The device is capable of performing more than 40 measuring methods, which allows analyzing physical and chemical properties of the surface with high precision and resolution. It is possible to carry out experiments in air, as well as in liquids and in controlled environment. The new generation electronics provides operations in high-frequency (up to 5MHz) modes. By AFM three-dimensional images of surfaces can be obtained (insulators or conductors) with a nano resolution in the lateral plane and subangstrom vertically. This device is used in basic research as well as on larger scale in the industry where it has a special role in the development of nanotechnology. AFM is the most used technique of the Surface Scanning microscopy (SPM).



AXIO IMAGER M2M MICROSCOPE

Research microscope for examination of specimens by transmitted light brightfield, phase contrast and bright field incident light and dark fluorescence, Axio Imager M2M combines high quality optics and bright fluorescence to provide clearer images. Contrast control and light provides certainty using the microscope in different ways and obtaining reproducible results. It is designed as a platform dedicated to applications in cell biology, neuroscience, molecular genetics and pathology.

The device is equipped with a motorized stand for sample, motorized epifluorescence objectives (5X - 100X) plus camera and software that allows the microscope to be optimally used for different applications with maximum efficiency and comfort.

PRIMO STAR MICROSCOPE



- Primo Star has been developed with long-term use and great durability in mind. It incorporates all of ZEISS's experience in optical microscopy adapted to the most sophisticated environmental conditions in classroom settings and laboratory work.
- Together with its many practical accessories, Primo Star can be used for education, in the laboratory, doctors' practice field. It offers the possibility to investigate the samples in transmitted light at a magnification between 4X and 100X. Optional, to the equipment it can be attached a digital video
- camera (Axiocam 105) which, by the microscope software allows real-time data acquisition. The obtained images could easily be converted from 2D format in 3D through its software for a better viewing.

INSTALLATION FOR METAL AND DIELECTRIC LAYERS

DEPOSITION BY SPUTTERING





This equipment is a physical vapor deposition (PVD) method for creating thin films, using **sputtering depositions**. The device contains two sputtering sources or magnetrons, which can be loaded with the material of the desired coating composition; the sputtering is achieved with high voltage DC or RF argon plasma, but other gases can be used to create coatings via the reactive sputtering method. This equipment is configured for argon and nitrogen. Up to 6 materials sequentially on substrates up to 250 mm may be submitted.

INSTALLATION FOR THIN FILM DEPOSITION IN VACUUM WITH ELECTRON BEAM (E-BEAM)





HEX MANTIS Deposition LTD is a modular system for submitting metal and dielectric thin films in high vacuum.

SPECIFICATIONS:

- Quick change of deposition sources without having to use tools;
- Quartz microbalance with (QCM) and independent shutters from sources and sample holder with the size of 100mm, which allow highly accurate thin films up to monolayer and sub-monolayer;
- An electron beam evaporator in vacuum, with 32mm diameter, water cooled and electronic control of software for monitoring the flow rate control;
- Power supply 250W, with bar evaporation and crucible without requiring hardware changes;
- A crucible Molybdenum volume 390mm³ and a Molybdenum connector for bar evaporation;
- The turntable that sits the sample contained cooling water to allow the deposition of metal films on a polymeric substrate (lift-off procedure) for processing samples lithographed;
- Turbomolecular pump capacity 80 l/s;
- Software that allows programming sequences for submission by the user from the computer;
- The rate of deposition evaporator to 100mm distance: submonolayer/min \approx 5 nm/min

Address:

Institute of Multidisciplinary Research for Science and Technology

“Valahia” University of Targoviste

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Târgoviște, Dâmbovița

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Conference

- Electronics, Computers and Artificial Intelligence, ECAI (<http://ecai.ro/>)



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ECAI 2022
14th Edition
INTERNATIONAL CONFERENCE on Electronics, Computers and Artificial Intelligence
30 June - 01 July 2022

Ploiesti, ROMANIA

- National Conference of New and Renewable Energy Sources (CNSNRE) - 2017(<http://cnsnre2019.valahia.ro/>)



[Home](#) | [Program](#) | [Paper submission](#) | [Registration](#) | [Topics](#) | [Dates](#) | [Contact](#)

18th National Conference of New and Renewable Energy Sources

28-29 November 2019, Targoviste Romania

Valahia University of Targoviste, UVT
 Energy Environment Research Department,
 Faculty of Electrical Engineering, Electronics and Information Technology
 National Institute for R&D in Electrical Engineering, ICPE-CA
 Romanian Electrotechnical Committee, CER
 New Energy Sources Employers' Association, SUNE
 Center for Promotion of Clean and Efficient Energy in Romania, ENERO

CNSNRE 2019 General Chairman

Prof. Florin Teodor TĂNĂSESCU,
 President of the Romanian Electrotechnical Committee, CER
 Vice President of the Technical Sciences Academy of Romania, ASTR



Chairman's Message

Dear Member of the Renewable Energy Sources Community,

It is my great pleasure to invite you to participate in the topical National Conference CNSNRE 2019, the XVIII edition - a great opportunity to network with scientists, engineers, policy makers and other specialists and to promote Renewable Energy Sources -RES.

CNSNRE 2019 will provide a forum for discussions in the respect of:

- RES - Building the Sustainable Energy Future;
- Renewable Energy Policies in a Time of Transition;
- IoT (the Internet of Things) and Educational Perspectives for RES;

I hope you will actively contribute to this Events and I look forward to seeing you in Targoviste.

- International Symposium of Electrical Engineering (ISEE)
- World Energy System Conference (WESC)
- Energy Transport and Environment Control Application (ETECA)
- FIE Colloquia (PDF)
- Round tables (PDF)

➤ ***The library of the Wallachian University of Targoviste***



➤ ***Online databases:***

- ANELIS PLUS - National Electronic Access to Scientific Literature for Supporting the Research and Education System in Romania - scientific databases for study and research in various fields
 - ScienceDirect Freedom Collection, Elsevier - provides access to online scientific research journals, academic books, book series and online encyclopedias; covered fields: humanities, medicine, exact sciences, technology.
 - Web of Science - Core Collection, InCites Journal Citation Reports, Derwent Innovations Index, Clarivate Analytics - mainly includes scientific journals, conferences and books; covered fields: humanities, social sciences, arts, exact sciences.
 - PROQUEST Central - offers access to scientific research journals in an online format, reports, newspapers, books; fields found: science and technology, medical sciences, literature, society and culture, art, history, religion, computers, education, business and much more.
 - Scopus, Elsevier -c comprises; scientific journals, books and conference papers; fields found: medical sciences, technology, social sciences, arts, humanities.
 - de Gruyter ebooks - includes academic papers of the highest level; fields covered: humanities, social sciences, medicine, natural sciences, law.
 - Cab ebooks - provide online access to authoritative information from a top scientific publisher; fields: agriculture, environment, health, nutrition, etc.
- *Teachers and students of the University of Wallachia in Targoviste can access the subscribed databases from the University's computer network, based on IP or remotely, through mobile access. To access it is necessary to create an account, as follows:*
- access <http://www.e-nformation.ro>
 - select the "Institutional profile" option, then select "Register now"
 - fill in your first name, last name and e-mail, then click on "Register"; you will receive an email to complete the registration
 - access the link in the message and fill in the fields in the form: password, institution, function and field of interest, then click on "Submit"
- *Supply Chain Management Journal*
- *JOAM - The Journal of Optoelectronics and Advanced Materials is co-edited by National Institute of Optoelectronics (INOE 2000) and National Institute of Material Physics (NIMP)*



➤ **ONLINE RESOURCES**

- PROEUROPEANA Digital Library of Cultural Publications
- Bucharest Digital Library r
- DOAJ (Directory of Open Access Journals)
- DOAB (Directory of Open Access Books)
- UNESCO Digital Library
- EUROPEANA Digital Library
- Humanitas Publishing House
- Geographical Romania

The screenshot shows the EERIS (Engage in the European Research Infrastructures System) website. At the top left is the EERIS logo with the tagline 'Engage in the European Research Infrastructures System'. To the right, there is a search bar with the text 'Browse the registry for research', a search icon, and buttons for 'Sign Up' and 'Login'. The main content area features a circular profile picture of a building, followed by the text 'INSTITUTE OF MULTIDISCIPLINARY RESEARCH FOR SCIENCE AND TECHNOLOGY' and '“VALAHIA” UNIVERSITY OF TÂRGOVIȘTE'. Below this, a short link is provided: 'Short link: <https://eeris.eu/ERIF-2000-000Y-0122>'. A visit counter shows '3022 Visits' with a refresh icon. At the bottom, a paragraph of text describes the university and its research institute.

“Valahia” University of Targoviste it is a state university, founded in 1992, with the qualifier “HIGH DEGREE of CONFIDENCE” granted by the Council of ARACIS. The university is evaluated by the European University Association through Institutional Evaluation Programme. Multidisciplinary Scientific and Technologic Research Institute (ICSTM) of “Valahia” University from Targoviste (VUT) is a professional and independent organization, apolitical and non-governmental, legally dependent of VUT, cr...

Study mobility for students of the "Valahia" University of Târgoviște, within the Erasmus + program

GET IN TOUCH!



Valahia University of Targoviste

The "Valahia" University of Târgoviște is offering a number of 276 Erasmus Plus mobility scholarships for students, masters and doctoral students working in the higher education institution from the old seat of Wallachia. The university has a number of 90 international partnerships under the Erasmus Plus Program of the European Union, with universities from 17 EU countries (Bulgaria, Czech Republic, Croatia, Cyprus, Estonia, Finland, France, Germany, Greece, Italy, Latvia, Lithuania, Poland, Portugal, Spain, Slovakia, Hungary) and 11 countries outside the Community (Algeria, Belarus, Bosnia and Herzegovina, China, Chile, Georgia, Haiti, the Republic of Moldova, Norway, Serbia, Turkey).

The objectives of the mobilities are to offer students the opportunity to benefit from an educational, linguistic and cultural point of view from the study experience in other European countries, to promote cooperation between institutions and to enrich the educational environment of host institutions, to facilitate



credit transfer and recognition periods of mobility spent abroad, using ECTS or a compatible credit system.

All students selected for the Erasmus Plus scholarship will be assisted by the International Relations Office and Erasmus Plus before completing the mobility, for the entire period of study abroad and after returning from mobility. Given the global pandemic situation, but also more optimistic estimates for the next academic year, the University "Wallachia" in Targoviste will provide, as before, its full support to Erasmus Plus students accepted for studies or who are in international mobility.

Those interested in this interuniversity mobility program are asked to access the web page dedicated to the Erasmus Plus Call at: <https://www.valahia.ro/en/international-relations/357-erasmus> or to contact the university's Erasmus Office (email : relint@valahia.ro , tel./fax: +40 245 211 809).

The internationalization strategy of UVT is based, on the one hand, on the values of the communities it serves, and on the other hand, on its institutional ethos shared by the university community from the former royal residence. The impressive medieval and modern history of Târgoviște seen in a Southeast European context offers some key episodes that capture fundamental values of its inhabitants, such as freedom, justice, tolerance, appetite for quality education, cultural and religious openness, multilingualism, propensity for quality life and technological innovation, shared and strengthened by the higher education institution through its programs and services.

Fully harmonized with the priorities set out in the „New EU Agenda for Higher Education” and other European and national reference documents in the field of internationalization, the new UVT strategy, in force since 2021, envisages, from among the values it seeks to promote, to contribute to the strengthening of democratic, pluralistic principles, multiperspectivity, critical thinking, dialogue and academic ethics among academia, thus giving a significant role to the formation of transversal competencies that are meant to contribute in fulfilling of this desideratum. The competencies transmitted through university programs - and in this respect foreign language programs, co-doctorates, projects and international partnerships will serve as a vector of internationalization - will be uplifted to reflect developments in the field of knowledge at European and international level, as well as the need to master the learning contents thoroughly, thus reflecting the choice of the university community for excellence and academic performance.

Strengthening digital skills and educational processes such as distance learning - and not only in the context of the current global pandemic - is another objective of the internationalization strategy, which is also based on a positive experience gained during the state of emergency last year and this spring when the university managed to achieve remarkable results in terms of transferring teaching to the online environment through the use of the Microsoft Teams and Moodle platforms in particular for the entire community of professors and students of the university. These digital competences thus assimilated will also contribute to the achievement of another common goal in the UVT strategy and the New EU Agenda for Higher Education, Growth and Sustainable Employment.

The extension of international collaborations within the research activities carried out by UVT and a closer correlation of the transfer of research results in the educational sphere is another priority of the internationalization strategy which is subsumed under the objective of increasing the quality, visibility and efficiency of research. From this point of view, the Institute for Multidisciplinary Scientific and Technological Research plays a key role, as it is already involved in European and international projects with an important economic impact for the university and for the local and regional community, as a whole. UVT aims, in order to deepen the internationalization of research, to attract international researchers to



existing research centers and teams within ICSTM through the EU's Horizon 2020 and Marie Skłodowska-Curie programs, as well as to obtain European funding sources dedicated to researcher mobility. Relationships with the business environment, establishing bilateral or trilateral partnerships with private companies involving dimensions of internationalization, promoting entrepreneurship are also fundamental elements of the internationalization strategy, which can be promoted through the Erasmus KA2 and Erasmus KA3 subcomponents.

The Erasmus program is a central element of UVT's internationalization policies. In this sense, UVT aims to increase the number of Erasmus + mobilities for professors and students, by concluding new bilateral contracts with higher education institutions both within the EU and outside the community, respectively extending the existing contracts. It aims to strengthen Erasmus exchange opportunities by increasing the number of programs and expanding the range of foreign language courses within the UVT, facilitated by the operation of a Department of Foreign Language Studies. The university is also considering expanding its participation in insufficiently accessed components of the Erasmus program to date, such as the Erasmus Plus Virtual Exchange, which allows more students to be exposed to internationalization experiences and the development of intercultural and language skills. The civic competences acquired through volunteering, promoted through the Erasmus + Volunteering and European Solidarity Corps programs, are also essential acquisitions that we intend to promote among our students, considering the granting of credits to reward their involvement in volunteer actions. Mobility of students with special needs will also be supported, provided that UVT has the necessary facilities to adapt to their requirements. We also intend to expand Erasmus programs for UVT administrative staff, in order to develop the quality of services provided to incoming international students, but also the administrative performance of the university.

The current internationalization strategy has in view the development of joint / double / multiple degrees time programs, especially at doctoral and master's level, but, gradually, also at the level of UVT bachelor degree programs. Consequently, UVT continues to promote partnerships with traditional partner universities in such programs and shall be involved at a strategic level through a program such as the European University Consortium (funded by the Partnerships for Excellence - European Universities) for robust internationalizations and the realization of new joint / double degrees programs. UVT is already preparing a program for which an application will be submitted through Erasmus Mundus Joint Master Degrees that shall provide training with a strong multicultural and multilingual component to our students. Other programs are to be prepared for submission in the coming years. Reflection on European themes, the history and challenges of the European project continues to concern the university community within UVT, which will find its materialization in the submission of applications for Jean Monnet Activities.

UVT aims to encourage scientific and academic partnerships with members of the university community established on the basis of scientific and didactic affinities (bottom-up approach), which, however, respect the principles of quality, relevance, and efficiency in terms of internationalization. On the other hand, considering the historical, cultural identity, but also the economic and social situation of the region it serves, besides the existing transnational interuniversity relations, UVT considers, at strategic level, the development of partnerships - especially long-term partnerships - with higher education and research institutions in the Francophone and Mediterranean area, with the Republic of Moldova and other countries in the EU's eastern partnership, with Turkey and the Black Sea region, Central Europe, Northern Europe and the region. Baltic Sea, with Western Europe, Latin America, the United States, Canada and China.