

SELF - ASSESSMENT REPORT

of doctoral field

Electronic Engineering, Telecommunications and Information Technologies

in

IOSUD – Politehnica University Timișoara

April 2021

Responsible of doctoral field,
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CONTENTS

	Number of pages
- Part I - GENERAL INFORMATION	11
1.1. General information on the Doctoral School for Engineering Studies of IOSUD-UPT	
1.2. The field of doctoral studies coordinated by the Doctoral School of Engineering Studies of IOSUD-UPT	
1.3. The internal quality assurance system at the level of the doctoral field	
- Second Part – the fulfillment degree of the requirements in accordance with OM 3651/12.04.2021	60
- Part III	5
3. Strategies and procedures implemented in the field of doctoral studies, as a continuous quality improvement of the doctoral program	
4. Other information	
- Annex contents	701
TOTAL No. of PAGES	777

Part I

GENERAL INFORMATION

1.1. General information on the Doctoral School for Engineering Studies from IOSUD-UPT (establishment, structure, evolution, research mission, vision, level of quality certification, etc.), existing resources (managerial, administrative, logistical, and financial);

Within the Politehnica University of Timișoara Organizing Institution of Doctoral Studies (with the abbreviation IOSUD-UPT in Romanian), in accordance with the Institutional Regulation for the organization and development of doctoral studies at the Politehnica University of Timișoara (RIODSUD-UPT), developed under Law 1/2011 and GD 681/2011, the activity of doctoral studies is carried out within a single doctoral school, **the Doctoral School of Engineering Studies**, established with the approval of RIODSUD-UPT of the UPT Senate in 2011 (RIODSUD-UPT is Annex 10 to the UPT Charter). The headquarters of the Doctoral School of Engineering Studies is inside the Rectorate UPT building, Victoriei Square, no. 2, Timișoara, floor 1, rooms 103 A, B and C.

The IOSUD-UPT decision of establishing a single doctoral school proved to be suitable for the development of doctoral university study programs and being in accordance with the mission of the Politehnica University Timișoara. Thus, a unified approach to the development of doctoral study programs became possible, with a beneficial impact on the quality standards for all doctoral fields accredited in IOSUD-UPT. For example, there is a requirement in IOSUD-UPT of a minimum performance criterion for the public defense of doctoral theses, according to Art. 83 of RIODSUD-UPT, the publication (or proof of acceptance for publication) of at least 2 scientific papers indexed Web of Science with an explicit affiliation of the Politehnica University of Timișoara. This requirement is also included in the doctoral studies contract starting with 2011, and from 2018 it is completed as follows: “The public defense of the doctoral thesis is conditioned by the fulfillment of the minimum national standards for granting the doctoral degree, corresponding to the doctoral field (according to the Order of the Minister of National Education no. 5110/2018), but not less than the minimum performance criterion of IOSUD UPT (according to Art. 83 of the Institutional Regulation for organizing and conducting doctoral studies in UPT, No. 18874 / 16.12.2011). It is assumed that the minimum performance criterion of IOSUD UPT is the publication or acceptance for publication, under UPT affiliation of 2 (two) papers in specialized journals or proceedings of scientific events indexed Web of Science, of which at least one the work has the doctoral student as the first author.” The publication of the results of the doctoral research project before the public defense of the doctoral thesis confers not only international visibility (through Web of Science indexing) but also an external, independent validation of their originality and scientific quality. As a result of this option assumed by IOSUD-UPT, all doctoral theses elaborated in IOSUD-UPT were validated by the specialized committees of the National Council for the Approval of Academic Title, Diplomas and Certificates (with the abbreviation CNATDCU in Romanian), with the confirmation of the doctoral title.

In IOSUD-UPT, the Council of Doctoral Studies (with the abbreviation CSUD in Romanian) is managed by a director, appointed through the public competition organized by UPT, in accordance with the Institutional Regulation for organizing the elections for the organizational structures and management positions of doctoral studies at the level of IOSUD-UPT, no. 6937 of 22.05.2012, approved by the UPT Senate Decision no. 13 from 10.05.2012. According to Decision no. 914/112 / C of 30.08.2012 of the Rector of UPT, the Director of CSUD was appointed Prof. Romeo SUSAN-RESIGA, starting with 03.09.2012, for a term of 4 years. Following the public competition for the position of CSUD Director organized by UPT in 2016, the mandate of Prof. Romeo SUSAN-RESIGA was renewed for another 4 years by the Decision of the Rector of UPT no. 1116/112 / C of 16.09.2016.

Following the competition organized in 2020, according to a decision no. 1840/112 / C of 20.10.2020 of the Rector of UPT, the Director of CSUD was appointed Prof. Radu-Emil PRECUP for a term of 4 years.

Following the elections for CSUD members, organized in June 2012, in accordance with the Institutional Regulation related to the elections for the Organizational Structures and Management Functions of the Doctoral Studies at IOSUD-UPT Level (approved by Senate Decision 13 / 10.05.2012), http://www.upt.ro/Informatii_alegeri-consiliu-csud_299_ro.html, the structure of the CSUD for 2012-2016 term was as follows:

- o Prof. Liviu MARȘAVINA
- o Prof. Mircea ȘTEFĂNESCU
- o Prof. Ștefan-Gheorghe PREITL
- o Prof. Ion BOLDEA
- o PhD student Attila SIMO

The Director of the Doctoral School, Prof. Gheorghe-Daniel ANDREESCU was appointed by the Rector of UPT, at the proposal of CSUD, by Decision no. 668/112 / C of 10.07.2012, for a term of 5 years, 2012-2017. The Interim Council of the Doctoral School (CSD) was formed at the proposal of CSUD, and it consisted of

- o Prof. Daniel Mihai GRECEA
- o Prof. Nicolae FAUR
- o Prof. Dorin LELEA (included after obtaining the habilitation certificate)

The technical secretariat of CSUD / CȘD was provided in the period 2012-2016 by Dr. Liliana MOȘTEORU, while the transmission of doctoral files to CNATDCU was coordinated by Mrs. Simona DAMIAN.

In January 2017, the elections were organized for CSUD members and CSD members, in accordance with the Institutional Regulation for Organizing the Elections for the Organizational Structures and Management Functions of Doctoral Studies at IOSUD-UPT Level (approved by Senate Decision 207 / 26.11.2015), with the following results for the structure of CSUD and CSD,

http://www.upt.ro/img/files/alegeri_2016/mcsud_mcsd/Raport_comisie_electorala_CSUD_CSD.pdf:

CSUD:

- o Prof. Aldo DE SABATA
- o Prof. Lăcrămioara STOICU TIVADAR
- o Prof. Ion BOLDEA
- o Prof. Francisc PETER
- o Prof. Anca DRĂGHICI
- o Prof. Marius MARCU
- o PhD student Magdalena BANDA

CSD:

- o Prof. Dorin LELEA
- o Prof. Florea DINU
- o PhD student Cezara-Liliana RAȚ

After completing the 5-year term (2012-2017) as Director of the Doctoral School for Prof. Daniel ANDREESCU, at the proposal of CSUD, the Rector of UPT by decision no. 1494/112 / C of 19.10.2017, appointed Prof. Dorin LELEA as Director of the Doctoral School for a term of 5 years, 2017 - 2022. Prof. Daniel ANDREESCU remained as a member of the CSD.

Considering GD no. 3/2021 regarding the extension of the alert status on the Romanian territory starting with January 13, 2021, the Institutional Regulation for organizing and conducting elections for the organizational structures and management functions of doctoral university studies at the level of the IOSUD-UPT, the Council of Administration of UPT approved the extension of the term for the members of the Council for Doctoral University Studies and of the members of the Doctoral School Council until 17.07.2021.

Currently, the technical secretariat of the Doctoral School of Engineering Studies consists of 3 members: Eng. Monica JURJIU (admission, study contracts, current problems of doctoral students and doctoral supervisors, referred to also as Ph.D. supervisors, monitoring the doctoral students' files), Eng. Steliana CUCU (defense of doctoral theses and transmission of doctoral files to CNATDCU in the RMU / REI system of MEC, development of advanced university training program) and Dr. Nicoleta NEMEȘ (activities regarding the reporting of information to MEC, INS ANS, admission).

1.2. The Fields of doctoral studies coordinated by the Doctoral School of Engineering Studies within IOSUD-UPT

The main objective of the Doctoral School of Engineering Studies in IOSUD-UPT and of the doctoral fields coordinated by it, is the training of human resources, within the third cycle of university studies, for the qualification of independent scientific researcher certified by Ph.D. title,

defending the doctoral thesis and following the doctoral program composed of (a) the training program based on advanced university studies (1 year) and (b) the individual doctoral scientific research program (at least 2 years).

The mission of the Doctoral School of Engineering Studies in IOSUD-UPT is to coordinate the doctoral studies in UPT using the same academic criteria and performance standards applied to all accredited doctoral fields in IOSUD-UPT. The Doctoral School offers an adequate organizational framework for the development of training programs based on advanced university studies, of individual programs of doctoral scientific research as well, and finalization and public defenses of doctoral theses. Also, the Doctoral School provides the organizational framework for the public defenses of the habilitation theses, and the sustainable development of the Ph.D. supervisors affiliated to IOSUD-UPT. The Doctoral School provides, to all Ph.D. students in IOSUD-UPT, transversal courses within the training program based on advanced university studies, which offers the necessary knowledge to Ph.D. students and promotes the appropriate skills and attitudes for scientific research, stimulating the academic standards of performance, originality, respecting the research ethics and deontology.

The Doctoral School of Engineering Studies from IOSUD-UPT manages 13 fields of doctoral university studies, according to GD 778/2015, GD 376/2016, GD 140/2017, GD 158/2018, GD 326/2019 and GD 299/2020. These doctoral fields are presented in the table below, together with the CNATDCU specialized committees to which they are assigned.

D#	The field of doctoral university studies in IOSUD-UPT	CNATDCU committee
D01	Chemistry	4. Chemistry
D02	Civil Engineering and Installations	6. Civil Engineering and Construction Management
D03	Materials Engineering	7. Materials Engineering and Science
D04	Chemical Engineering	8. Chemical Engineering
D05	Electrical Engineering	9. Electrical Engineering
D06	Energy Engineering	10. Energy Engineering
D07	Electronic Engineering, Telecommunications and Information Technologies	11. Electronic Engineering and Telecommunications
D08	Computers and Information Technology	15. Computers, Information Technology and Systems Engineering
D09	Systems Engineering	

D10	Industrial Engineering	16. Industrial Engineering and Management
D11	Engineering and Management	
D12	Mechanical Engineering	17. Mechanical Engineering, Mechatronics, Robotics and Military Engineering
D13	Architecture	33. Architecture and Urban Planning

The Doctoral School of Engineering Studies has a team of Ph.D. supervisors consisting of:

- 148 total IOSUD-UPT affiliated Ph.D. supervisors at the date of this report, of which
 - 78 full-time Ph.D. supervisors (professors with an employment contract for an indefinite period in IOSUD-UPT), 53 associate Ph.D. supervisors (with a fixed-term employment contract). A small part of the associated Ph.D. supervisors does not have a contract with IOSUD-UPT at the date of this report because they do not currently coordinate Ph.D. students, but are professionally active.
 - 61 full-time Ph.D. supervisors who have obtained the habilitation certificate.

The table below shows the distribution of Ph.D. supervisors, which are affiliated to IOSUD-UPT at the date of this report, and coordinate doctoral studies in the field of **Electronic Engineering, Telecommunications and Information Technologies**.

D#	The field of doctoral university studies in IOSUD-UPT	Ph.D. supervisors affiliated with the Doctoral School of Engineering Studies in IOSUD-UPT					
		Total	From which, women	Full-time in UPT	From which, women	Habilitation certificate	From which, women
D07	Electronic Engineering, Telecommunications and Information Technologies	15	4	12	3	7	3

Within the field of **Electronic Engineering, Telecommunications and Information Technologies**, 15 IOSUD UPT affiliated Ph.D. supervisors are coordinating the doctoral students. Among them, 12 are with an employment contract for an indefinite period ([Annex A.3.1.2](#), from the self-assessment sheet of the doctoral field).

No.	Habilitation certificate	Ph.D. supervisors	Order	STATUS
1	YES	ANCUȚI Codruța Orniana	4047/09.04.2020	CDT
2	YES	ANCUȚI Cosmin	623/06.11.2014	CDT
3	YES	BELEGA Daniel Cornel	5633 MD/11.12.2013	CDT
4	YES	CĂLEANU Cătălin Daniel	4209/10.06.2015	CDT
5	YES	DE SABATA Aldo	4458MD/09.08.2013	CDT
6	-	GONTEAN Aurel-Ștefan	5842/04.11.2008	CDT
7	-	ISAR Alexandru-Nicolae	4807/17.08.2005	CDT
8	-	LASCU Dan Florentin	4697/14.08.2009	CDT
9	YES	LASCU Mihaela-Ruxandra	3987/07/06.2016	CDT
10	YES	NAFORNIȚĂ Corina Alda	4209/10.06.2015/19	CDT
11	-	NAFORNIȚĂ Ioan-Lucian	5371/10.02.1994	CDFC
12	-	NAFORNIȚĂ Miranda-Monica	4211/20.07.2000	CDFC
13	-	OTEȘTEANU Marius-Emil	4807/17.08.2005	CDT
14	-	TIPONUȚ Virgil	5371/10.02.1994	CDFC
15	-	VASIU Radu-Adrian	4807/17.08.2005	CDT

CDT - Ph.D. supervisor with an employment contract for an indefinite period in IOSUD-UPT

CDA - Ph.D. supervisor with a fixed-term employment contract

CDFC – Ph.D supervisor without an employment contract in IOSUD-UPT

The evolutions of the number of doctoral students and the number of doctors in the last 5 years is presented in the tables below.

The evolutions of the number of doctoral students in the last 5 years

The doctoral field	Admitted students									
	2015/ 2016	From which, women	2016/ 2017	From which, women	2017/ 2018	From which, women	2018/ 2019	From which, women	2019/ 2020	From which, women
Electronic Engineering, Telecommunications and Information Technologies	9	1	6	1	8	4	4	0	10	6

The evolutions of the number of doctors in the last 5 years

The doctoral field	Doctoral Theses defended / Doctoral Theses confirmed									
	2016	From which, women	2017	From which, women	2018	From which, women	2019	From which, women	2020	From which, women
Electronic Engineering, Telecommunications and Information Technologies	2	0	0	0	0	0	4	0	1	0

The research infrastructure

The research infrastructure of UPT is available to doctoral students, according to the institutional commitment assumed by the doctoral studies contract (Art 6B). The IOSUD-UPT policy embraces the idea of including the doctoral students in research groups, where the doctoral supervisor and/or the members of the coordinating commission are the members. It is supposed that in this case, they will acquire a high level of knowledge, techniques and experimental methods, numerical simulation techniques, and fast familiarization with the research infrastructure to be used in the framework of the doctoral research program.

The following research centers and institutes are established and accredited internally in the Politehnica University Timișoara, http://www.upt.ro/Upt-Timisoara_centre-si-institute-de-cercetare-_153_ro.html:

- o Research Institute for Renewable Energies
- o Research Center for Complex Fluid Systems Engineering
- o Research Center for Materials Mechanics and Construction Safety
- o Research Center in Automatic Systems Engineering
- o Research Center in Intelligent Control of Energy Conversion and Storage
- o Research Center for Inorganic Materials and Alternative Energies
- o Research Center in Chemistry and Engineering of Macromolecular and Natural Organic Compounds
- o Research Center for the Analysis and Optimization of Electric Power Systems
- o Computer and Information Technology Research Center
- o Research Center for Processing and Characterization of Advanced Materials
- o Center for Research in Materials and Advanced Technologies
- o Mechatronics and Robotics Research Center
- o Research Center for Thermal Machinery and Equipment, Transport and Pollution
- o Research Center in Construction Installations
- o Medical Engineering Research Center

- o Research Center for Advanced Methods in Study of Physical Phenomena
- o Multimedia Research Center
- o Urban Planning Research Center
- o Research Center for Construction Rehabilitation
- o Intelligent Electronic Systems Research Center
- o Intelligent Signal Processing Research Center
- o Engineering and Management Research Center
- o Environmental Science and Engineering Research Center
- o Research Center in Hydrotechnics and Environmental Protection
- o Integrated Engineering Research Center
- o Research Center in Infrastructures for Constructions and Transports

The research infrastructure in IOSUD-UPT is described in the platform "Engage in the Romanian Research Infrastructures - ERRIS", at the link <https://erris.gov.ro/UNIVERSITATEA-POLITEHNICA-TI>. For each research center listed above, the major research equipment and research services available are presented.

The development of UPT's research infrastructure is achieved through research and development contracts carried out in the university, obtained through national and international competitions, but also UPT's internal research grants, organized in the last years and financed from own revenues of UPT and intended for young researchers.

The main achievements in the activity of scientific research and technological development in UPT are summarized annually in the "Annual Research Report - Politehnica University Timisoara", publicly available since 2012 at the link http://www.upt.ro/Informatii_rapoarte_de_recherche_170_en.html.

Presentation of the research infrastructure - Electronic Engineering, Telecommunications and Information Technologies

Within the field of **Electronic Engineering, Telecommunications and Information Technologies**, the research infrastructure can be consulted at:

<https://eeris.eu/ERIO-2000-000R-0036>

A detailed presentation of the research infrastructure can be found in [Annex A.2.1.1](#), in the self-assessment sheet of the doctoral field of **Electronic Engineering, Telecommunications and Information Technologies**.

1.3. The internal quality assurance system at the level of the doctoral field

- **Objectives, general structure and consistency of the internal quality assurance system:**

At the level of the doctoral field, the main objective of the quality system for doctoral study programs is the development of doctoral studies that ensure a high success rate in obtaining the doctoral degree. Generally speaking, the doctoral diploma attesting the capability of the scientific researchers to undertake independent research activities.

The structure of the quality management system is presented on the UPT website (http://www.upt.ro/Informatii_asigurarea-calitatii-in-upt_12_en.html) and is described in the Quality Manual (http://www.upt.ro/img/files/2017-2018/calitate/180730_upt_Manualul_Calitatii.pdf), which considers the quality assurance as part of the coherent quality management system.

- **Quality assurance policies and the definition of procedures, beneficiaries and their responsibilities:**

Doctoral studies are an essential part of the educational process in UPT. Taking this into account, implementation of the activities associated with doctoral studies is achieved by: "The institutional regulation for organizing and conducting doctoral studies at the" Politehnica "University Timisoara - Annex 10 to the UPT Charter (http://www.upt.ro/Information_regulations-regarding-the-doctoral-cycle_271_en.html), general documents of the quality system (Strategic Plans, Quality Manual) and documents specific to quality assurance (procedures and working instructions). All the specific stages of the doctoral studies are carefully documented so that they can be monitored and, if necessary, corrected in time. The UPT website regarding doctoral studies (http://www.upt.ro/Informatii_studii-universitare-de-doctorat_266_en.html) contains clear and useful information for the doctoral students, indispensable for their integration in the university community, including information regarding the documents that must be considered at various stages of the doctoral studies (http://www.upt.ro/Informatii_documentele-doctoranzilor-inmatriculati-incepand-cu-anul-201_286_en.html).

The quality assurance policies are stated in the Rector's declaration (http://www.upt.ro/img/files/2014-2015/calitate/Declar_Rector_2014.pdf) and the accompanying documents (http://www.upt.ro/Informatii_asigurarea-qualities-in-upt_12_en.html). They are detailed in the strategic plan of UPT (http://www.upt.ro/Informatii_planuri-strategice_59_ro.html) and in terms of a separate chapter (4.1.3. Doctoral studies) in the operational plans (http://www.upt.ro/img/files/po/2018/Planul_operational%20al_UPT_2018.pdf).

In the process of completing the mission and defining the UPT strategy, the UPT Board of Directors is advised by a UPT Steering Committee composed of 17 people¹, which is an advisory, autonomous and independent body of the UPT.

- **The staff, Ph.D. students and external stakeholders involvement in the quality assurance process:**

¹ http://www.upt.ro/Informatii_comitet-director_254_ro.html

UPT regulations and procedures, for example, the procedure regarding the defense of the doctoral thesis (http://www.upt.ro/Informatii_studii-universitare-de-doctorat_266_ro.html) and information regarding the participation in international scientific events (http://www.upt.ro/international/Mobilitati-Si-Cooperari-Internationale_Programul-de-finantare-ISI_27_ro.html) and, in general, the links in the section “Forms and Regulations” in the webpage of the Department of International Relations of UPT (http://www.upt.ro/international/Departamentu_Mobilitati_Si_Cooperari_Internationale_ro.html) contain clear evidence that certifies that the activity of the staff that interacts with the UPT Doctoral School is part of a quality assurance system. Ph.D. students have their representatives in the UPT Ethics Commission. The Steering Committee, which represents the interest of employers for training highly qualified human resources, including doctoral students, contributes to the identification of research topics to be engaged through doctoral research.

In UPT, the training of human resources for research through doctoral studies has been constantly considered in correlation with the research requirements of different companies and institutions. Solving their requests result in qualitative doctoral research, implicitly in a quality assurance system. So the Doctoral School undertook the measures for the association of the companies like Continental S.A., RAAL-Bistrița, and ICEMENERG in IOSUD-UPT.

- **The interaction between the quality assurance system and university management:**

The quality assurance system in UPT is coordinated by the Rector of UPT through the Quality Assessment and Assurance Commission (CEAC – UPT²) and the Department for Quality Assurance (DGAC³). The interaction between the Board of Directors of UPT and DGAC, a department with an executive role that ensures the functioning of the quality management system in UPT, is permanent and involves the quality system in all basic processes and support in UPT. With this in mind, DGAC cooperates directly with all university entities and departments including the UPT Rectorate, and Doctoral School. The Board of directors uses the monitoring reports of the CEAC and the DGAC, initiates new procedures and instructions with the DGAC, operates based on the analysis reports submitted by the DGAC and the self-assessment reports of the programs and areas of study.

- **Transparency and access to information specific to the internal quality assurance system for internal and external beneficiaries:**

In the UPT website, there is a separate section on quality assurance (http://www.upt.ro/Informatii_asigurarea-calitatii-in-upt_12_en.html). It contains information on the documents of the quality system, the structure, and references regarding the national and international standards in the field of quality assurance in university education. DGAC has the task of verifying and posting in the UPT website the information related to almost all the sections that appear in the UPT webpage (<http://www.upt.ro/>). Among the topics of interest for internal and

² http://www.upt.ro/administrare/dgac1/file/2012-2013/hs/2013/HS_83_12-12-2013.pdf

³ http://www.upt.ro/img/files/calitate/Regulament_DGAC.pdf

external beneficiaries are those related to the organization of the teaching procedure (see page "study programs") and the educational and research offer of UPT (see page "research").

- **The efficiency of the internal quality assurance procedures and structures and their impact on the activities within the doctoral studies:**

Within the UPT the various activities are organized mainly by regulations. They cover the main processes in the university. Operational procedures and work instructions control essential or critical aspects of the processes. DGAC and the Doctoral School collaborate in the development of procedures directly related to the basic activities of doctoral students and provide support for various activities of doctoral students (information through the UPT website, administrative activities, and activities related to services offered to students). The efficiency of the quality system documents is revealed by the results obtained by UPT, in particular by the UPT Doctoral School.

- **The information produced by the internal quality assurance system managed as a tool for quality management and improvement of education and other activities:**

Annually, CEAC organized audits on topics related to the conditions that UPT makes available to students (http://www.upt.ro/Informatii_asigurarea-calitatii-in-upt_12_en.html). The results of the audits are sent, together with proposals for corrective measures, to the Rector of UPT. Starting with 2018, the evaluation of teachers by students is performed online. Procedures for internal self-assessment have been developed to be used for external evaluation by ARACIS.

- **Monitoring, evaluation and continuous development of the internal quality assurance system:**

The quality assurance system is coordinated by the Rector of UPT who interacts with CEAC-UPT, and on the other hand, monitors the activity of DGAC by subordinating DGAC to a Vice-rector. The monitoring activity of the quality assurance system is carried out by analyzing how the working procedures and instructions are applied. Every year, CEAC-UPT presents a report on quality assurance. The report is discussed by the Senate-UPT within the annual report of the Rector of UPT regarding the state of the university and becomes public at the following link: http://www.upt.ro/Informatii_asigurarea-calitatii-in-upt_12_ro.html. The Rector of UPT constantly requests the DGAC to develop procedures and work instructions for the emerged activities or those that have to be strengthened.

The second part of the self - assessment report of the doctoral field *Electronic Engineering, Telecommunications and Information Technologies*, regarding the fulfillment degree of the requirements in accordance with OM 3651/12.04.2021

A. INSTITUTIONAL CAPACITY			
A.1. Institutional, administrative, managerial structures and financial resources			
Standards	Performance	Documentation of performance indicators <i>fulfilled / partially fulfilled / not fulfilled</i>	Self-assessment of the fulfillment degree of the requirements
A.1.1. The organizing institution of the doctoral studies (IOSUD) has implemented the efficient mechanisms provided by the specific legislation regarding the doctoral studies.	A.1.1.1. Existence of specific regulations and their application at the level of the doctoral school that coordinates the field of doctoral studies:	A.1.1.1. Within IOSUD-UPT the following regulations specific to doctoral studies are applied:	
	(a) Doctoral School Regulations	(b) Institutional Regulation for the Organization of Doctoral Studies at the Politehnica University Timișoara, Nr. 18.874 / 16.12.2011 (Annex 10 to the UPT Charter): Annex_A.1.1.1.a. publicly available at: http://upt.ro/img/files/carta/anexe/Anexa_10_CartaUPT_Regulament_doctorat.pdf Considering that in the frame of IOSUD-UPT there is only one doctoral school, the Doctoral School of Engineering Studies that coordinates all doctoral fields, there is a single document that includes regulations for organizing the doctoral studies.	<i>fulfilled</i>

	<p>(b) The methodology for organizing elections for the position of director of the Doctoral School Council (CSD), as well as the election for student representatives in the CSD and their evidence;</p>	<p>(a) The methodology for organizing the elections at the CSD level is provided in:</p> <p>1. The Institutional Regulation for Organizing the Elections for the Organizational Structures and Management Functions of the Doctoral Studies at IOSUD-UPT Level, approved by HS 13 / 10.05.2012, for the legislature 2012-2016: Annex A.1.1.1.b-1.</p> <p>publicly available at:</p> <p>http://www.upt.ro/administrare/dgac1/file/2011-2012/regulamente/IOSUD-UPT_CSUD2012.pdf</p> <ul style="list-style-type: none"> • The elections at the level of CSUD / CSD in the legislature 2012-2016 can be found in Annex A.1.1.1.b-2. <p>publicly available at:</p> <p>http://www.upt.ro/Informatii_alegeri-consiliu-csud_299_en.html</p> <ul style="list-style-type: none"> • The decision on the appointment of CSUD members in 2012-2016 can be found in Annex A.1.1.1.b-3. <p>publicly available at:</p> <p>http://www.upt.ro/administrare/dgac1/file/2011-2012/doctorat/alegeri_csud/Numire_membri_CSUD_22_06_2012.pdf</p> <ul style="list-style-type: none"> • The elections for the CSUD director for the 2012-2016 legislature can be found in Annex A.1.1.1.b-4. <p>publicly available at:</p>	<p><i>fulfilled</i></p>
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		<p>http://www.upt.ro/Informatii_concurs-public---director-al-csud_298_en.html</p> <ul style="list-style-type: none"> • The decision to appoint the director of CSUD in 2012-2016 can be found in Annex A.1.1.1.b-5. • The decision to appoint the director of CSD in 2012-2017 can be found in Annex A.1.1.1.b-6. <p>publicly available at:</p> <p>http://www.upt.ro/img/files/2017-2018/doctorat/Decizie_numire_DSD_Andreescu_Gh-Daniel.pdf</p> <p>2. The regulation for organizing the processes for establishing the managing structures and for electing / designating competition regarding the management positions at the Politehnica University Timisoara for the 2016-2020 legislature is attached Anexa A.1.1.1.b-7.</p> <p>publicly available at:</p> <p>http://www.upt.ro/img/files/hs/HS_207_26.11.2015_Regulament_alegeri.pdf</p> <ul style="list-style-type: none"> • Organizing the elections for CSUD / CSD members for the 2016-2020 legislature can be found in Annex A.1.1.1.b-8. <p>publicly available at:</p> <p>http://www.upt.ro/Informatii_alegeria-membrilor-csud-si-csd-pentru-mandatul-2016-2020_840_en.html</p> <ul style="list-style-type: none"> • The report of the electoral commission on the appointment of CSUD members in 2016-2020 can be found in Annex A.1.1.1.b-9. <p>publicly available at:</p>	
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		<p>http://www.upt.ro/img/files/alegeri_2016/mcsud_mcsd/Raport_comisi_e_electorala_CSUD_CSD.pdf</p> <ul style="list-style-type: none"> • The decision to appoint the director of CSUD in 2016-2020 can be found in Annex A.1.1.1.b-10. <p>publicly available at:</p> <p>http://www.upt.ro/img/files/alegeri_2016/csud/Decizie_numire_director_CSUD_2016.pdf</p> <ul style="list-style-type: none"> • The decision to appoint the director of CSD in 2017-2022 can be found in Annex A.1.1.1.b-11. <p>publicly available at:</p> <p>http://www.upt.ro/img/files/2017-2018/doctorat/Decizie_numire_DSD_Dorin_Lelea.pdf</p> <p>3. The regulation for organizing the processes for establishing the managing structures and for electing / designating competition regarding the management positions at the Politehnica University Timisoara for the 2020-2024 legislature is attached in Annex A.1.1.1.b-12.</p> <p>publicly available at:</p> <p>http://upt.ro/img/files/carta/anexe/Anexa23_CartaUPT_Regulament_alegeri-2020.pdf</p> <ul style="list-style-type: none"> • The proof of the competition for CSUD director in the 2020-2024 legislature is presented in Annex A.1.1.1.b-13. 	
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		<p>publicly available at:</p> <p>http://www.upt.ro/Informatii_concurs-pentru-ocuparea-functiei-de-director-al-csud-pentru-1533_en.html</p> <ul style="list-style-type: none"> • The decision to appoint director of CSUD in 2020 (Annex A.1.1.1.b-14.). <p>publicly available at:</p> <p>http://www.upt.ro/img/files/csud/Decizie_numire_director_CSUD_2020.pdf</p> <ul style="list-style-type: none"> • Election of the student representative in the CSD (Annex A.1.1.1.b-15.) <p>publicly available at:</p> <p>http://www.upt.ro/img/files/alegeri_2016/mcsud_mcsd/PV_CSD_dr_d.pdf</p> <ul style="list-style-type: none"> • Election of the student representative in the CSUD (Annex A.1.1.1.b-16.) <p>publicly available at:</p> <p>http://www.upt.ro/img/files/alegeri_2016/mcsud_mcsd/PV_CSUD_drd.pdf</p> <ul style="list-style-type: none"> • By HS no. 38 / 21.01.2021, the mandate of CSUD / CSD members was extended until 17.07.2021 (Annex A.1.1.1.b-17.) <p>publicly available at:</p> <p>http://www.upt.ro/img/files/hs/2021/21.01.2021/HS_38_21.01.2021_Prelungire-mandat-membri-CSUD-and-CSD.pdf</p>	
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	<p>(c) Methodologies for organizing the doctoral studies (admission of doctoral students, completion of doctoral studies);</p>	<p>c) Within IOSUD-UPT are used:</p> <ul style="list-style-type: none"> • The institutional procedure regarding the organization of the admission to doctoral studies in UPT session 2019, approved by HCA-UPT no. 54 / 11.06.2019 is presented in Annex A.1.1.1.c-1. <p>publicly available at:</p> <p>http://www.upt.ro/img/files/2018-2019/admitere/doctorat/IOSUD-UPT-admitere-2019_prouctura.pdf</p> <ul style="list-style-type: none"> • The Institutional Procedure for organizing the admission to Doctoral Studies at the Politehnica University Timișoara, 2018 session, approved by HCA no. 18 / 24.04.2018 (in Annex A.1.1.1.c-2. The version used in September 2018 is presented), <p>publicly available at:</p> <p>http://www.upt.ro/img/files/2017-2018/admitere /doctorat/IOSUD-UPT-admitere-2018_PROCEDURA_ANEXE.pdf</p> <ul style="list-style-type: none"> • The Institutional Procedure for organizing the admission to Doctoral Studies at the Politehnica University Timișoara, the 2017 session approved by HCA no. 31 / 16.05.2017- presented in Annex A.1.1.1.c-3. <p>publicly available at:</p> <p>http://www.upt.ro/img/files/2016-2017/admitere/doctorat/IOSUD-UPT-admitere-2017_PROCEDURA_ANEXE.pdf</p> <ul style="list-style-type: none"> • The Institutional Procedure for organizing the admission to Doctoral Studies at the Politehnica University Timișoara - September 2016 approved by HCA no. 37 / 30.06.2015. In Annex A.1.1.1.c-4, the 	<p><i>fulfilled</i></p>
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		<p>version used in September 2016 is presented, publicly available at: http://www.upt.ro/img/files/2015-2016/admitere/doctorat/Procuctura_admitere_doctorat_2015-2016.pdf</p> <ul style="list-style-type: none">• The Institutional Procedure for organizing the admission to Doctoral Studies at the Politehnica University Timișoara - September 2015 approved by HCA no. 37 / 30.06.2015. In Annex A.1.1.1.c-5, the version used in September 2015 is presented, publicly available at: http://www.upt.ro/img/files/2014-2015/admitere/doctorat/Procuctura_admitere_doctorat_2015.pdf• The procedure for public defense of the doctoral thesis and set up the doctoral file of the Ph.D. student in IOSUD-UPT, 2016 (Annex A.1.1.1.c-6), publicly available at: http://www.upt.ro/img/files/2015-2016/doctorat/Procuctura_sustinere_teza_incepand_cu_04-2016.pdf• The procedure for the completion of doctoral studies and the public defense of the doctoral thesis in UPT, adopted by HCA 5 / 15.01.2019 (Annex A.1.1.1.c-7), publicly available at: http://upt.ro/img/files/2019-2020/doctorat/HCA_5_din_2019_Instructiune_de_lucru_sustinere_teze_doctorat.pdf	
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		<ul style="list-style-type: none"> • IOSUD-UPT has adopted, acc. Art 83 of RIODSUD, its own minimum performance criteria for the public defense of doctoral theses (publishing minimum 2 papers indexed Web of Science), a criterion currently correlated with the minimum standards of CNATDCU (National Council for Attestation of University Degrees, Diplomas and Certificates) for granting the title of doctor acc. OM 5110/2018. • In the current epidemiological context, for the online defense of doctoral theses, the “Procedure for online defense of doctoral theses in UPT is established for academic year 2019-2020” (HS no.111 / 14.05.2020) presented in Annex A.1.1.1.c-8. <p>publicly available at:</p> <p>http://www.upt.ro/img/files/hs/2020/14.05.2020/HS_111_14.05.2020_Procuctura-sustinere-online-teze-doctorat.pdf</p> <ul style="list-style-type: none"> • Through HS 231 / 17.09.2020 (Annex A.1.1.1.c-9.) the validity of the Procedure for the online defense of doctoral theses in UPT for the academic year 2020-2021 has been extended. 	
	<p>(d) The existence of mechanisms for the recognition of the quality of doctoral coordinator and for the equivalence of doctorates obtained in other states;</p>	<p>(d) IOSUD-UPT through the Doctoral School uses its own procedure for the recognition of the doctoral diploma and the doctoral title obtained abroad (Annex A.1.1.1.d-1).</p> <p>In the Annex A.1.1.1.d, the Recognition Certificates issued by IOSUD-UPT are presented for doctoral diplomas recognized by IOSUD-UPT.</p> <p>Also, IOSUD-UPT collaborates permanently with CNRED regarding the recognition process, and sends periodically to CNRED a list of the recognition requests.</p>	<p><i>fulfilled</i></p>

		<p>IOSUD-UPT through the Doctoral School uses its own procedure for recognizing the quality of doctoral coordinator obtained in other states (Annex A.1.1.1.d-2.).</p>	
	<p>(e) The management structures (Doctoral School Council), proving the regularity of organizing the meetings;</p>	<p>(e) According to the regulation in Annex A.1.1.1.a. IOSUD-UPT operates under the coordination of the Rector of UPT having all the structures provided by law. The structures are transparent: The UPT management structure is presented in Annex A.1.1.1.e-1., the CSUD / CSD structure is presented in Annex A.1.1.1.e-2. publicly available at:</p> <p>http://www.upt.ro/Informatii_conducerea-universitatii-politehnica-timisoara_311_en.html</p> <p>http://www.upt.ro/Informatii_consiliul-pentru-studii-universitare-de-doctorat---scoala-do_310_en.html</p> <p>The register of minutes of CSUD / CSD meetings can be consulted at the headquarters of the Doctoral School of Engineering Studies. Meetings are organized whenever the situation requires it (analysis and approval of CSUD / CSD decisions, updating methodologies and instructions for doctoral studies, etc.).</p>	<p><i>fulfilled</i></p>

	<p>(f) The Doctoral Studies Contract.</p>	<p>(f) The relationship between IOSUD-UPT, the doctoral student and the Doctorate coordinator is formalized according to the law through the Contract for doctoral studies. In Annex A.1.1.1.f-1., Annex A.1.1.1.f-2., Annex A.1.1.1.f-3., Annex A.1.1.1.f-4., Annex A.1.1.1.f-5., the versions of the Contract used in the period 2019 - 2015 are presented.</p>	<p><i>fulfilled</i></p>
	<p>(g) The internal procedures for analysis and approval of proposals on the subject of the training program based on advanced university studies.</p>	<p>(g) The Doctoral School aims to ensure the correlation of the topics of training programs based on advanced university studies with the research topics proposed by doctoral coordinators and assumed by IOSUD-UPT, doctoral coordinators and doctoral students through doctoral university contracts. The training program based on advanced university studies is developed on the basis of an individual training plan based on advanced university studies (Annex 1 to the doctoral studies contract) developed solely and independently by the doctoral coordinator for each doctoral student, after admission to doctoral studies. Based on the IOSUD-UPT <i>Procedure for analysis and approval of proposals on the subject of the training program based on advanced university studies</i> (Annex A.1.1.1.g-1.), The Doctoral School Council, through the Director of the Doctoral School issues a decision that approves the plans for individual training based on advanced university studies for the current academic year (Annex A.1.1.1.g-2.).</p>	<p><i>fulfilled</i></p>
	<p>A.1.1.2. The regulations of the doctoral school include criteria, procedures and mandatory standards for the aspects specified in art. 17 para. (5) of the Code of doctoral studies, approved by Government Decision no. 681/2011, with</p>	<p>A.1.1.2. According to art.17, par. 5 of GD of the single doctoral school within IOSUD-UPT (681/2011 The regulation) – (Annex A.1.1.1.a.) establishes mandatory criteria, procedures and standards regarding the following aspects: a) acceptance of new doctoral coordinators, as well as the regulations regarding the method by that a doctoral coordinator may be revoked as a member of the doctoral school (Art. 16, 17);</p>	<p><i>fulfilled</i></p>

	subsequent amendments and completions.	<ul style="list-style-type: none"> b) the mechanisms through which decisions are taken regarding the opportunity, structure and content of the training program based on advanced university studies (Art. 55-67); c) the procedures for changing the doctoral coordinator of a certain doctoral student and the procedures for mediating the conflicts (Art. 15, 25); d) the conditions under which the doctoral program may be interrupted (Art. 47, 48); e) ways to prevent fraud in scientific research, including plagiarism (Art. 77, 79, 85); f) ensuring access to research resources; (Art. 68-72) g) The attendance obligations of doctoral students (Art. 41, 53). 	
<p>A.1.2. IOSUD has logistical resources needed for the fulfillment of the mission of doctoral studies.</p>	<p>A.1.2.1. The existence and effectiveness of the computer system database for the record of doctoral students and their academic career.</p>	<p>A.1.2.1. The computer system for the record of doctoral students and the academic career used in the IOSUD-UPT comprises mainly:</p> <ul style="list-style-type: none"> • The ENROLL admission platform (intended for the management of the information on the admission of students, which is being expanded for doctoral studies for monitoring the activity of doctoral students and setting up the doctoral file in electronic format). • Starting with the academic year 2017/2018 in IOSUD - UPT, the admission process to doctoral studies is computerized, by accessing by the candidates the ENROLL platform, at the address: http://admitere.upt.ro/phd/ • Starting with the academic year 2020/2021, IOSUD - UPT created the possibility for students to have the entire admission file created and submitted on the ENROLL platform. • Instructions for completing the admission file in the ENROLL platform are presented in Annex A.1.2.1-1. 	<i>fulfilled</i>

		<p>which are publicly available at: http://www.upt.ro/img/files/2019-2020/admitere/doctorat/Admitere PHD 2020 Instructiuni enroll re v3.pdf</p> <ul style="list-style-type: none"> • Each candidate creates a user account, following with the user and password received by e-mail, used to log in and to fill in the required data. Subsequently, the enrollment form for doctoral studies is generated from the ENROLL platform. • The enrollment form for doctoral studies includes: <ul style="list-style-type: none"> I. Personal <ul style="list-style-type: none"> • Editing personal data II. Studies <ul style="list-style-type: none"> • Data on graduated high school • Data on bachelor's studies • Data on master's studies / advanced studies III. Statement on own responsibility regarding doctoral studies financed from the state budget • Choice of doctoral studies options <ul style="list-style-type: none"> • Doctoral field • Financing options • Doctoral coordinator • Uploading documents • Finalizing the registration. • The ENROLL platform is used starting with 2017 for the generation of doctoral study contracts for admitted doctoral students, respectively for the generation of meta-data necessary for the inclusion of doctoral 	
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		<p>students in the Unique Matriculation Register (RMU). In the future, ENROLL will be expanded to allow the generation of all documents that are included in the doctoral student's file.</p> <ul style="list-style-type: none"> • The ACCESS database “<i>Records of doctoral students enrolled in UPT</i>” is intended to keep track of doctoral students enrolled in UPT and to highlight their academic career. • For groups of enrolled doctoral students, selected on certain criteria (doctoral field, doctoral coordinator, year of enrollment, type of funding, etc.) various queries and data extraction can be done, that is the raw material for any type of required statistics. <p><i>Thus, the following can be highlighted:</i></p> <ul style="list-style-type: none"> • General / personal data for each enrolled student • The situation of doctoral students enrolled in each field / faculty / for each doctoral coordinator in a field, for a specific period of time, • The situation of doctoral students expelled for each field / faculty / for each doctoral coordinator in a field, for a certain period of time, • Situation of doctoral students who have elaborated and defended doctoral theses in a specific period of time, • Situation of doctoral students who have interrupted doctoral studies, • Number of doctoral theses defended in the specific period of time, • The situation of doctoral students with scholarship, • The situation of doctoral students without scholarship, • The situation of doctoral students with a fee, • Observations regarding the doctoral studies: interruption / expulsion / extension. 	
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		<p><i>The academic path can be followed using the fields related to the doctoral program:</i></p> <ul style="list-style-type: none"> • disciplines of the advanced university program and the coordinators of these disciplines, • date of the defense and the grade awarded for each of the disciplines of the advanced university program, • title of the research project, • research reports 1 and 2 , with their supporting data, • Composition of the advising committee, • Title of the doctoral thesis, • Composition of the doctoral committee, • Date of the doctoral thesis defense and the grade awarded, • Number of the order of the minister conferring the doctoral degree and its date, • Number of doctoral degree diploma and the date of its release. <p>In Annex A.1.2.1-2., examples of database usage are presented - List of doctors in the period 2016-2020 in the field of Electronic Engineering, Telecommunications and Information Technologies.</p>	
	<p>A.1.2.2. Existence and use of appropriate computer program and evidence of its usage to verify the percentage of similarity in all doctoral theses.</p>	<p>A.1.2.2. IOSUD-UPT performed the verification of the similarity percentage in the doctoral theses elaborated starting with 2016, using the following computer programs, approved by MENCS acc. OM 3485/2016.</p> <ul style="list-style-type: none"> • <i>Plagiat.pl</i>, through the computer platform doct.edu.ro/doct of the Ministry of Education, between June 2016 and July 2017. • <i>SemPlag</i>, through the platform uefiscdi-direct.ro/semplag/index.php, between August 2017 and September 2017. 	<p><i>fulfilled</i></p>

		<ul style="list-style-type: none"> • <i>iThenticate</i> (purchased by UPT), October 2017 - present. • In Annex A.1.2.2-1., there is a list of PhD students in the field of Electronic Engineering, Telecommunications and Information Technologies for which computer programs were used to verify the percentage of similarity. • In Annex A.1.2.2-2., examples of using the similarity software for PhD students in the field of Electronic Engineering, Telecommunications and Information Technologies. 	
<p>A.1.3. IOSUD shall ensure that financial resources are used appropriately, and income from doctoral studies are supplemented by additional funding to that provided by the government.</p>	<p>A.1.3.1. The existence at least of one research grant or institutional development / human resources implemented at the time of submission the internal assessment file in the field of the analyzed doctoral studies program, or at least two research grants or institutional development / human resources obtained by doctoral coordinators in the evaluated field in the last 5 years. Grants address topics relevant to the doctoral field and are usually implemented with the involvement of Ph.D. students.</p>	<p>A.1.3.1. List of grants for the field of Electronic Engineering, Telecommunications and Information Technologies:</p> <ul style="list-style-type: none"> • The doctoral coordinators from the field of Electronic Engineering, Telecommunications and Information Technologies participated, in the reference period, in implementation of grants presented in Annex A.1.3.1. The involvement was both in <i>research and in institutional grants</i>. • At the time of submitting the evaluation file, the situation of <i>research grants</i> is as follows: <ul style="list-style-type: none"> - Research or institutional development grants / human resources in implementation: 3 - Research or institutional development grants / human resources obtained by doctoral coordinators in the last 5 years: 11 - Total contracts in the referenced field (2016-2020): 26. <p>Research grants address relevant issues for the analyzed doctoral field and, the doctoral students have been engaged in the research projects, according to the legislation in force (see Annex A.1.3.2-3.).</p>	<p><i>fulfilled</i></p>

	<p>*A.1.3.2. Proportion of doctoral students existing at the time of evaluation who benefit, for a minimum of 6 months, from funding resources other than government funding, through scholarships granted by individuals or legal entities, or are financially supported by research or institutional development / human resources grants, is at least 20%.</p>	<p>*A.1.3.2. In the frame of the quality indicator, IOSUD-UPT used and is still using, the following financial resources from its own incomes to support doctoral students, in order to carry out doctoral study programs:</p> <ul style="list-style-type: none"> • UPT doctoral scholarships from own income, granted for 2018 based on HCA no. 44 / 11.09.2018 and for 2019 based on HCA 73 / 24.09.2019 (Annex A.1.3.2-1.) • Doctoral grants from UPT's own revenues intended to complete doctoral studies, granted based on the Decision of the UPT Senate or the Board of Directors of the UPT (Annex A.1.3.2-2.). In the case of scholarships for the extension of doctoral studies, only those doctoral students who benefit from funding at the time of evaluating the doctoral field were taken into account. • Engaging the doctoral students in research grants according to the legislation in force (Annex A.1.3.2-3.). • In Annex A.1.3.2., the list of PhD students in the field is presented for Electronic Engineering, Telecommunications and Information Technologies, with the explicit specification of the Ph.D. students additionally financed from UPT's own revenues. <p>- Existing doctoral students at the time of evaluation: 30 - Doctoral students existing at the time of evaluation who benefit from sources of funding other than government funding: 12</p> <p style="text-align: center;">12/30 * 100 = 40% - CRITERION FULFILLED \geq 20%</p>	<i>fulfilled</i>
	<p>*A.1.3.3. At least 10% of the total amounts related to doctoral grants obtained by the university through</p>	<p>*A.1.3.3. The data related to the application of the indicator are given in Annex A.1.3.3.</p> <p style="text-align: center;"><i>In summary, according to the annex:</i></p>	<i>fulfilled</i>

	institutional contract and tuition fees collected from doctoral students, from the paid education form, are used to finance the training costs of doctoral students (participation at the conferences, summer schools, courses, internships abroad, publication of scientific articles or other specific forms of dissemination, etc.).	$S1 / S2 * 100 = 13.71\%$ CRITERION FULFILLED $\geq 10\%$		
		total doctoral training expenses (lei) (S1)	total government revenue + tax (lei) (S2)	ratio of doctoral training expenses / institutionally collected amount + amount collected from the tax (%)
		329 950.92	2 407 500	13.71

A.2. Research infrastructure

Standards	Performance indicators	Findings	
A.2.1. IOSUD has a modern research infrastructure that supports the development of activities specific to doctoral studies.	A.2.1.1. The spaces and infrastructure of the doctoral school allow the implementation of the research activities, in the evaluated field, in accordance with the assumed mission and objectives (computers, specific software, apparatus, laboratory equipment, library, access to international databases, etc.). The research infrastructure and the offer of research services are presented publicly through a specialized platform. The research infrastructure described above, acquired and developed in the last 5 years, will be highlighted separately.	<p>A.2.1.1. The spaces and infrastructure of IOSUD / Doctoral School allow the implementation of research activities in the evaluated field, in accordance with the mission and objectives assumed (computers, specific software, equipment, laboratory equipment, library, access to international databases, etc.).</p> <ul style="list-style-type: none"> • The Central Library of UPT offers access to information resources both traditionally and electronically. The library has the following types of information resources: monographs, periodical publications, electronic resources with local access and remote access. They are 45% free on the book-shelf and 55% in book and magazine stores. • The library has an area of 8400 m², 6 levels, 750 reading places, Reading room 24h access with 100 seats, Group study rooms, Conference room, Multimedia rooms, IT spaces, Individual study rooms as well as spaces for relaxation. 	<i>fulfilled</i>

- The informational resources can be accessed by the library users by searching the electronic Catalog or by direct access to the book-shelf, the books in free access, being arranged as follows:
 - In alphabetical order of the domain / subdomain;
 - Within the domains / subdomains in alphabetical order of the quota (respecting the author / title of the publication);
 - Within the quota belonging to an author / title in the alphabetical order of the titles;
 - Within the same title, in the order of editions / chronological;
 - In the edition of the same title, in ascending order of inventory number.
- The library collections with free access to the book-shelf are presented in the following table.

1. The Art. Science. Technique	Art. Science. Technique	Fl. IIB - Free access
	Book Deposit	Basement
2. Doctoral	Doctoral theses	Fl. IIIA - Free access
	Book Deposit	Basement
3. Language. Linguistics. Literature	Language. Literature	Fl. IIIB - Free access
	Book Deposit	Basement
4. Standards	Standards	Fl. IIIA - Free access
5. References	References	Fl. IIA - Free Access
	Card Storage	Basement
6. Journals	Journals	Et. IIB - Free access
	Journal Deposit	Ground floor
7. Bibliographies	Bibliographies	Et. IA - Free access
	Bibliographies Deposit	Basement
8. Old books	Old books	Basement
9. Rare books	Rare books	Basement

10. UPT Professors
Collection (1920-1955)


UPT Professors
Collection (1920-1955)

Basement

- Access to information resources is made through the Web page, at: <https://library.upt.ro/>.
- The online catalog can be accessed in two ways:
 1. from the WEB page

Caută în catalogul online al BUPT ...

2. from the WEB page

 CATALOGUL ONLINE - PRIMO

- The Library databases can be accessed at: <https://library.upt.ro/baze-de-date/>
- or
- Directly from the PRIMO search system module, by selecting Primo, Central Index and Subscribed Databases



The library's subscribed databases are:

Baze de date



Platforma de cercetare ScienceDirect oferă acces în text integrat la reviste științifice de cercetare în format online, cărți academice, serii de cărți și enciclopedii online. Peste 26% din informația apărută la nivel global în domeniile științe exacte și științe umaniste, tehnologie și medicină este publicată pe platforma Elsevier ScienceDirect. Este incontestabil, cea mai importantă resursă informațională academică a zilelor noastre și cuprinde revistele publicate de grupul editorial Elsevier (gruparea editurilor: Elsevier, Churchill Livingstone, Saunders, Mosby, Cell Press, Pergamon, Butterworth-Heinemann, Academic Press, The Lancet, JAI Press, North-Holland, Elsevier).



IEEE/IEET Electronic Library (IEL) oferă acces la mai mult de 6 teraite de literatură din domeniul ingineriei și a științelor calculatoarelor din întreaga lume, jurnale și discuri materiale de foarte bună calitate de la Institute of Electrical and Electronics Engineers (IEEE) și Institution of Engineering and Technology (IET). Este o bază de date ideală pentru universități, corporații și agenți guvernamentali.

Un abonament la IEEE/IEET Electronic Library oferă acces la textul integrat pentru toate revistele, ziarele, lucrările și raportările de la diverse conferințe editate de IEEE, reviste și lucrări de la diverse conferințe editate



Platforma SpringerLink oferă acces cu text integrat la reviste științifice de cercetare în format online, fără alt suport magnetic sau pe hartie. Este una din cele mai utilizate resurse electronice de documentare științifică din lume și de la noi din țară. Înființată în anul 1996, platforma SpringerLink a continuat să evolueze în funcție de nevoile cercetătorilor și în prezent conține peste 2.000 de titluri de reviste (data de 1.05.11 în 2008), peste 169.500 de cărți online, peste 4.400 serii de cărți și 307 de lucrări de referință online, peste 34.000 de protocoale, colecțiile sale conținând reviste de la cele mai mari societăți științifice din lume.



Scopus este o bază de date bibliografică și sistematică în format online, cuprinzând reviste științifice, lucrări prin intermediul Internetului. Oferă acces la rezumatele articolelor științifice din peste 18500 de reviste științifice internaționale publicate la peste 2000 de edituri internaționale. Utilizează ca instrument de evaluare indicatul Hirsch care permite evaluarea autorilor și institutiilor academice în baza raportului dintre articolele publicate și numărul de citări primite.



Web of Knowledge este una dintre cele mai importante surse de documentare științifică la nivel mondial. Scopul acestei baze de date este de a oferi informații despre recunoașterea științifică a articolelor științifice și de identificare a noilor tendințe și tehnologii la nivel mondial. Web of Knowledge este autoritatea recunoscută pentru evaluarea ISI a jurnalelor științifice, creat în colaborare cu prestigiosul Institute for Scientific Information din Philadelphia, SUA.



Baza de date "Legis Plus" conține peste 35.000 de acte normative (legi, decrrete, hotărâri, ordonanțe, ordine, cîrți, norme, practici, amase, acte republicate) din anul 1878 și până în prezent. (vee actualizarea costă cu aparțină Monitorului Oficial).

		<ul style="list-style-type: none"> Traditional information resources not found in the electronic catalog can be found in traditional library catalogs. The accesses to the databases subscribed within the Anelis Consortium (later Anelis Plus) during May-October 2018 are: <ol style="list-style-type: none"> IP: 48,321 accesses; Mobile access: 390,281 accesses. Within the field of Electronic Engineering, Telecommunications and Information Technologies, the research equipment can be found on the ERRIS platform, accessing the link: https://eeris.eu/ERIO-2000-000R-0036 <p>The research infrastructure is presented in detail in Annex A.2.1.1.</p>	
A.3. Quality of human resources			
Standards	Performance indicators	Findings	Degree of fulfillment of the requirement <i>fulfilled / partially fulfilled / not fulfilled</i>
A.3.1. At the level of each doctoral field there are qualified personnel with the necessary experience to carry out the program of doctoral studies.	A.3.1.1. Within the doctoral field, at least 3 doctoral coordinators are engaged in doctoral activities and at least 50% of them (but not less than three) meet the minimum standards of the National Council for Attestation of University Degrees, Diplomas and Certificates	A.3.1.1. Within the field of Electronic Engineering, Telecommunications and Information Technologies , 15 doctoral coordinators are affiliated to IOSUD - UPT. 13 of them meet the minimum CNATDCU criteria imposed by OMEN 6129/2016. The following table summarizes the situation regarding the fulfillment of the minimum standards for the reporting period January 2016 - December 2020, and in Annex A.3.1.1 . are presented the tables with the minimum	<i>fulfilled</i>

(CNATDCU) at the moment of the evaluation, necessary and obligatory for obtaining the habilitation certificate.

standards detailed on criteria, for each of the 15 doctoral coordinators in the field of **Electronic Engineering, Telecommunications and Information Technologies**.

No.	Name, Surname	Minimum conditions CNATDCU (total) (Score)	Completed for the entire activity (Score)	Meets CNATDCU standards
1	Ancuți Codruța O.	850	6142.08	YES
2	Ancuți Cosmin	850	6562.69	YES
3	Belega Daniel	850	5011	YES
4	Căleanu Cătălin	850	2006.85	YES
5	De Sabata Aldo	850	1987.74	YES
6	Gontean Aurel	850	2223.96	YES
7	Isar Alexandru	850	2703.92	YES
8	Lascu Dan	850	1462.12	YES
9	Lascu Mihaela Ruxandra	850	1260.02	YES
10	Naforniță Corina	850	2209.13	YES
11	Naforniță Ioan	850	2762.11	YES
12	Naforniță Miranda Monica	850	2099.98	YES
13	Oteșteanu Marius	850	2378.63	NO
14	Tiponuț Virgil	850	-	-
15	Vasiu Radu	850	7100.9	YES

13/15 *100= 86.6 % meet the standards
- CRITERIA FULFILLED ≥ 50%

***A.3.1.2.** At least 50% of the doctoral coordinators for the evaluated doctoral field, are tenured professors and have an employment contract for an indefinite period within the IOSUD-UPT.

***A.3.1.2.** Within the field of **Electronic Engineering, Telecommunications and Information Technologies**, 15 doctoral coordinators are affiliated to IOSUD-UPT. 12 of them are tenured professors within IOSUD UPT ([Annex A.3.1.2.](#)).

fulfilled

No.	Name, Surname	Order of Minister by which they were conferred the quality of doctoral coordinator	STATUTE
1	ANCUȚI Codruța Orniana	4047/09.04.2020	CDT
2	ANCUȚI Cosmin	623/06.11.2014	CDT
3	BELEGA Daniel Cornel	5633 MD/11.12.2013	CDT
4	CĂLEANU Cătălin Daniel	4209/10.06.2015	CDT
5	DE SABATA Aldo	4458MD/09.08.2013	CDT
6	GONTEAN Aurel-Ștefan	5842/04.11.2008	CDT
7	ISAR Alexandru-Nicolae	4807/17.08.2005	CDT
8	LASCU Dan Florentin	4697/14.08.2009	CDT
9	LASCU Mihaela-Ruxandra	3987/07/06.2016	CDT
10	NAFORNIȚĂ Corina Alda	4209/10.06.2015/19	CDT
11	NAFORNIȚĂ Ioan-Lucian	5371/10.02.1994	CDFC
12	NAFORNIȚĂ Miranda-Monica	4211/20.07.2000	CDFC
13	OTEȘTEANU Marius-Emil	4807/17.08.2005	CDT
14	TIPONUȚ Virgil	5371/10.02.1994	CDFC
15	VASIU Radu-Adrian	4807/17.08.2005	CDT

CDT - doctoral coordinator - contract for an indefinite period
 CDA - associate doctoral coordinator
 CDFC - doctoral coordinator without contract
 15 doctoral coordinators in total

$12/15 * 100 = 80\%$ tenured professors
 - CRITERION FULFILLED $\geq 50\%$

A.3.1.3. The courses of the training program based on advanced university studies, related to the evaluated doctoral field, are sustained	A.3.1.3. The courses in the training program based on advanced university studies related to the evaluated field are supported by professors or researchers who have the level of doctoral coordinator / holders of	<i>fulfilled</i>
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	<p>by professors or researchers who have the level of doctoral coordinator / holders of habilitation degree, professor / CS I or associate professor / CS II with proven expertise in the field of taught subjects or other experts that meet the standards established by the institution for the positions mentioned above, in accordance with the law.</p>	<p>habilitation degree, professor / CS I or associate professor / CS II with proven expertise in the field of taught subjects.</p> <p>The training program based on advanced university studies includes the following <i>types of courses</i>:</p> <ul style="list-style-type: none"> • CROSS-CURRICULAR COURSE: is sustained for all doctoral students of the 1st year. <p>In the period 2008-2017 the course title was: "<i>Scientific research, communication and deontology</i>". The subject content is public and can be found at:</p> <p>http://www.upt.ro/Informatii_cscs_419_ro.html.</p> <p>Starting with 2018, the cross-curricular course is named "<i>Ethics and academic integrity in scientific research and dissemination of results</i>"</p> <p>The subject content is public and can be accessed at:</p> <p>http://www.upt.ro/Informatii_etica-si-integritate-academica-in-cercetarea-stiintifica-si-1409_en.html</p> <p>The course has the following structure:</p> <ul style="list-style-type: none"> • 7 course lessons - subject tenure: <i>Prof.univ.dr.ing. Toma Leonida Dragomir</i>, • 7 conferences - given by professors, all scientific recognized experts: <i>Prof.univ.dr.ing. Radu Vasiu, Prof.univ.dr.ing. Ștefan Preitl, Prof.univ.dr.ing. Radu Marinescu, Prof.univ.dr.ing. Ștefan Holban, Acad.prof.univ.dr.ing. Ion Boldea, Prof.univ.dr.ing. Romeo Susan Resiga, Acad.prof.univ.dr.ing. Dan Dubină</i> • 7 seminars - held by 6 professors, all scientific recognized experts: <i>Prof.univ.dr.ing. Daniel Andreescu, Prof.univ.dr.ing. Liviu Marșavina, Prof.univ.dr.ing. Nicolae Vaszilcsin, Prof.univ.dr.ing. Ștefan Preitl, Prof.univ.dr.ing. Dinu Florea, Prof.univ.dr.ing. Dorin Lelea.</i> 	
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		<ul style="list-style-type: none"> Starting with 2020/2021, the activities related to the course "<i>Ethics and academic integrity in scientific research and dissemination of results</i>" are held in the frame of Virtual Campus platform of the Politehnica University Timișoara. MASTER degree courses, which were not previously attended by the doctoral student. TUTORIAL courses: in the subject of doctoral research (based on individual study program proposed and coordinated by the doctoral coordinator). <p>For all courses within the training program based on advanced university studies, the courses are sustained by professors or researchers who have the level of doctoral coordinator / holders of habilitation degree, professor / CS I or associate professor / CS II with proven expertise in the field of taught subjects.</p> <p>In Annex A.3.1.3, the courses of the training program based on advanced university studies and their tenures are exemplified (which constitute Annex 1 to the doctoral study contract for each doctoral student).</p>	
	<p>*A.3.1.4. The percentage of doctoral coordinators who coordinate more than 8 doctoral students at the same time, but not more than 12, during their doctoral studies¹, does not exceed 20%.</p>	<p>*A.3.1.4. The list of doctoral coordinators and the number of doctoral students coordinated at the date of this report, is included in Annex A.3.1.4.</p> <p>Out of the total of 15 doctoral coordinators in the field of Electronic Engineering, Telecommunications and Information Technologies, 0 (zero) doctoral coordinators supervise at the same time more than 8 doctoral students, but not more than 12, during their doctoral studies (3 or 4 years, depending on the doctoral field, to which are added the legally granted extension periods). Therefore, the percentage is:</p> $(0/15) * 100 = 0\%$ <p>CRITERION FULFILLED $\leq 20\%$</p>	<p><i>fulfilled</i></p>

<p>A.3.2. Doctoral coordinators from the specific doctoral field have an internationally visible scientific activity.</p>	<p>A.3.2.1. At least 50% of the doctoral coordinators from the evaluated doctoral field present at least 5 publications indexed Web of Science or ERIH in journals with impact factor or other achievements, with relevant relevance for the respective field, with international contributions that reveal a progress in scientific research - development - innovation for the evaluated doctoral field.</p> <p>The above mentioned doctoral coordinators have international visibility in the last five years, consisting in: the member of the scientific committees of the international journals and conferences; membership in the boards of international professional associations; the invited speaker at conferences or groups of experts held abroad or the member of commissions for the defense of doctoral theses at foreign universities or in co-supervision with a foreign university. For the art science and sport sciences and physical education, the doctoral coordinators will prove the international visibility for the last 5 years by being a member</p>	<p>A.3.2.1. From the 15 doctoral coordinators from the field of Electronic Engineering, Telecommunications and Information Technologies, 13 fulfilled this criterion.</p> <p>In Annex A.3.2.1-1. - <i>The lists with 5 publications or other achievements</i>, are presented for each doctoral coordinator. At least 5 publications indexed Web of Science or ERIH are published in journals with impact factor or other achievements, with relevant significance to the evaluated doctoral field.</p> <p>In Annex A.3.2.1-2. - <i>Member of commissions / groups abroad</i>, the nominal participations of the doctoral coordinators of the field of Electronic Engineering, Telecommunications and Information Technologies are presented.</p> <p style="text-align: center;"> $13/15 * 100 = 86.6\%$ CRITERION FULFILLED $\geq 50\%$ </p>	<p><i>fulfilled</i></p>
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	<p>of the boards of professional associations, a member of the organizing committees of artistic events and international competitions, respectively for membership in juries or arbitration teams in artistic events or international competitions.</p>																																																										
	<p>*A.3.2.2. At least 50% of the doctoral coordinators from the evaluated doctoral field continue to be scientifically active, obtaining at least 25% of the score required by the minimum CNATDCU standards in force at the date of evaluation, necessary and mandatory to obtain the habilitation degree, based on scientific results within the last 5 years.</p>	<p>*A.3.2.2. The nominal situation regarding the doctoral coordinators that fulfilled this criterion is as follows:</p> <table border="1" data-bbox="992 818 1944 1399"> <thead> <tr> <th data-bbox="992 818 1070 975">No.</th> <th data-bbox="1070 818 1451 975">Last name, First name</th> <th data-bbox="1451 818 1733 975">Percentage achieved (2016 - 2020)</th> <th data-bbox="1733 818 1944 975">At least 25% in the last 5 years of the minimum score of standard</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>ANCUȚI Codruța Orniana</td> <td>3100/850 = 364.7 %</td> <td>YES</td> </tr> <tr> <td>2</td> <td>ANCUȚI Cosmin</td> <td>3470/850 = 408.2 %</td> <td>YES</td> </tr> <tr> <td>3</td> <td>BELEGA Daniel Cornel</td> <td>1570/850 = 184.7 %</td> <td>YES</td> </tr> <tr> <td>4</td> <td>CĂLEANU Cătălin Daniel</td> <td>733/850 = 86 %</td> <td>YES</td> </tr> <tr> <td>5</td> <td>DE SABATA Aldo</td> <td>671.82/850 = 79 %</td> <td>YES</td> </tr> <tr> <td>6</td> <td>GONTEAN Aurel-Ștefan</td> <td>909.91/850 = 107 %</td> <td>YES</td> </tr> <tr> <td>7</td> <td>ISAR Alexandru-Nicolae</td> <td>512.18/850 = 59.9 %</td> <td>YES</td> </tr> <tr> <td>8</td> <td>LASCU Dan Florentin</td> <td>355.81/850 = 41.8 %</td> <td>YES</td> </tr> <tr> <td>9</td> <td>LASCU Mihaela-Ruxandra</td> <td>227.47/850 = 26.7 %</td> <td>YES</td> </tr> <tr> <td>10</td> <td>NAFORNIȚĂ Corina Alda</td> <td>792.29/850 = 93.2 %</td> <td>YES</td> </tr> <tr> <td>11</td> <td>NAFORNIȚĂ Ioan-Lucian</td> <td>461.25/850 = 54.2 %</td> <td>YES</td> </tr> <tr> <td>12</td> <td>NAFORNIȚĂ Miranda-Monica</td> <td>233.33/850 = 27.4 %</td> <td>YES</td> </tr> <tr> <td>13</td> <td>OTEȘTEANU Marius-Emil</td> <td>792.29/850 = 93.2 %</td> <td>YES</td> </tr> </tbody> </table>	No.	Last name, First name	Percentage achieved (2016 - 2020)	At least 25% in the last 5 years of the minimum score of standard	1	ANCUȚI Codruța Orniana	3100/850 = 364.7 %	YES	2	ANCUȚI Cosmin	3470/850 = 408.2 %	YES	3	BELEGA Daniel Cornel	1570/850 = 184.7 %	YES	4	CĂLEANU Cătălin Daniel	733/850 = 86 %	YES	5	DE SABATA Aldo	671.82/850 = 79 %	YES	6	GONTEAN Aurel-Ștefan	909.91/850 = 107 %	YES	7	ISAR Alexandru-Nicolae	512.18/850 = 59.9 %	YES	8	LASCU Dan Florentin	355.81/850 = 41.8 %	YES	9	LASCU Mihaela-Ruxandra	227.47/850 = 26.7 %	YES	10	NAFORNIȚĂ Corina Alda	792.29/850 = 93.2 %	YES	11	NAFORNIȚĂ Ioan-Lucian	461.25/850 = 54.2 %	YES	12	NAFORNIȚĂ Miranda-Monica	233.33/850 = 27.4 %	YES	13	OTEȘTEANU Marius-Emil	792.29/850 = 93.2 %	YES	<p><i>fulfilled</i></p>
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		14	TIPONUȚ Virgil	-	-
		15	VASIU Radu-Adrian	1715.58/850 = 201.8 %	YES
<p>(14/15) * 100 = 93.3%</p> <p>CRITERION FULFILLED ≥ 50%</p> <p>In Annex A.3.2.2., the scores from the activity for the last 5 years (January 2016 - December 2020) are presented in a detailed manner.</p>					

B. EDUCATIONAL EFFICIENCY

B.1. Number, quality and diversity of candidates who applied for the admission competition

Standards	Performance indicators	Findings	Degree of fulfillment of the requirement <i>fulfilled / partially fulfilled / not fulfilled</i>								
B.1.1. The institution organizing the doctoral studies has the capacity to attract candidates from outside the higher education institution or in greater numbers than the number of	*B.1.1.1. The ratio between the number of master's degree graduates of other higher education institutions in the country or abroad who have registered for the competition for admission to doctoral studies in the last 5 years and the number of positions financed from the state budget considered for competition in	<p>*B.1.1.1. The ratio between M.Sc. graduates from educational institutions other than IOSUD - UPT, enrolled for doctoral admission (last 5 years) and the number of positions financed from the state budget - field of Electronic Engineering, Telecommunications and Information Technologies is summarized in the following table:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Academic Year</th> <th style="text-align: center;">Candidates enrolled (M.Sc. graduates from other universities) (1)</th> <th style="text-align: center;">State budget positions (2)</th> <th style="text-align: center;">Total number of candidates (3)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Academic Year	Candidates enrolled (M.Sc. graduates from other universities) (1)	State budget positions (2)	Total number of candidates (3)					<i>Partially fulfilled</i>
Academic Year	Candidates enrolled (M.Sc. graduates from other universities) (1)	State budget positions (2)	Total number of candidates (3)								

<p>positions financed from the state budget.</p>	<p>the doctoral field is at least 0.2, or the ratio of the number of candidates in the last five years and the number of positions financed from the state budget considered for competition in the doctoral field is at least 1.2.</p>	<table border="1" data-bbox="994 172 1906 488"> <tr> <td>2019/2020</td> <td>2</td> <td>8</td> <td>10</td> </tr> <tr> <td>2018/2019</td> <td>0</td> <td>3</td> <td>4</td> </tr> <tr> <td>2017/2018</td> <td>1</td> <td>7</td> <td>9</td> </tr> <tr> <td>2016/2017</td> <td>0</td> <td>9</td> <td>6</td> </tr> <tr> <td>2015/2016</td> <td>2</td> <td>10</td> <td>9</td> </tr> <tr> <td>TOTAL</td> <td>5</td> <td>37</td> <td>38</td> </tr> <tr> <td>Ratio: (1)/(2)</td> <td>0.14</td> <td></td> <td></td> </tr> <tr> <td>Ratio: (3)/(2)</td> <td></td> <td></td> <td>1.03</td> </tr> </table> <p style="text-align: center;"> CRITERION FULFILLED ≥ 0.2 Or CRITERION FULFILLED ≥ 1.2 </p> <p>The list of candidates enrolled for doctoral studies in IOSUD - UPT, M.Sc. graduates from other higher education institutions in the country or abroad, is presented in Annex B.1.1.1-1.</p> <p>The number of positions financed from the state budget in the last 5 years (2015-2019) are presented in Annex B.1.1.1-2.</p> <p>The list of candidates enrolled for doctoral studies in IOSUD - UPT, in the last 5 years (2015-2019), is presented in Annex B.1.1.1-3.</p>	2019/2020	2	8	10	2018/2019	0	3	4	2017/2018	1	7	9	2016/2017	0	9	6	2015/2016	2	10	9	TOTAL	5	37	38	Ratio: (1)/(2)	0.14			Ratio: (3)/(2)			1.03	
2019/2020	2	8	10																																
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Ratio: (3)/(2)			1.03																																
<p>B.1.2. Candidates admitted to doctoral studies demonstrate academic performance, research and training.</p>	<p>*B.1.2.1. Admission to doctoral study programs is based on selection criteria that include: the academic, research and professional performance of the candidates, their interest in scientific or artistic / sports research, publications in the field and a research topic proposal. An interview with the applicant is a mandatory part of the admission procedure.</p>	<p>*B.1.2.1. Admission to doctoral studies in IOSUD-UPT is regulated by the Institutional Procedure regarding the organization of admission to doctoral studies in IOSUD-UPT, updated annually with legislative acts.</p> <p>According to this procedure, there is a set of selection criteria (Annex 7 of the Admission Procedure) for candidates – Annex B.1.2.1.</p> <ul style="list-style-type: none"> Academic performance is quantified by grades N₁-N₄ in the Selection Criteria. The interview with the applicant – related to the quality and clarity of the research directions and intentions of study, in line with the presentation of the research topic proposal - is quantified on the basis of grade N₅ 	<p><i>fulfilled</i></p>																																

		<ul style="list-style-type: none"> • The interest for the scientific research is quantified with the grades N₆ - N₈ • publications in the field are quantified with the grades N₉ - N₁₀ <p>For the admission starting with the academic year 2019/2020, the information is public at:</p> <p>http://www.upt.ro/Informatii_arhiva---admitere-doctorat-2019_1418_en.html</p> <p>Admission to doctoral studies within IOSUD-UPT takes place on the basis of an admission interview.</p> <p>The Council of the Doctoral School of Engineering Studies from IOSUD-UPT, establishes and displays, after the registration period, the doctoral admission commissions associated with the doctoral fields from IOSUD-UPT. The doctoral admission commission comprises the permanent members, the secretary of the commission and the chairman of the commission. The permanent members of the commission are the same for both admission sessions.</p> <p>http://www.upt.ro/img/files/2018-2019/admitere/doctorat/IOSUD-UPT-admitere-2019_procedura.pdf</p>	
	<p>B.1.2.2. The rate of expulsion of the doctoral students, including after dropping out of studies, after 3, respectively 4 years from admission², does not exceed 30%.</p>	<p>B.1.2.2. The list of doctoral students admitted and enrolled for doctoral studies in IOSUD-UPT, for the admission sessions 2015, 2016, 2017, 2018, 2019 who were expelled in the first 3 years of the doctoral program is presented in Annex B.1.2.2., for the doctoral field of Electronic Engineering, Telecommunications and Information Technologies.</p> <p>Total enrolled (2015-2019): 37 Expelled in the first 3 years: 1 Abandonment rate = (1/37)*100=2.7 % CRITERION FULFILLED ≤ 30%</p>	<p><i>fulfilled</i></p>

B.2. Content of doctoral university study programs			
Standards	Performance indicators	Findings	Degree of fulfillment of the requirement <i>fulfilled / partially fulfilled / not fulfilled</i>
B.2.1. The training program based on advanced university studies is appropriate for improving the research skills of doctoral students and to strengthen ethical behavior in science.	B.2.1.1. The training program based on advanced university studies includes at least 3 courses relevant for the training of the doctoral students in scientific research. At least one discipline is intended for the in-depth study of research methodology and / or statistical data processing.	<p>B.2.1.1. The individual plan for the training of the doctoral student through advanced university studies, representing Annex 1 to the Contract of doctoral studies, contains three courses relevant for the scientific research training of the doctoral student. According to the UPT regulations (footnote 1 of the annex):</p> <p><i>“The individual plan will include the following types of courses:</i></p> <ul style="list-style-type: none"> <i>i) cross-curricular course, organized by the Doctoral School (SD);</i> <i>ii) tutorial course on doctoral research topic (based on individual study program proposed and mentored, by the doctoral coordinator);</i> <i>iii) MSc course (that was not previously attended by the doctoral student).</i> 	<i>fulfilled</i>

		<p><i>The cross-curricular course is mandatory. The other two courses can be of choice of type ii) or iii).</i></p> <ul style="list-style-type: none"> • The cross-curricular course (<i>related to all doctoral students in the first year</i>), adopted in UPT, is a discipline related to the research methodology and deontology of the scientific researcher, a discipline that in the period 2008-2018 was entitled <i>Scientific research, communication and deontology</i>, and starting with the year 2018 is entitled <i>Ethics and academic integrity in scientific research and dissemination of results</i>. <p>The subject content file is public and can be found at the addresses:</p> <ul style="list-style-type: none"> ○ http://www.upt.ro/Informatii_cscs_419_ro.html (2008-2017) and ○ http://www.upt.ro/Informatii_etica-si-integritate-academica-in-cercetarea-scientific-and-1409_en.html (present). <ul style="list-style-type: none"> • Within the course there are 7 lectures, 7 conferences (by different lecturers, all scientific recognized experts) and 7 seminars (by 6 distinct lecturers, all scientific recognized experts). This discipline (course) is intended for the in-depth study of the research methodology, being developed competencies and skills related to the research methodology. • The second and third disciplines in the plan are chosen by the doctoral coordinator so as to contribute to the deepening of the field and the doctoral topic. In Annex B.2.1.1-1, individual doctoral training plans are presented for the evaluated doctoral field. 	
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		<p>The evidence of the results, obtained for the courses from the individual training plan, is kept at the UPT Doctoral School in examination minutes, summarized in Annex 2 of the Contract of the doctoral studies (Annex B.2.1.1-2.).</p>	
	<p>B.2.1.2. There is at least one discipline dedicated to ethics in scientific research and intellectual property or the theme well-defined on these topics within a discipline taught in the training program.</p>	<p>B.2.1.2. Within the advanced university training program for doctoral students from IOSUD-UPT, the discipline is included, mandatory for all doctoral students</p> <p>“<i>Scientific research, communication and deontology</i>” (2008-2017). The subject content sheet is public and can be found at the following addresses: http://www.upt.ro/Informatii_cscs_419_en.html http://www.upt.ro/img/files/2016-2017/doctorat/cscd/170511_CSCD.pdf</p> <p>Starting with the year 2018 the cross-curricular course has been entitled “<i>Ethics and academic integrity in scientific research and dissemination of results</i>”. The subject content sheet is public and can be found at: http://www.upt.ro/img/files/2019-2020/doctorat/EIACSDR/200528_Fisa_disciplinei_EIACSDR-2019-2020.pdf</p> <p>The subject content sheets related to the academic years 2018/2019 and 2019/2020 are presented in Annex B.2.1.2.</p>	

	<p>B.2.1.3. IOSUD has created mechanisms to ensure that the training program based on advanced university studies, related to the evaluated field, aims at "learning outcomes", specifying the knowledge, skills and responsibility and autonomy that doctoral students should acquire after completing each discipline or through the research activities³.</p>	<p>B.2.1.3. The main objective of doctoral study programs is to prepare doctoral students, through mentored doctoral research, to become independent scientific researchers, confirmed by obtaining the doctoral degree after publicly defending the doctoral thesis, meeting the minimum performance indicators established by IOSUD-UPT, or the indicators established by the CNATDCU specialized commissions if they exceed the minimum UPT indicators.</p> <p>Currently, the competencies, skills and aptitudes acquired by doctoral students through the disciplines within the advanced university training program are specified in the course sheets as follows:</p> <ul style="list-style-type: none"> • For the cross-curricular course, followed by all doctoral students, competencies and skills related to research methodology are developed (structured on projects specific to scientific research, technological development and innovation based on research-development), but also the correct attitude related to the rules of research ethics and dissemination of research results, according to the cross-curricular course file (Annex B.2.1.3-1.), that for the academic year 2019-2020 can be found publicly at: http://www.upt.ro/img/files/2019-2020/doctorat/EIACSDR/200528_Fisa_disciplinei_EIACSDR-2019-2020.pdf • For the courses from MSc programs, recommended to the doctoral student by the doctoral coordinator, the competencies, skills and abilities developed, can be found in the course file, cf. Annex B.2.1.3-2. - Example of the MSc sheet. By completing such master's courses, complementary to the previous master's degree training, the doctoral student acquires additional professional skills related to the topic of the doctoral thesis. 	<p><i>fulfilled</i></p>
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		<ul style="list-style-type: none"> • After completing the tutorial courses, the doctoral student deepens topics specific to the doctoral topic, indicated by the doctoral coordinator, the examination being made by the doctoral coordinator along with the advising committee members. • The completion of the courses from the training program based on advanced university studies or doctoral research activities aims at acquiring the competencies and abilities related to level 8 of qualifications, according to the National Qualifications Framework (CNC). Consequently, IOSUD-UPT applies a procedure for verifying the fulfillment of the exigencies of the doctoral university studies (Annex B.2.1.3.). 	
	<p>B.2.1.4. Throughout the doctoral training period, doctoral students benefit from the advice / guidance of advising commissions, an aspect reflected by guidance and observations/recommendations expressed both in writing or regular meetings.</p>	<p>B.2.1.4. After the enrollment of the doctoral student following the admission session for doctoral studies in IOSUD-UPT, the doctoral coordinator proposes the composition of the advising commission, which is approved by the Director of the Doctoral School.</p> <ul style="list-style-type: none"> • The advising commission includes specialists in the field and subject of the doctoral thesis, who assist and guide the doctoral student on specific aspects of the doctoral research program. • The advising Commission members participates in all public meetings where the doctoral student presents the doctoral research project, respectively the research reports, on the dates established in the summary sheet of the research program. • The advising Commission notifies the doctoral student's presentation of the activities provided in the summary sheet of the scientific research program and mentions whether the activity is identical to the one provided in it, expressing its point of view on the importance and 	<p><i>fulfilled</i></p>

		<p>level of activity performed (footnote 4 of the minutes for evaluation of the activities of the scientific research program).</p> <p>In Annex B.2.1.4, are presented the documents related to proposal for the advising commission members and minutes supporting the doctoral research project and research reports of the doctoral students in the field of Electronic Engineering, Telecommunications and Information Technologies.</p>	
	<p>B.2.1.5. For a field of doctoral studies, the ratio between the number of doctoral students and the total number of professors/researchers providing advising should not exceed 3:1.</p>	<p>B.2.1.5. In Annex B.2.1.5, the doctoral students existing at the time of the evaluation and the composition of the advising commissions are presented for the field of Electronic Engineering, Telecommunications and Information Technologies.</p> <p style="text-align: right;">Nr. doctoral students (PhD): 32 Nr. professors in advising commissions (CD): 45 Ratio Drd/CD: 0.71 →CRITERION FULFILLED \leq 3: 1</p>	<i>fulfilled</i>
B.3. Results of doctoral studies and their evaluation procedures			
Standards	Performance indicators	Findings	Degree of fulfillment of the requirement <i>fulfilled / partially fulfilled / not fulfilled</i>

<p>B.3.1. The research is materialized by doctoral students through presentations at scientific conferences, scientific publications, through technology transfer, patents, products, service orders.</p>	<p>B.3.1.1. For the evaluated field there is at least one article or other relevant contribution per doctoral student who has obtained the title of doctor in the last 5 years. The members of the evaluation commission select for analysis, randomly, 5 such relevant articles / contributions per doctoral field. At least 3 of the selected articles have significant original contributions in the evaluated field.</p>	<p>B.3.1.1. The doctoral field Electronic Engineering, Telecommunications and Information Technologies:</p> <ul style="list-style-type: none"> • Number of doctoral students who obtained the doctoral degree in the period 2016-2020: 7 • The list of relevant papers prepared by doctoral students who obtained the doctoral degree in the period 2016-2020 can be found in Annex B.3.1.1. 	<p><i>fulfilled</i></p>
	<p>*B.3.1.2. The ratio between the number of presentations of doctoral students who have completed their doctoral studies in the evaluated period (last 5 years), including posters, exhibitions, held at prestigious international events (held in the country or abroad), and the number of doctoral students who have completed their doctoral studies in the evaluated period (last 5 years) is at least equal to 1.</p>	<p>*B.3.1.2 The doctoral field Electronic Engineering, Telecommunications and Information Technologies</p> <ul style="list-style-type: none"> • Number of doctoral students who obtained the doctoral degree in the period 2016-2020: 7 • Number of articles presented at conferences: 25 <p>Each doctoral student has at least one paper presented at prestigious international events, the details can be found in Annex B.3.1.2. - List of students who obtained the title of doctor in the period 2016-2020 and the number of participation in conferences - field of Electronic Engineering, Telecommunications and Information Technologies.</p> <p style="text-align: center;">$25/7 = 3.57$</p> <p style="text-align: center;">CRITERION FULFILLED ≥ 1</p>	<p><i>fulfilled</i></p>

<p>B.3.2. The Doctoral School appeals to a significant number of external scientific experts in the commissions for public defense of doctoral theses, for the analyzed doctoral field.</p>	<p>*B.3.2.1. The number of doctoral theses assigned to a specific commission member from a higher education institution, other than the evaluated IOSUD, must not exceed two (2) for theses coordinated by the same doctoral coordinator, in the same year.</p>	<p>*B.3.2.1. For the field of Electronic Engineering, Telecommunications and Information Technologies, in the period 2016-2020, THERE WERE NO cases in which the same expert was part of more than two doctoral commissions for the public defense of theses coordinated by the same doctoral coordinator in the same year, as follows:</p> <ul style="list-style-type: none"> • 2016: 2 theses defended. • 2017: No thesis defended. • 2018: No thesis defended. • 2019: 4 theses defended. No doctoral coordinator has had more than two theses defended. • 2020: 1 thesis defended. <p>List of students who defended their doctoral theses in the period 2016-2020 and the commissions of scientific experts - the field of Electronic Engineering, Telecommunications and Information Technologies are presented in Annex B.3.2.1.</p>	<p><i>fulfilled</i></p>
	<p>*B.3.2.2. The ratio between the number of doctoral theses assigned to a certain scientific expert from another higher education institution than the one in which the doctoral thesis is organized and the number of doctoral theses defended in the same doctoral field within the doctoral school must not be higher than 0.3, compared to the situation highlighted in the last 5 years. It is analyzed only if 10 doctoral theses have been defended in the last 5 years, in the evaluated doctoral field.</p>	<p>*B.3.2.2.</p> <p>For the field of Electronic Engineering, Telecommunications and Information Technologies, in the period 2016-2020, 7 doctoral theses were defended.</p> <p>According to the specifications of indicator B.3.2.2 only those doctoral fields are analyzed in which at least ten doctoral theses have been defended in the last five years.</p>	<p><i>fulfilled</i></p>
<p>C. QUALITY MANAGEMENT</p>			

C.1. Existence and regular progress of the internal quality assurance system			
Standards	Performance indicators	Findings	Degree of fulfillment of the requirement <i>fulfilled / partially fulfilled / not fulfilled</i>
<p>C.1.1. The existence of the institutional framework where the policies and procedures are applied for monitoring the internal quality assurance.</p>	<p>C.1.1.1. The doctoral school with the doctoral field proves the constant development of the process of evaluation and internal quality assurance, in accordance with a procedure developed and applied at IOSUD level, Among the evaluated criteria the following are mandatory:</p> <p>(a) the scientific activity of doctoral coordinators;</p>	<p>C.1.1.1. Annex C.1.1.1-a.</p> <p>In UPT, the teaching and research staff periodically present the results of the research activity to the management of the department / faculty / university. The results are presented in documents standardized at the national level, centralized at department and university level and uploaded on the IT platform of Ministry of Education (ME). The results are considered for the process of allocating funding by ME and verified / validated by CNFIS.</p> <p>In addition to these reports, there are also internal reports in UPT that are used in the process of allocating funding to departments (eg. internal reports made on the electronic platform COGITO, models / electronic evaluation grids used for evaluation of the teaching and research results to obtain the degree of merit).</p> <p>These results are discussed, analyzed by the Board of Directors and departments, and presented and validated in the Annual Report of the</p>	<p><i>fulfilled</i></p>

		<p>Rector of UPT and in other institutional documents, such as, for example, Research Report.</p> <p>The reports are used to monitor and evaluate the results and performances of teaching and research activities, both in terms of meeting the minimum standards developed / approved based on art. 303 para. (4) of LEN 1/2011, acc. HS no. 135 / 17.04.2014 as well as the fulfillment of OMENCŞ no. 6129/2016, regarding the approval of the minimum necessary and obligatory standards for granting the didactic titles in higher education, of the professional degrees of research-development, of the quality of doctoral coordinator and of the habilitation degree.</p>	
	<p>(b)infrastructure and logistics necessary to carry out the research activity;</p>	<p>C.1.1.1-b. "UPT's strategic development plan for the period 2016-2020" considered the continuation of activities and the development of mechanisms to support research excellence in the university. In order to achieve these goals, the constant development of UPT's research infrastructure at the level of international standards, is necessary.</p> <p>UPT's research activity is mainly carried out in the frame of 25 UPT research centers. Their research infrastructure is highlighted on the ERRIS platform, at the following link:</p> <p>https://eeris.eu/ERIO-2000-000R-0036</p> <p>Among the most important research infrastructures in UPT we can emphasize <i>the Research Institute for Renewable Energies - ICER</i>. It was funded by the POSCCE operational program, priority axis 2 "Competitiveness through Research, Technological Development and Innovation", in a period 2009–2014. The total value of the project was 66 882 357 lei. 18 new research laboratories were created and 5 were modernized, 120 equipments were purchased, 12 of them with a value of over 100,000 EUR. Many of the existing high-performance equipment at</p>	<p><i>fulfilled</i></p>

		<p>ICER are unique within the Timisoara University Center. These are used for research grants in interdisciplinary fields proceeding in UPT: Complex projects, PED, Bridge, H2020, cross-border projects, etc.</p> <p>Another research center of UPT with a remarkable infrastructure is <i>the Research Center for Materials Mechanics and Structural Safety (CEMSIG)</i>, established in 1999. The research areas emphasis on cold formed metal structures and the performance of metal and composite structures under seismic actions, fire and other natural and human hazards, as well as on high-performance materials for metal structures located in seismic regions. Through a POSCCE-contract <i>ACTEX</i>, CEMSIG benefited from research infrastructure worth 21 000 000 lei.</p> <p>The development of UPT's research infrastructure is achieved through research and development contracts carried out in the university, obtained through national and international competitions, but also through UPT's internal research grants, organized in recent years and financed from UPT's own revenues and oriented to young researchers.</p>	
	<p>(c) regulations and procedures on the basis of which the doctoral studies are organized.</p>	<p>C.1.1.1-c. - Continuous updating of regulations, procedures, and working instructions in accordance with national legislation, but also with the evolution of the requirements of doctoral students or doctoral coordinators.</p> <p>The procedure for admission to doctoral studies is updated periodically, in accordance with the modifications of national legislation.</p> <p>For the academic year 2019-2020, the procedure can be found at: http://www.upt.ro/img/files/2018-2019/admitere/doctorat/IOSUD-UPT-admitere-2019_procedura.pdf</p> <p>The contract for doctoral studies is updated annually.</p>	<p><i>fulfilled</i></p>

		<p>The documents related to doctoral students enrolled in the period 2015-2019 can be found publicly at:</p> <p>http://www.upt.ro/Informatii_documentele-doctoranzilor-inmatriculati-in-perioada-2005-201_289_en.html</p>	
(d) the scientific activity of doctoral students;	<p>C.1.1.1-d. - According to the internal regulations of IOSUD - UPT, the minimum criterion for defending the doctoral thesis is the publication of 2 scientific papers indexed in the WOS database. This aspect is regulated in the Contract for doctoral studies, by art. 16.</p> <p>Also, the scientific activity of doctoral students is monitored by the advising commissions during the doctoral study.</p> <p>At the same time, within IOSUD-UPT, during the reporting period, the program to support doctoral students for the publication of papers in WOS indexed journals as well as the participation at conferences with WOS indexed procedures, was carried out. Details can be found at:</p> <p>http://www.upt.ro/international/Mobilitati-Si-Cooperari-Internationale_Programul-de-finantare-ISI_27_ro.html</p>	<i>fulfilled</i>	
(e) the training program based on advanced university studies of doctoral students.	<p>C.1.1.1-e. The courses of the training program based on advanced university studies related to the doctoral field are sustained by professors or researchers who have the quality of doctoral coordinator / professor / CS I or associate professor / CS II with proven expertise in the field of taught subjects.</p> <p>The training program based on advanced university studies includes the following <i>types of courses</i>:</p> <ul style="list-style-type: none"> • CROSS-CURRICULAR COURSE: is sustained for all doctoral students of the 1st year. <p>In the period 2008-2017 the course title was: "<i>Scientific research, communication and deontology</i>". The subject content is public and can be found at:</p> <p>http://www.upt.ro/Informatii_cscs_419_ro.html.</p>	<i>fulfilled</i>	

		<p>Starting with 2018, the cross-curricular course is named “<i>Ethics and academic integrity in scientific research and dissemination of results</i>”</p> <p>The subject content is public and can be accessed at: http://www.upt.ro/Informatii_etica-si-integritate-academica-in_cercetarea-stiintifica-si-1409_en.html</p> <p>The course has the following structure:</p> <ul style="list-style-type: none"> • 7 course lessons - subject tenure: <i>Prof.univ.dr.ing.</i> Toma Leonida Dragomir, • 7 conferences - given by professors, all scientific recognized experts: <i>Prof.univ.dr.ing.</i> Radu Vasiu, <i>Prof.univ.dr.ing.</i> Ștefan Preitl, <i>Prof.univ.dr.ing.</i> Radu Marinescu, <i>Prof.univ.dr.ing.</i> Ștefan Holban, <i>Acad.prof.univ.dr.ing.</i> Ion Boldea, <i>Prof.univ.dr.ing.</i> Romeo Susan Resiga, <i>Acad.prof.univ.dr.ing.</i> Dan Dubină • 7 seminars - held by 6 professors, all scientific recognized experts: <i>Prof.univ.dr.ing.</i> Daniel Andreescu, <i>Prof.univ.dr.ing.</i> Liviu Marșavina, <i>Prof.univ.dr.ing.</i> Nicolae Vaszilcsin, <i>Prof.univ.dr.ing.</i> Ștefan Preitl, <i>Prof.univ.dr.ing.</i> Dinu Florea, <i>Prof.univ.dr.ing.</i> Dorin Lelea. • Starting with 2020/2021, the activities related to the course "<i>Ethics and academic integrity in scientific research and dissemination of results</i>" are held in the frame of Virtual Campus platform of the Politehnica University Timișoara. • MASTER degree courses, which were not previously attended by the doctoral student. • TUTORIAL courses: in the subject of doctoral research (based on individual study program proposed and coordinated by the doctoral coordinator). <p>For all courses within the training program based on advanced university studies, the courses are sustained by professors or researchers who have the level of doctoral coordinator / holders of habilitation degree, professor / CS I or associate professor / CS II with proven expertise in the field of taught subjects.</p>	
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		<p>In Annex A.3.1.3., the courses of the training program based on advanced university studies and their tenures are exemplified (which constitute Annex 1 to the doctoral study contract for each doctoral student).</p>	
	<p>(f) Social and academic support services (including participation in various events, publication of articles, etc.) and counseling provided to doctoral students.</p>	<p>(f) Within IOSUD-UPT, the Career Counseling and Guidance Center operates as a structure of the Politehnica University Timișoara (UPT) with the mission to offer the best possible information, professional orientation and social integration of students: https://www.cicoc.upt.ro/ https://www.facebook.com/CCOC.UPT</p> <p>Also, within the cross-curricular course of “<i>Ethics and academic integrity in scientific research and dissemination of results</i>”, lectures and seminars are organized in order to advise the doctoral students in participation at scientific events and the publication of articles in specialized journals: http://www.upt.ro/img/files/2020-2021/doctorat/EIACSDR/210421_Fisa_disciplinei_EIACSDR-2020-2021.pdf</p> <p>At the same time IOSUD-UPT financially supports the participation of doctoral students in scientific events and publication of scientific papers in WOS indexed journals: http://www.upt.ro/international/Mobilitati-Si-Cooperari-Internationale_Programul-de-finantare-ISI_27_en.html</p> <p>In 2018 within IOSUD-UPT, a scholarship program was developed for doctoral students participating in prestigious international conferences organized by UPT:</p>	<p><i>fulfilled</i></p>

		http://www.upt.ro/international/Mobilitati-Si-Cooperari-Internationale_Burse-pentru-doctoranzi-care-participate-in-conferences-organized-by-UPT_126_en.html	
	<p>*C.1.1.2. During the doctoral training program, mechanisms are implemented aimed to identify the needs, as well as the general level of satisfaction of the doctoral students for doctoral studies, in order to continuously improve the academic and administrative processes. Following the analysis of the obtained results, the elaboration and implementation of a plan of measures is proved.</p>	<p>*C.1.1.2. During the doctoral studies, doctoral students are periodically interviewed about the level of satisfaction regarding the advanced university training program (Annex C.1.1.2-1.) and the scientific research program (Annex C.1.1.2-2.).</p> <p>In the Annex C.1.1.2-3. a set of anonymous questionnaires from doctoral students is presented.</p> <p>Following the processing of questionnaires and the analysis of the answers offered by doctoral students, a set of measures is established to improve the general level of satisfaction with doctoral studies (Annex C.1.1.2-4.).</p>	<i>fulfilled</i>
C.2. Transparency of information and accessibility to learning resources			
Standards	Performance indicators	Findings	Degree of fulfillment of the requirement <i>fulfilled / partially fulfilled / not fulfilled</i>

<p>C.2.1.The information of interest for doctoral students, future candidates, respectively the information of public interest are available for consultation in electronic format.</p>	<p>C.2.1.1. IOSUD presented, on the institutional website, in compliance with the regulations in force regarding data protection, information such as:</p>	<p>C.2.1.1. The Doctoral School of Engineering Studies within IOSUD-UPT presented on the UPT website, in the section related to doctoral studies, http://www.upt.ro/Informatii_studii-universitare-de-doctorat_266_ro.html updated information on:</p>	<p><i>fulfilled</i></p>
	<p>a) doctoral school regulations;</p>	<p>a) The regulation of the doctoral school is part of the “Institutional Regulation for the Organization of the Doctoral Studies at the Politehnica University Timișoara”, http://www.upt.ro/administrare/dgac1/file/2011-2012/regulamente/Anexa_10_CartaUPT_Regulament_doctorat.pdf</p> <p>Considering that in IOSUD-UPT there is only one doctoral school that manages all doctoral fields, our option was a single document that includes the regulations for the organization of doctoral studies.</p>	<p><i>fulfilled</i></p>
	<p>b) the admission procedure</p>	<p>b) The procedure is updated annually, in order to bring it in line with the legislative changes at the national level, respectively with the number and distribution of doctoral positions by doctoral fields:</p> <p>http://www.upt.ro/img/files/2019-2020/admission/doctorate/HS_156_11-06-2020-IOSUD-UPT-admission-2020_PROCEDURA_anexe.pdf</p> <p>The procedures regarding the organization of the admission to doctoral studies in IOSUD-UPT for the period 2015 - 2019 can be found publicly at the addresses:</p>	<p><i>fulfilled</i></p>

		<ul style="list-style-type: none"> • 2019: http://www.upt.ro/img/files/2018-2019/admitere/doctorat/IOSUD-UPT-admitere-2019_prouctura.pdf • 2018: http://www.upt.ro/img/files/2017-2018/admission/doctorate/IOSUD-UPT-admission-2018_PROCEDURA_ANEXE.pdf • 2017: http://www.upt.ro/Informatii_admitere-2017---doctorat_620_ro.html • 2016: http://www.upt.ro/Informatii_admitere-2016---doctorat_843_ro.html • 2015: http://www.upt.ro/Informatii_admitere-2015---doctorat_401_ro.html 	
	<p>c) the doctoral studies contract;</p>	<p>c) The doctoral study contracts can be found publicly at the addresses: Year 2019/2020:</p> <ul style="list-style-type: none"> • scholarship: http://www.upt.ro/img/files/2019-2020/doctorat/Contract_Studii_Doctorale_bursa_2019.pdf • scholarship based on UPT own income: http://www.upt.ro/img/files/2019-2020/PhD/Contract_Studii_Doctorale_bursa_venituri_proprii_2019.pdf • scholarship UPT+: http://www.upt.ro/img/files/2019-2020/doctorat/Contract_Studii_Doctorale_bursa_UPT_si_venituri_proprii_2019.pdf • without scholarship: http://www.upt.ro/img/files/2019-2020/doctorat/Contract_Studii_Doctorale_fara_bursa_2019.pdf 	<p><i>fulfilled</i></p>

		<ul style="list-style-type: none"> • fee: http://www.upt.ro/img/files/2019-2020/doctorat/Contract_Studii_Doctorale_taxa_frecventa_reduasa_2019.pdf <p>Year 2018/2019:</p> <ul style="list-style-type: none"> • scholarship: http://www.upt.ro/img/files/2018-2019/doctorat/docdrd/Contract_Studii_Doctorale_bursa_2018.pdf • scholarship based on UPT own income: http://www.upt.ro/img/files/2018-2019/doctorat/docdrd/Contract_Studii_Doctorale_bursa%20venituri%20proprii_2018.pdf • No scholarship: http://www.upt.ro/img/files/2018-2019/doctorat/docdrd/Contract_Studii_Doctorale_fara%20bursa_2018.pdf • fee: http://www.upt.ro/img/files/2018-2019/doctorat/docdrd/Contract_Studii_Doctorale_taxa_frecventa%20reduasa_2018.pdf <p>Year 2017/2018:</p> <ul style="list-style-type: none"> • Scholarship: http://www.upt.ro/img/files/2017-2018/doctorat/docdrd/Contract_Studii_Doctorale_bursa_2017.pdf • without scholarship: http://www.upt.ro/img/files/2017-2018/doctorat/docdrd/Contract_Studii_Doctorale_fara%20bursa_2017.pdf • fee: http://www.upt.ro/img/files/2017-2018/doctorat/docdrd/Contract_Studii_Doctorale_taxa_2017.pdf <p>Year 2016/2017 and year 2015/2016: contracts can be accessed at: http://www.upt.ro/Informatii_documentele-doctoranzilor-inmatriculati-in-periodo-2005-201_289_en.html</p>	
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		<p>Their format is word password protected file, so that doctoral students had the opportunity to fill in only the fields with personal data, without being able to make the changes on the framework of the contract.</p>	
	<p>d) the regulations for completion of the doctoral studies, including the procedure for public defense of the thesis;</p>	<p>d) The regulation for completion of the doctoral studies is detailed in “Procedure for completion the doctoral studies and public defense of doctoral theses in UPT”,</p> <p>http://www.upt.ro/img/files/2018-2019/doctorat/HCA_nr71_06-2018_Instructiune_de_lucru_sustinere_publica.pdf</p> <p>The procedure for public defense of the doctoral thesis and the set up the doctoral file, used since 2016, is available at</p> <p>http://www.upt.ro/img/files/2015-2016/doctorat/Proectura_scepere_te.pdf</p> <p>The procedure for completion the doctoral studies and public defense of the thesis HCA 5 / 15.01.2019 is publicly available at:</p> <p>http://upt.ro/img/files/2019-2020/doctorat/HCA_5_din_2019_Instructiune_de_lucru_sustinere_te_doctorat.pdf</p> <p>In the current epidemiological context, for the online defense of doctoral theses, the “Procedure for online defense of doctoral theses in UPT is established for academic year 2019-2020” (HS no.111 / 14.05.2020),</p> <p>publicly available at:</p>	<p><i>fulfilled</i></p>


		<p>http://www.upt.ro/img/files/hs/2020/14.05.2020/HS_111_14.05.2020_Proectura-sustinere-online-teze-doctorat.pdf</p> <p>Through HS 231 / 17.09.2020 the validity of the Procedure for the online defense of doctoral theses in UPT for the academic year 2020-2021 has been extended.</p> <p>publicly available at:</p> <p>http://upt.ro/img/files/2019-2020/doctorat/HS_231_17-09-2020_Prelungire_valabilitate_proced_sustinere_online_teze_doctorat.pdf</p>	
	<p>e) Content of the training programs based on advanced university studies;</p>	<p>e) The information regarding the cross-curricular discipline, mandatory for all doctoral students, based on the advanced university training (first year of the doctoral studies program) is available at:</p> <ul style="list-style-type: none"> ● academic year 2017-2018: http://www.upt.ro/Informatii_cscs_419_ro.html, ● academic year 2018-2019: http://www.upt.ro/Informatii_eiacsdr_1075_ro.html, ● academic year 2019-2020: http://www.upt.ro/Informatii_eiacsdr-2019-2020_1682_ro.html. <p>The doctoral study program is customized for each doctoral student, at the proposal of the doctoral coordinator, regarding the master and / or tutorial courses from within the year of advanced university training, respectively from the doctoral research program.</p>	<p><i>fulfilled</i></p>

	<p>f) academic and scientific profile, the thematic areas / research topics of the doctoral coordinators from the doctoral field, as well as their institutional contact data;</p>	<p>f) The offer of doctoral coordinators is updated annually and used in the admission process for doctoral studies:</p> <ul style="list-style-type: none"> • Admission 2019: http://www.upt.ro/img/files/2018-2019/admitere/doctorat/Oferta_conducatori_de_doctorat_2019.pdf • Admission 2018: http://www.upt.ro/img/files/2017-2018/admitere/doctorat/Oferte_conducatori_doctorat-2018.pdf • Admission 2017: http://www.upt.ro/img/files/2016-2017/admitere/doctorat/oferte/Oferte_conducatori_doctorat-2017.pdf • Admission 2016: http://www.upt.ro/img/files/2015-2016/admission/doctorat/oferte/Oferte_conducatori_doctorat-2016_ses_II.pdf • Admission 2015: http://www.upt.ro/img/files/2014-2015/admission/PhD/Oferte_ale_cond_de_doctorat_IOSUD_UPT_s1.pdf <p>contact details of the doctoral supervisors can be found at:</p> <p>http://upt.ro/img/files/carte-telefon/Carte_de_telefon_Angajati_2020.pdf</p> <p>and</p> <p>http://www.upt.ro/img/files/2020-2021/doctorat/OMEN_conducator_doctorat_pe_domenii_2021.pdf</p>	<p><i>fulfilled</i></p>
	<p>g) the list of doctoral students from the evaluated doctoral field with the basic information (admission year; doctoral coordinator);</p>	<p>g) The list of doctoral students in the field can be found in the publicly available admission orders:</p> <ul style="list-style-type: none"> • for the year 2019-2020: http://www.upt.ro/img/files/2019-2020/doctorat/Lista_drd_inmatriculati_2019-2020_ordin_11474.pdf <p>and:</p> <p>http://www.upt.ro/img/files/2019-2020/doctorat/Lista_drd_inmatriculati_2019-2020_ordin_12410.pdf</p> <ul style="list-style-type: none"> • for the year 2018-2019: http://www.upt.ro/img/files/2018-2019/doctorat/Lista_dr_inmatr_2018-2019_sesiune_sept_ordin_120.pdf 	<p><i>fulfilled</i></p>

		<ul style="list-style-type: none"> • for the year 2017-2018: http://upt.ro/img/files/2017-2018/doctorat/Lista_dr_inmatr_2017-2018_sesiune_sept_ordin_12866.pdf <p>and:</p> <ul style="list-style-type: none"> • http://upt.ro/img/files/2017-2018/doctorat/Lista_dr_inmatr_2017-2018_sesiune_oct_ordin_13940.pdf • for the year 2016-2017: http://www.upt.ro/img/files/2016-2017/doctorat/docdrd/Doctoranzi_inmatriculati_2016-2017_Ordin_rector.pdf • for the year 2015-2016: http://www.upt.ro/img/files/2015-2016/doctorat/Candidati_inmatriculati_2015-2016.pdf 	
	<p>h) information about the standards for editing the doctoral thesis;</p>	<p>h) The doctoral theses elaborated in IOSUD-UPT are published at the Politehnica Publishing House as the book, detailed at the following address:</p> <p>http://www.upt.ro/img/files/2014-2015/doctorat/editare_teza/Instructiuni_pentru_redactarea_tezelor_de_doctorat_Ed_Politehnica.pdf</p> <p>Moreover, the templates for the thesis preparation are available considering:</p> <ul style="list-style-type: none"> • Initial part (Romanian, English) • Thesis chapter • Details on editing the equations <p>that can be found at:</p> <p>http://www.upt.ro/Informatii_documentele-doctoranzilor-inmatriculati-incepand-cu-anul-201_286_en.html.</p> <p>In addition, the Politehnica University Timișoara ensures, from its own revenues, the publication of 25 copies of each doctoral thesis, in</p>	<p><i>fulfilled</i></p>

		<p>addition to the two copies that are sent to the Central Library of UPT, respectively to the National Library of Romania.</p>	
	<p>i) links to the abstracts of the doctoral theses to be defended publicly, as well as the date, time and place where they will be defended, published at least 20 days before the defense.</p>	<p>i) According to the procedure for public defense of doctoral theses in IOSUD-UPT, on the UPT website, doctoral studies section, announcements on public defense are posted, in Romanian and English (for each doctoral thesis), for example:</p> <ul style="list-style-type: none"> • http://www.upt.ro/Informatii_anunturi---sustineri-publice-ale-tezelor-de-doctorat-in-iosu_293_ro.html • http://www.upt.ro/Informatii_anunturi---sustineri-publice-ale-tezelor-de-doctorat-in-iosu_293_en.html • The theses defended in 2020, with the details regarding the date, time, place where they were defended, the summary of the thesis, the public defense commission can be found at: http://www.upt.ro/Informatii_teze-de-doctorat-sustinute-in-2020_1421_ro.html • The theses defended in 2019, with the details regarding the date, time, place where they were defended, the summary of the thesis, the public defense commission can be found at: http://www.upt.ro/Informatii_teze-de-doctorat-sustinute-in-2019_1164_ro.html • The theses defended in 2018, with the details regarding the date, time, place where they were defended, the thesis summary, the public defense commission can be found at: 	<p><i>fulfilled</i></p>

		<p>http://www.upt.ro/Informatii_teze-de-doctorat-sustinute-in-2018_939_ro.html</p> <ul style="list-style-type: none"> • The theses defended in 2017, with details on the date, time, place where they were defended, the thesis summary, the public defense commission can be found at: http://www.upt.ro/Informatii_teze-de-doctorat-sustinute-in-2017_834_ro.html • The theses defended in 2016, with details on date, time, the place where they were defended, the summary of the thesis, the public defense commission can be found at: http://www.upt.ro/Informatii_teze-de-doctorat-sustinute-in-2016-771_ro.html and http://www.upt.ro/img/files/2015-2016/doctorat/teze/Teze_de_doctorat_sustinute_in_2016.pdf 	
<p>C.2.2. IOSUD / Doctoral School provides doctoral students the access to the resources needed to perform doctoral studies.</p>	<p>C.2.2.1. All doctoral students have free access to a platform with academic databases relevant for the analyzed doctoral field.</p>	<p>C.2.2.1. All PhD students have free access, from any computer with IP on the UPT campus, to the electronic resources and databases of the UPT Central Library.</p> <ul style="list-style-type: none"> • The Library databases can be accessed at: https://library.upt.ro/baze-de-date/ or • Directly from the PRIMO search system module, by selecting Primo, Central Index and Subscribed Databases  <p>The library's subscribed databases are:</p>	<p><i>fulfilled</i></p>

		<p>Baze de date</p>  <p>Platforma de cercetare ScienceDirect ofera acces si lael integral la reviste stiintifice de cercetare in format online, carti academice, serii de carti si enciclopedii online. Peste 26% din informatia aparuta la nivel mondial in domeniile stiintei exacte si stiinta sanatatii, tehnologie si medicina este publicata pe platforma Elsevier Science Direct. Este incontestabil, cea mai importanta resursa informatica stiintifica a planului nostru si cuprinde revistele publicate de grupul editorial Elsevier gruparea editoare Elsevier, Churchill Livingstone, Saunders, Mosby, Cell Press, Pergamon, Butterworth-Heinemann, Academic Press, The Lancet, JAI Press, North Holland, Masson).</p> <p>Platforma SpringerLink ofera acces cu text integral la reviste stiintifice de cercetare in format online, fara alt suport magnetic sau pe hartie. Este una din cele mai utilizate resurse electronice de documentare stiintifica din lume si de la noi din tara. Infiintata in anul 1999, platforma SpringerLink a continuat sa evolueze in functie de nevoile cercatorilor si in prezent contine peste 2.800 de titluri de reviste (rata de 1.661 in 2008), peste 169.500 de carti online, peste 4.400 serii de carti si 327 de lucrari de referinta online, peste 34.000 de protocoale. Colectiile sale continand reviste de la cele mai mari editoare stiintifice din lume.</p> <p>Web of Knowledge este una dintre cele mai importante surse de documentare stiintifica la nivel mondial. Scopul acestui baze de date este de a oferi informatii despre recunoasterea stiintifica a articolelor stiintifice si de stiinta care a noilor tendinte si tehnologii la nivel mondial. Web of Knowledge este autorizata, recunoscuta pentru evaluarea ISI a jurnalelor stiintifice, creat in colaborare cu prestigiosul Institute for Scientific Information din Philadelphia, SUA.</p> <p>IEEE Xplore Digital Library</p> <p>IEEE/ET Electronic Library (IEL) ofera acces la mai mult de o treime din literatura din domeniul ingineriei si a stiintei calculatoarelor din intreaga lume, punand la dispozitie materiale de foarte buna calitate de la Institute of Electrical and Electronics Engineers (IEEE) si Institution of Engineering and Technology (IET). Este o baza de date ideata pentru universitati, corporatii si agenti guvernamentale.</p> <p>Un abonament la IEEE/ET Electronic Library ofera acces la textul integral pentru toate revistele, ziarele, lucrurile si rapoartele de la diferite conferinte editate de IEEE - reviste si lucrari de la diverse conferinte editate</p> <p>Scopus este o baza de date bibliografica si bibliometrica in format online, cuprinzand reviste stiintifice, lucrari prin intermediul Internetului. Ofera acces la rezumatul articolelor stiintifice din peste 18000 de reviste stiintifice internationale publicate la peste 3000 de edituri internationale. Utilizarea ca instrument de evaluare include Hirsch care permite evaluarea autorilor si institutiilor academice si baza raportului dintre articole publicate si numarul de citari primite.</p> <p>Baza de date "Legis Plus" contine peste 35.000 de acte normative (legi, decretate, hotărâri, ordonante, ordine, circuli, norme, practici, amec, acte republicate) din anul 1879 si până în prezent, (se actualizează ocazi cu aparitia Monitorului Oficial).</p>	
	<p>C.2.2.2. Each doctoral student has access, upon request, to an electronic system for verifying the degree of similarity with other existing scientific or artistic creations.</p>	<p>C.2.2.2. IOSUD-UPT has purchased the computer program <i>iThenticate</i> (http://www.ithenticate.com/) used to analyze the degree of similarity of the content of doctoral theses with other documents.</p> <p>In the final phase of the doctoral thesis, the Doctoral School, through the person specifically designated for similarity analysis, generates a similarity report with the <i>iThenticate</i> computer program. The similarity report is sent to the doctoral coordinator of the thesis.</p> <p>Such similarity reports can be generated, at the request of the doctoral student or doctoral coordinator, in different phases of elaboration of the doctoral thesis, or of the scientific papers associated with the doctoral research program.</p> <p>For the specific doctoral thesis, the doctoral coordinator elaborates a similarity report, associated by the report generated by the <i>iThenticate</i> as an annex.</p>	<p><i>fulfilled</i></p>

		Annex C.2.2.2. , presents examples of using the computer program for doctoral students in the field of Electronic Engineering, Telecommunications and Information Technologies .	
	C.2.2.3. All doctoral students have access to scientific research laboratories or other facilities, depending on the particularities of the field / fields within the doctoral school, according to internal regulations.	C.2.2.3. The doctoral studies contract, settled between IOSUD-UPT and each enrolled doctoral student, explicitly stipulates the obligations assumed by IOSUD-UPT regarding the access of doctoral students to the research infrastructure / facilities, as follows: <ul style="list-style-type: none"> • Art.6.B.3 - to ensure the access of the doctoral student to the education and research infrastructure within the doctoral studies (Annex C.2.2.3. - Doctoral studies contract). • Depending on the specifics of the research laboratory, the doctoral student is trained in order to strictly follow the rules of labor protection and fire prevention and extinguishing. 	<i>fulfilled</i>
C.3. Degree of internationalization			
Standards	Performance indicators	Findings	Degree of fulfillment of the requirement <i>fulfilled / partially fulfilled / not fulfilled</i>

<p>C.3.1. There is a strategy and it is applied to increase the internationalization of doctoral studies.</p>	<p>*C.3.1.1. IOSUD, for the evaluated doctoral field, has mobility agreements with foreign universities, with research institutes, with companies that carry out activities in the doctoral field, related to the mobility of doctoral students and teachers (for example, ERASMUS agreements for the Doctoral studies cycle). At least 35% of doctoral students have completed a training course abroad or another form of mobility, such as participating in international scientific conferences. IOSUD develops and implements policies and action plans aimed at increasing the number of doctoral students participating in training courses abroad, up to at least 20%, which is the target at the level of the European Higher Education Area.</p>	<p>*C.3.1.1.</p> <ul style="list-style-type: none"> ● In Annex C.3.1.1-1, the ERASMUS mobility agreements between UPT and foreign universities are presented. ● The ERASMUS mobility agreements between UPT and foreign universities can be found publicly at: http://www.upt.ro/international/Mobilitati-Si-Cooperari-Internationale_Acorduri-bilaterale-Erasmus+_8_en.html ● The framework agreements between UPT and national or foreign universities can be found publicly at: http://www.upt.ro/international/Mobilitati-Si-Cooperari-Internationale_Acorduri-cadru-de-cooperare-cu-universitati-din-tara-si-strainatate_31_ro.html ● Cooperation agreements with enterprises, associations and research centers can be found publicly at: http://www.upt.ro/international/Mobilitati-Si-Cooperari-Internationale_Acorduri-de-cooperare-cu-intreprinderi,-asociatii-si-centre-de-cercetare_65_ro.html <p>IOSUD-UPT has the constant concerns for increasing the degree of internationalization of students, implemented through the Strategic Plan for the internationalization of the higher education (2015-2020 and 2021-2028 respectively):</p>	<p><i>fulfilled</i></p>
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[http://www.upt.ro/img/file/Proceduri/Strategy% 20for% 20Inter
nationalisation UPT 2021 2028.pdf](http://www.upt.ro/img/file/Proceduri/Strategy%20for%20Internationalisation%20UPT%202021%202028.pdf)

[http://www.upt.ro/img/file/Proceduri/Strategy_for_internationalisa
tion_UPT_2015_2020.pdf](http://www.upt.ro/img/file/Proceduri/Strategy_for_internationalisation_UPT_2015_2020.pdf)

The list of the doctoral students who have completed mobility internships for the field of **Electronic Engineering, Telecommunications and Information Technologies** is presented in [Annex C.3.1.1.](#)

Doctoral field	Number of PhD students, existing at the time of evaluation from those enrolled between 2015-2019	Doctors number between 2016-2020	Number of PhD students who performed mobilities			Ratio (%) students who performed mobility / existing students and Doctors number
			ISI	Other mobilities	Erasmus	
Electronic Engineering, Telecommunications and Information Technologies	30	7	17	6	1	64.86

CRITERION FULFILLED $\geq 35\%$

	<p>C.3.1.2. Within the evaluated field of doctoral studies, it is supported, including financially, the organization of doctorates in international co-supervision, respectively the invitation of the high-ranking experts to give courses / lectures for doctoral students.</p>	<p>C.3.1.2.</p> <ul style="list-style-type: none"> • Between January 2016 and December 2020, no thesis was co-supervised with foreign experts in the field of Electronic Engineering, Telecommunications and Information Technologies. At the level of IOSUD UPT, 2 international co-supervised theses were defended during this period. Currently in IOSUD - UPT there are 3 doctoral students whose thesis are co-supervised with foreign experts. The data are presented in detail in Annex C.3.1.2-1. - The minutes of public defense of the doctoral theses co-supervised with foreign experts and the list of doctoral students from IOSUD-UPT whose theses are co-supervised with foreign experts. • Annex C.3.1.2-2. - presents the list of guests - senior experts who have given courses / lectures for doctoral students. • Annex C.3.1.2-3. - presents the list of the experts who gave courses / lectures for doctoral students as the outcome of mobility, through the program P1: Development of the national system of research - development Subprogram 1.1 - Human resources "Mobility projects for young researchers from diaspora". 	<i>fulfilled</i>
	<p>C.3.1.3. Internationalization of the doctoral studies is supported by other concrete measures (eg, participation in educational fairs to attract international graduate students, inclusion the foreign experts in advising commissions or commissions for public defense of doctoral thesis etc.).</p>	<p>C.3.1.3. The internationalization of activities is supported by: short-term mobility abroad for doctoral students, participation of doctoral students in summer schools, conferences and other events abroad (Annex C.3.1.1); inviting leading experts who have given courses and lectures for doctoral students in UPT (Annex C.3.1.2-2 and Annex C.3.1.2-3); informing the public and stakeholders regarding the doctoral field by posting on the <i>Study in Romania</i> platforms (Annex C.3.1.3-2); increasing the degree of international visibility of doctoral coordinators and implicitly of the Doctoral School through relevant publications in the field</p>	<i>fulfilled</i>

		<p>(Annex A.3.2.1-1.), members of the scientific committees of international publications and conferences, members of the boards of international professional associations; invited to conferences or groups of experts held abroad, members of commissions for the defense of doctoral theses at top foreign universities (Annex A.3.2.1-2.).</p> <p>For the internationalization of the activities within the doctoral school, IOSUD - UPT participated in various promotion missions, at educational fairs to attract international doctoral students, preparing collaboration agreements with prestigious universities. Details can be found at:</p> <p>http://www.upt.ro/Informatii-utile_apt-la-conferinta-si-expozitia-anuala-nafsa-2019_385_ro.html</p> <p>http://www.upt.ro/Informatii-utile_firmele-italiene-vor-o-relatie-mai-stransa-cu-upt_351_ro.html</p> <p>http://www.upt.ro/Informatii-utile_ambasadorul-mexicului-la-upt_324_ro.html</p> <p>http://www.upt.ro/Informatii-utile_un-nou-acord-semnat-de-upt_344_ro.html</p> <p>http://www.upt.ro/Informatii-utile_un-nou-acord-international-semnat-de-upt_276_ro.html</p> <p>http://www.upt.ro/Informatii-utile_apt-a-semnat-un-acord-de-colaborare-cu-universitatea-din-ovi_229_ro.html</p>	
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		<p>http://www.upt.ro/Informatii-utile_reprezentantii-upt-la-aniversarea-tu-munchen_227_ro.html</p> <p>http://www.upt.ro/Informatii-utile_acord-de-colaborare-intre-upt-si-tu-graz_203_ro.html</p> <p>http://www.upt.ro/Informatii-utile_parteneriat-upt---universitatea-khazar-azerbaidjan_121_ro.html</p> <p>Details regarding doctoral theses defended in IOSUD - UPT in the period 2016-2020, having as references foreign experts, are presented in Annex C.3.1.3.</p> <p>In the field of Electronic Engineering, Telecommunications and Information Technologies in the period 2016-2020, 4 doctoral theses were defended with foreign expert as the member of the commission for public defense. Details are presented in Annex C.3.1.3-1.</p>	
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* The indicators signaled by an asterisk have a special status exclusively with reference to the process of periodic evaluation of doctoral schools under the conditions of Law no. 100/2018. If the indicator is not fulfilled, a period of three years shall be granted to correct those deficiencies

¹ 3 years for doctoral study programs with the duration specified in art. 159 para. (3), respectively 4 years for the doctoral study programs with the duration specified in art. 174 paragraph (3) of the National Education Law no. 1/2011, with subsequent amendments and completions, to which are added the extension periods granted according to art. 39 para. (3) of the Code of doctoral studies, approved by Government Decision no. 681/2011, with subsequent amendments and completions.

² 3 years for doctoral study programs with the duration specified in art. 159 para. (3), respectively 4 years for the doctoral university study programs with the duration specified in art. 174 paragraph (3) of the National Education Law no. 1/2011, with subsequent amendments and completions.

³ Or through what the graduate must know, understand and be able to do, in accordance with the provisions of the Methodology for enrolling and registering higher education qualifications in the National Register of Higher Education Qualifications (RNCIS), approved by Order of the Minister of National Education 3475/2017, with subsequent amendments and completions.

Part III

3. STRATEGIES AND PROCEDURES IMPLEMENTED IN THE FIELD OF DOCTORAL STUDIES, AS A CONTINUOUS QUALITY IMPROVEMENT OF THE DOCTORAL PROGRAM, OTHER THAN THOSE MENTIONED IN ANNEX 4 TO GUIDE

Because IOSUD-UPT option of setting up a single doctoral school to manage all fields of doctoral studies, a unitary approach to the development of doctoral programs was possible, as a measure of continuous improvement of the quality of doctoral programs, with beneficial impact on certain quality standards for all doctoral fields accredited in IOSUD-UPT.

Consequently, assuming a minimum performance criterion for the public defense of doctoral theses, according to Art. 83 of RIODSUD-UPT, for the publication (or proof of acceptance for publication) of at least 2 scientific papers indexed Web of Science (ISI network) where the doctoral student has an explicit affiliation to the Politehnica University Timișoara, representing a first measure to improve the quality of doctoral studies in IOSUD - UPT.

The measure has been adopted in IOSUD-UPT since 2011, and since 2018, when at the national level the minimum standards for granting the doctoral degree were stipulated in OMEN 5110/2018, it remained valid in the situation where the conditions imposed by OMEN 5110/2018 are below the minimum UPT standard. The regulations can be found in the doctoral studies contract, signed by the doctoral student:

“The public defense of the doctoral thesis is conditioned by the fulfillment of the minimum national standards for granting the doctoral degree, corresponding to the doctoral field of the thesis (according to the Order of the Minister of Education no. 5110/2018), but not less than the minimum performance criterion of IOSUD UPT (according to Art. 83 of the Institutional Regulation for the organization and development of doctoral university study programs in UPT, no. 18874 / 16.12.2011). The minimum performance criterion of IOSUD UPT is the publication or acceptance for publication, under UPT affiliation of the doctoral student, of 2 (two) papers in scientific journals or procedures of scientific events indexed Web of Science, considering that at least one of the papers has the doctoral student as the first author.”

The publication of the results of the doctoral research project, before the public defense of the doctoral thesis, confers not only international visibility (through *Web of Science*) but also an external, independent validation of their originality and scientific quality, as a measure that continuously improve the quality the programs of the doctoral studies.

As a result of this option assumed by IOSUD-UPT, all doctoral theses elaborated in IOSUD-UPT, were validated by the specialized commissions of CNATDCU (National Council for Attestation of University Degrees, Diplomas and Certificates), with the confirmation of the doctoral degree.

With the efforts that improves the academic and professional training of doctoral students and stimulates research, including by finalizing and publishing doctoral theses, by Decision no. 32 / 07.11.2012, the Board of Directors of the Politehnica University Timișoara (UPT) has launched

the project *Increasing the quality of advanced scientific research in UPT*, in order to improve the visibility and the degree of implementation of the scientific research results, establishing research support grants from own revenues of the university. Following the analysis performed in 2015 on the efficiency of the research grant award program, the Board of Directors of UPT adopted the Decision of the Board of Directors (HCA) no. 28 / 18.05.2015 and decided to continue the respective financing program.

Considering the analysis of the program results, undertaken until 2020 and identifying a series of changes necessary to increase the scientific production and its quality, the Board of Directors decided to continue the funding program through HCA no. 14 / 02.02.2021. The conditions and procedure for carrying out these programs and granting funding are specified at: http://www.upt.ro/international/Mobilitati-Si-Cooperari-Internationale_Programul-de-finantare-ISI_27_ro.html. All working procedures related to these programs are described in the following documents:

- Procedure for obtaining a support grant for the participation in indexed scientific events Web of Science / Clarivate Analytics (ISI) of university assistants and doctoral students.
- Procedure for obtaining support grant for the publication of papers in journals indexed in Web of Science / Clarivate Analytics (ISI) with impact factor.
- Application for support grant type 1 - support grant in order to participate at the scientific events indexed in Web of Science / Clarivate Analytics (ISI).
- Application for cancellation grant type 1 - support grant in order to participate at the scientific events indexed in Web of Science / Clarivate Analytics (ISI).
- Application for support grant type 2 - in order to publish a paper in ISI-indexed journals with impact factor, support grant type 3 - for research and grant support type 4 – for additional funding.
- Application for the reimbursement of the part of the support grant in the UPT virtual account.
- Application for cancellation of approval / confirmation of support grant type 2 - in order to publish a paper in the ISI-indexed journals with impact factor, support grant type 3 - for research and support grant type 4 – for additional funding.

Through these HCAs, the constantly increasing financial support has been granted to doctoral students. In HCA no. 14 / 02.02.2021 it is specified that the total value of the support grants approved for a first author doctoral student is a maximum of 2400 EUR for the entire period of the doctoral studies. The support grant is up to EUR 500 for costs of publication in journals indexed in Web of Science (WOS) / Clarivate Analytics (ISI) with an impact factor (FI), $FI > 0.2$ and ranked, at the time of application, in Q3 or Q4, within the WOS / Clarivate Analytics ranking of the journals by specific field. The support grant is up to EUR 1200 that covers the publication costs in journals indexed in the Web of Science / Clarivate Analytics (ISI) with impact factor (FI) and ranked, at the date of application, in Q2 of the WOS / Clarivate Analytics ranking of the journals by specific field. Support grant of up to EUR 1800 for costs of publication in journals indexed in the WOS / Clarivate Analytics (ISI) with FI and ranked, at the date of application, in Q1 of the WOS / Clarivate Analytics ranking of the journals by specific field.

UPT offers, in terms of HCA no. 14 / 02.02.2021, the facility for the doctoral students in the case that the first paper published by a doctoral student, as the first author with a single affiliation to UPT, is in a scientific journal ranked Q1 or Q2, to receive an additional grant of 1800 EUR for journals Q1 or 1200 EUR for Q2 journals, cumulative with the author's other grants provided by the HCA. The grant is awarded only once to the doctoral student, either Q1 or Q2, the option being specifically mentioned in his award application. Once the grant for a Q1 or Q2 category has been approved, the applicant's option cannot be changed.

Considering the ISI papers published by doctoral students, after completing the regular term of the doctoral studies, doctoral students can obtain, for a period of one semester of extension, the scholarship from the UPT own income. These doctoral grants, related to the public defense of doctoral theses, are approved by HCA at the end of each academic year, following the requests submitted by the doctoral coordinators and approved by the Director of the Doctoral School. The data are public, at the following address: http://www.upt.ro/Informatii_documentele-doctoranzilor-inmatriculati-in-perioada-2005-201_289_en.html.

Moreover, in order to improve the academic and professional training of doctoral students and to stimulate research activities, an internal project was launched in UPT, to promote their own doctoral research at prestigious international conferences organized in / by UPT, http://www.upt.ro/img/file/Formulare%20si%20regulamente/ISI/Proiect_ConferintaUPT.pdf. This project has been undertaken in the period 2018-2019 and facilitated the participation of doctoral students at unindexed or late indexed conferences in Web of Science / Clarivate Analytics (ISI), to present results, receive useful feedback from participants, to interact and create contacts with other doctoral students and internationally recognized experts.

Within the POCU project "*Training of entrepreneurial skills for doctoral and postdoctoral students in engineering - ANTREPRING*", with the previous name "*Support for Doctoral and Postdoctoral Programs for the development of Entrepreneurial skills - SUPRANTREP*", http://www.upt.ro/Informatii_spartzen-for-doctoral-students-and-post-doctoral-researchers_998_en.html, financial support was provided to doctoral students based on projects. These individual projects were carried out in the period 2016-2018 and aimed to increase the number of university tertiary education graduates who find a job as a result of access to learning activities at a potential job / research / innovation, with a focus on the competitive economic sectors, identified in accordance with the National Strategy for Competitiveness (SNC) and the areas of smart specialization according to the National Strategy for Research, Development and Innovation (SNCDI). Consequently, the following results were obtained: the high participation rate of doctoral students in the internships within the newly established / developed partnerships in order to facilitate the insertion on the labor market after obtaining the doctoral diplomas; newly established / developed partnerships between UPT and the private sector and leading actors in the field of research and innovation.

In its efforts to continuously improve the quality of doctoral programs, UPT acquired in 2020 a volume license for MATLAB - Matlab Campus-Wide License. This is a development environment produced by MathWorks, used for algorithm design, statistical analysis, numerical calculation, interface creation. The software package contains over 100 additional components including the Simulink graphics environment, which allows modeling, simulation and testing of complex systems. The purchased license provides access to the latest software versions and covers

an unlimited number of users and workstations. Thus, MathWorks products can be used by UPT staff and doctoral students in teaching and research and can be installed on both UPT and personal computing equipment.

The access to the installation kit is made through the portal <https://nl.mathworks.com/academia/tah-portal/universitatea-politehnica-timisoara-31539130.html>, following the creation of an account associated with the institutional e-mail address. Doctoral students have access to the following useful resources that they can use in their doctoral research activities:

- Matlab Documentation - provides a series of video tutorials and examples of use.
- Matlab Online - allows the use of Matlab and Simulink directly from the web client, without the need to install on the workstation.
- Matlab Grader utility - allows the creation of interactive course problems and automatic code evaluation.
- Discussion forum - is addressed to the Matlab user community.

Another measure aimed at continuous improvement of the quality of doctoral study programs was the adoption of the decision to provide financial support to newly admitted doctoral students, but who did not obtain a scholarship financed by MEN. Starting with the 2018/2019 academic year, UPT initiated the proper scholarship program for the doctoral students, financed from UPT's own resources, in the amount of 800 lei / month. They are granted, for each field of doctoral studies, in the order of the average grades obtained at the admission colloquium, according to the procedure established by CSUD.

If there is a doctoral student admitted to the position financed by the MEN without a scholarship, whose average grade is identical to the average grade of the last doctoral student who obtained a budgeted MEN position, the UPT's own income scholarship has the value of 1500 lei / month.

UPT's own income scholarships are awarded for the entire period of the doctoral studies.

The situation regarding the UPT's own income scholarships, granted for each academic year, is included in the enrollment order of the doctoral students. The data are publicly available at the following addresses:

http://upt.ro/img/files/2020-2021/doctorat/Ordinul_10932_din_2020_privind_inmatricularea_doctoranzilor.pdf
http://www.upt.ro/img/files/2019-2020/doctorat/Lista_drd_inmatriculati_2019-2020_.pdf
http://www.upt.ro/img/files/2018-2019/doctorat/Lista_dr_inmatr_2018-2019_sesiune_sept_ordin_12088.pdf

4. OTHER INFORMATION

Regarding the critical performance indicators (CPI), in the doctoral field of **Electronic Engineering, Telecommunications and Information Technologies** the situation is as follows:

A.2.1.1. The indicator is fulfilled.

The research infrastructure is publicly available on the platform: <https://eeris.eu/ERIO-2000-000R-0036>. The research infrastructure is presented in detail in [Annex A.2.1.1.](#)

A.3.1.1. The indicator is fulfilled.

Within the field of **Electronic Engineering, Telecommunications and Information Technologies**, there are 15 IOSUD-UPT affiliated doctoral coordinators. 13 of them fulfilled the minimum CNATDCU criteria imposed by OMEN 6129/2016.

$(13/15)*100 = 86,6\% \rightarrow$ CRITERION FULFILLED $\geq 50\%$

The situation is presented in detail in [Annex A.3.1.1.](#)

A.3.2.1. The indicator is fulfilled.

From the 15 doctoral coordinators from the field of **Electronic Engineering, Telecommunications and Information Technologies**, 13 of them fulfilled this criterion.

$(13/15)*100 = 86,6\% \rightarrow$ CRITERION FULFILLED $\geq 50\%$

The situation is presented in detail in [Annex A.3.2.1-1.](#) and [Annex A.3.2.1-2.](#)

B.2.1.5. The indicator is fulfilled.

No. doctoral students (Drd): 32

No. memers in advising commissions (CD): 25

Ratio Drd / CD: 0.71 \rightarrow CRITERION FULFILLED $\leq 3: 1$

The situation is presented in detail in [Annex B.2.1.5.](#)

B.3.1.1. The indicator is fulfilled.

Number of doctoral students who obtained their doctoral degree in the period 2016-2020: 7.

The list of relevant papers prepared by doctoral students who obtained their doctoral degree in the period 2016-2020 can be found in [Annex B.3.1.1.](#)

C.2.1.1. The indicator is fulfilled.

IOSUD has published on the institutional website all the requested information that are in accordance with the regulations in force regarding the data protection.

ANNEX CONTENTS - Electronic Engineering, Telecommunications and Information Technologies

		<i>Number of pages</i>
1	Annex_A.1.1.1.a. Annex 10 UPT Charter doctoral RIODSUD	27
2	Annex_A.1.1.1.b-1. HS 13 / 10.05.2012 Regulations for the 2012-2016 legislature elections	14
3	Annex_A.1.1.1.b-2. Conduct of elections at the level of CSUD / CSD legislature 2012-2016	1
4	Annex_A.1.1.1.b-3. Decision of CSUD members - 2012	1
5	Annex_A.1.1.1.b-4. Evidence CSUD director competition for the 2012-2016 legislature	1
6	Annex_A.1.1.1.b-5. Decision to appoint the director of CSUD 2012-2016	1
7	Annex_A.1.1.1.b-6. Decision to appoint the director of CSD 2012-2017	2
8	Annex_A.1.1.1.b-7. HS 207 / 26.11.2015 Regulations for the 2016-2020 legislature elections	21
9	Annex_A.1.1.1.b-8. Conduct of elections at the level of CSUD / CSD legislature 2016-2020	1
10	Annex_A.1.1.1.b-9. CSUD / CSD electoral commission report for the legislature 2016-2020	2
11	Annex_A.1.1.1.b-10. Decision to appoint the director of CSUD 2016-2020	1
12	Annex_A.1.1.1.b-11. Decision to appoint the director of CSD 2017-2022	1
13	Annex_A.1.1.1.b-12. HS 226 / 31.10.2019 Regulations for the 2020-2024 legislature elections	44
14	Annex_A.1.1.1.b-13.Evidence CSUD director competition 2020	1
15	Annex_A.1.1.1.b-14. Decision to appoint the director of CSUD 2020-2024	1
16	Annex_A.1.1.1.b-15. PV CSD drd	1
17	Annex_A.1.1.1.b-16. PV CSUD drd	1
18	Annex_A.1.1.1.b-17. HS 38 / 21.01.2021 Extension of the mandate of CSUD / CSD members	1
19	Annex_A.1.1.1.c-1. Doctoral admission procedure 2019	13
20	Annex_A.1.1.1.c-2. Doctoral admission procedure 2018	13
21	Annex_A.1.1.1.c-3. Doctoral admission procedure 2017	13
22	Annex_A.1.1.1.c-4. Doctoral admission procedure 2016	12
23	Annex_A.1.1.1.c-5. Doctoral admission procedure 2015	12
24	Annex_A.1.1.1.d-6. The thesis defense procedure starting with 04-2016	6
25	Annex_A.1.1.1.c-7. HCA 5 / 2019 Work instruction for defending doctoral theses	16
26	Annex_A.1.1.1.c-8. HS 111 / 14.05.2020 The procedure for defending doctoral theses online	4
27	Annex_A.1.1.1.c-9. HS 231 / 17.09.2020 Extension of the validity of the procedure for defending online	1
28	Annex_A.1.1.1.d. Example of PhD diploma recognition	2
29	Annex_A.1.1.1.d-1. Procedure of PhD diploma recognition	6
30	Annex_A.1.1.1.d-2. HCA 89 / 26.11.2019 Doctoral supervisor recognition procedure	7
31	Annex_A.1.1.1.e-1. IOSUD-UPT management structure	2
32	Annex_A.1.1.1.e-2. CSUD-CSD management structure	2
33	Annex_A.1.1.1.f-1. Doctoral Studies Contract 2019	25
34	Annex_A.1.1.1.f-2. Doctoral Studies Contract 2018	20
35	Annex_A.1.1.1.f-3. Doctoral Studies Contract 2017	15
36	Annex_A.1.1.1.f-4. Doctoral Studies Contract 2016	15
37	Annex_A.1.1.1.f-5. Doctoral Studies Contract 2015	15
38	Annex_A.1.1.1.g-1. Internal procedure analysis and approval of thematic advanced university training program	4
39	Annex_A.1.1.1.g-2. CSD decision approving advanced university training program plans	1
40	Annex_A.1.2.1-1. PHD 2020 Admission ENROLL Instructions	6
41	Annex_A.1.2.1-2. Inquiry ACCESS doctor lists 2016-2020	1
42	Annex_A.1.2.2-1. List of doctors with anti-plagiarism program by field	2
43	Annex_A.1.2.2-2. Similarity report	19
44	Annex_A.1.3.1. Contracts 2020-2016 - Research grants institutional development human resources	5
45	Annex_A.1.3.2. Additional funding for doctoral students	3
46	Annex_A.1.3.2-1. UPT income admission scholarships granted 2019 and 2018	12
47	Annex_A.1.3.2-2. Scholarships granted extensions 2020	13
48	Annex_A.1.3.2-3. Doctoral Projects Team 2016-2020	21
49	Annex_A.1.3.3. Ratio on training expenses / government revenue	13
50	Annex_A.2.1.1. Research infrastructure	10
51	Annex_A.3.1.1. CNATDCU standard opera omnia	14
52	Annex_A.3.1.2. PhD supervisors with an employment contract for an indefinite period	1
53	Annex_A.3.1.3. Tenured professors of advanced university training program	5
54	Annex_A.3.1.4. PhD supervisors and number of doctoral students	1
55	Annex_A.3.2.1-1. Publications	10
56	Annex_A.3.2.1-2. Visibility	9
57	Annex_A.3.2.2. Self-assessment 25% of CNATDCU Minimum Standards	4

58	Annex_B.1.1.1-1. Registered doctorate with a master's degree from another university, 2015-2019	7
59	Annex_B.1.1.1-2. Admission budget places 2015-2019	15
60	Annex_B.1.1.1-3. Register for doctoral admission 2015-2019	16
61	Annex_B.1.2.1. Doctoral admission selection criteria 2019	1
62	Annex_B.1.2.2. Dropout rate	1
63	Annex_B.2.1.1-1. Advanced university training program	5
64	Annex_B.2.1.1-2. Advanced university training program results	3
65	Annex_B.2.1.2. EIACSDR discipline sheet	2
66	Annex_B.2.1.3. Qualification level 8 procedure according to the National Qualifications Framework (CNC) and the European Qualifications Framework (EQF)	2
67	Annex_B.2.1.3-1. EIACSDR discipline sheet 2016-2019	4
68	Annex_B.2.1.3-2. Course sheet - Template MASTER	4
69	Annex_B.2.1.4. Advising commission feedback	26
70	Annex_B.2.1.5. Advising commission and PhD students	2
71	Annex_B.3.1.1. Doctor lists and relevant contributions	3
72	Annex_B.3.1.2. Doctor lists - attendance at conferences	2
73	Annex_B.3.2.1. Doctoral theses and references	1
74	Annex_C.1.1.1-a. HS 135 / 17.04.2014	5
75	Annex_C.1.1.2-1. Draft PPUA questionnaire	2
76	Annex_C.1.1.2-2. Draft PCS questionnaire	2
77	Annex_C.1.1.2-3. Questionnaire PPUA / PCS	8
78	Annex_C.1.1.2-4. Action plan	1
79	Annex_C.2.2.2. Report of similarity	18
80	Annex_C.2.2.3. Doctoral Studies Contract 2019	25
81	Annex_C.3.1.1. PhD students who have completed mobility internships	6
82	Annex_C.3.1.1-1. ERASMUS EU Mobility Agreements	29
83	Annex_C.3.1.2-1. International UPT co-supervised theses	4
84	Annex_C.3.1.2-2. Guests who gave lectures for PhD students	6
85	Annex_C.3.1.2-3. List of lectures from mobility	11
86	Annex_C.3.1.3. International expert referees - totally UPT	6
87	Annex_C.3.1.3-1. International expert referees - Electronic Engineering, Telecommunications and Information Technologies	1
88	Annex_C.3.1.3-2. Informing the public	8
Total number of annex pages		701