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Oil and Gas University of Ploiești

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## INTERNAL EVALUATION REPORT

WITH A VIEW TO THE PERIODIC EVALUATION OF THE  
DOCTORAL FIELD OF SYSTEMS ENGINEERING WITHIN THE  
FRAMEWORK OF  
IOSUD - UPG from PLOIESTI

**The fundamental field**  
**ENGINEERING SCIENCES**

**Doctoral field:**  
**SYSTEMS ENGINEERING**

The data contained in this Report are complete, correct and in accordance with the principles of academic ethics.

Director of CSUD of IOSUD UPG Ploiesti,  
Prof. Univ.Habil.Dr.Eng. Răzvan George Rîpeanu

RECTOR,  
Assoc.Prof. Univ.Dr.Eng. Alin Diniță

PLOIESTI,  
March, 2026

University of Oil and Gas of Ploiesti

Internal evaluation report of the doctoral university studies field  
**SYSTEMS ENGINEERING**

Approved in the meeting of the Senate of the Oil and Gas University of Ploiești  
on 26.03.2026

**EDITORIAL TEAM:**

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**STRUCTURE OF THE INTERNAL EVALUATION REPORT**

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## LEGAL FRAMEWORK

The doctoral university studies field *Systems Engineering* within *IOSUD UPG in Ploiești* is based on the provisions of the following normative acts:

1. [Higher Education Law No. 199/2023](#)
2. [Order 3998/2024 Authorization methodology](#)
3. [Order 5229/2020 approving the methodology for granting the habilitation certificate and the scientific title of doctor](#)
4. [Order 4020/2020 derogation from legal provisions on higher education during the state of emergency in Romania](#)
5. [Order 6129/2016 minimum standards](#)
6. [Annex to order 6129/2016 minimum standards](#)
7. [GEO 96/2016 amending normative acts on education-research-health-professional training](#)
8. [Order 3121/2015 authorization process](#)
9. [Order 3693/2024 approving the Framework Methodology for organizing admission to higher education for short-term university study cycles](#)
10. [Order 3692/2024 list of nationally recognized programs, degree similarity determination, completion of studies](#)
11. [Order 3020/2024 approving the Framework Regulation for doctoral university studies](#)
12. [Order 5732/2022 approving the organization + operation methodology in dual education](#)
13. [Order 3102/2022 approving the Framework Methodology for admission to bachelor 's , master's & doctoral degrees](#)
14. [Order 5255/2021 regarding ethical verification and university deontology for the preparation of doctoral theses](#)
15. [Order 3651/2021 Methodology for evaluating doctoral university studies](#)
16. [Order 5229/2020 approving the methodology for granting the habilitation certificate and the scientific title of doctor](#)
17. [Order 5110/2018 national minimum standards for the doctoral degree](#)
18. [Order 3131/2018 including courses on ethics and academic integrity](#)
19. [Order 5376/2017 approving fields & specializations/university study programs correlated with economic sectors with growth potential](#)
20. [GD 681/ 2011 \(updated 2016\) Code of Doctoral Studies](#)

## I. General information

### *1.1. General description of the higher education institution and the institution organizing doctoral studies (IOSUD)*

The Petroleum and Gas University of Ploiești organizes doctoral studies within the framework of the Institution Organizing Doctoral University Studies (IOSUD-UPG Ploiești). The Petroleum and Gas University of Ploiești, a higher education institution with tradition, was established by Decree no. 175, published in [the Official Gazette of the Romanian People's Republic no. 177 of August 3, 1948](#), under the name of the Institute of Petroleum and Gas of Bucharest.

In 1973, according to [Decree no. 702 of December 28, 1973 \(Law no. 25/1974\)](#), published in the Official Bulletin of the Republic of Romania of December 30, 1973, the Institute of Petroleum, Gas and Geology of Bucharest merged with the Institute of Petroleum of Ploiești, under the name of the Institute of Petroleum and Gas, headquartered in the Municipality of Ploiești. Currently, the higher education institution operates under the name of the University of Petroleum and Gas of Ploiești, according to [the Decision of the Government of Romania no. 23 of January 4, 2001](#), published in the Official Gazette of Romania no. 18 of January 11, 2001.

Through the educational services offered and the research activity carried out, the Petrol-Gaze University of Ploiești, following the institutional evaluation, received official recognition of the level of quality it ensures by [obtaining the HIGH CONFIDENCE DEGREE rating](#) granted by the Romanian Agency for Quality Assurance in Higher Education (ARACIS) following the institutional

evaluation in 2008, a rating maintained in the evaluations in 2014 and 2019. The last evaluation by ARACIS was in 2025 , [the rating obtained being the maintenance of the HIGH CONFIDENCE DEGREE accreditation.](#)

The quality management of UPG in Ploiești is confirmed by the Certificate of Conformity of the Quality Management System with [SR EN ISO 9001](#) :2015 and EN ISO 9001:2015, granted by AEROQ (valid until **07.07.2028**

<https://www.upg-ploiesti.ro/wp-content/uploads/2025/09/Certificat-ISO-9001-2015.pdf>).

The Petrol-Gaze University of Ploiești assumes the mission of generating and transferring knowledge to society through initial and continuing training at university and postgraduate level, for the purpose of personal development, professional insertion of the individual and satisfying the need for competence of the socio-economic environment through scientific research, development, innovation and technological transfer, through individual and collective creation, in the fields of sciences, engineering sciences, economic sciences, arts, socio-human sciences, medical sciences, legal sciences, by ensuring physical and sports performance and development, as well as the valorization and dissemination of their results.

The strategic plan of the management team establishes the strategic objectives of the university for the period 2024-2029 [Plan-Strategic-2024-2029.pdf](#) in full accordance with the university's assumed mission.

## *1.2. General description of the organizational component that organizes the field of doctoral university studies*

Since its establishment (1948), the University has had the right to [conduct](#) doctoral studies . ( [University founding documents and the law on the organization of doctoral studies](#) )

Within IOSUD UPG in Ploiești there is only one multidisciplinary doctoral school with **4 accredited doctoral fields** . Following the external ARACIS evaluation from **September 20-24, 2021** and the decision of the **ARACIS council no. 97/25.11.2021** [Decision-of-the-ARACIS-Council-nr.-97-of-25.11.2021.pdf](#) , both IOSUD-UPG and **the doctoral field of Systems Engineering** obtained **the Maintenance of Accreditation** . IOSUD-UPG from Ploiești obtained **the Maintenance of Accreditation** following the external institutional evaluation of UPG from Ploiești from **05.03.2025-07.03.2025** [EI2736 UPG Raport-Consiliu\\_08.05.2025.pdf](#) . In addition, the quality management regarding doctoral studies is certified according to the Certificate of Conformity of the Quality Management System with [SR EN ISO 9001](#) : 2015 and EN ISO 9001:2015, granted by AEROQ (valid until **07.07.2028** <https://www.upg-ploiesti.ro/wp-content/uploads/2025/09/Certificat-ISO-9001-2015.pdf>).

In accordance with the provisions of the National Education Law no. 199/2023 and OM 3020/2024 regarding *the Framework Regulation on doctoral university studies* , provisions included in **the Regulation on the organization and conduct of doctoral university studies at UPG Ploiesti** [https://www.upg-ploiesti.ro/wp-content/uploads/2024/09/R-07\\_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf](https://www.upg-ploiesti.ro/wp-content/uploads/2024/09/R-07_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf) , the doctorate is of two types: scientific doctorate and professional doctorate. According to the specifics of its fundamental fields of training and the approvals it holds from the Ministry of Education and Research, the Petrol – Gaze University of Ploiesti is an Organizing Institution of Doctoral University Studies – IOSUD only for the type of scientific doctorate. In IOSUD-UPG of Ploiesti, doctoral university studies are organized in the form of full-time and part-time education.

In IOSUD - Petroleum and Gas University of Ploiesti, a multidisciplinary doctoral school operates with **27** doctoral supervisors in already accredited fields ( <https://doctorat.upg-ploiesti.ro/> ).

Currently (academic year 2025-2026) **4 doctoral fields are accredited in IOSUD UPG Ploiesti, namely :**

- **Doctoral field Mining, Oil and Gas** to which **9 are affiliated** doctoral supervisors and enrolled **56** doctoral students;

- **The Mechanical Engineering doctoral field**, to which **8** doctoral supervisors and **28** doctoral students are affiliated;
- **The doctoral field of Systems Engineering**, to which **6** doctoral supervisors are affiliated and **21** doctoral students are enrolled;
- **The doctoral field of Chemical Engineering**, to which **4** doctoral supervisors are affiliated and **19** doctoral students are enrolled.

Complete information is available on the IOSUD website: <https://doctorat.upg-ploiesti.ro/>. The old IOSUD website has been preserved and can be found at [the Doctoral School – Archive – Petrol-Gaze University of Ploiești](#). The doctoral fields of IOSUD Petrol-Gaze University of Ploiești together with the master's programs with connections are presented in the table below.

No. of crt.	Doctoral field	Master's degree programs in the field
1	Oil and Gas Mines	<ol style="list-style-type: none"> <li>Petroleum Geology</li> <li>Management in the Oil Industry</li> <li>Hydrocarbon Transportation, Storage and Distribution Technology</li> <li>Reservoir Engineering</li> <li>Oil Extraction</li> <li>Well Drilling</li> </ol>
2	Mechanical engineering	<ol style="list-style-type: none"> <li>Hydrocarbon transportation and storage systems engineering</li> <li>Risk management and reliability engineering of petroleum and petrochemical equipment</li> <li>Optimal exploitation engineering of petroleum equipment</li> <li>Risk management and reliability engineering of petroleum and petrochemical equipment (EN)</li> <li>Petroleum and Petrochemical Equipment Production Engineering and Management</li> </ol>
3	Systems engineering	<ol style="list-style-type: none"> <li>Advanced automations</li> </ol>
4	Chemical Engineering	<ol style="list-style-type: none"> <li>Advanced Technologies in Petroleum Processing Specialization</li> <li>Computer-Aided Chemical Engineering Specialization for Refineries and Petrochemicals</li> </ol>

During the **78** years since doctoral university study programs have been in operation, **892** scientific doctorate degrees have been awarded and confirmed, their distribution by faculties (in the existing structure in 2026) being presented as follows:

- Oil and Gas Engineering- **382**;
- Mechanical and Electrical Engineering- **285**;
- Petroleum Technology and Petrochemistry **225**.

The hierarchy within IOSUD, as well as the subordination and collaboration relationships are found in **the UPG Ploiesti Organization Chart** ( [Organization Chart – Petrol-Gaze University Ploiesti](#) ) In accordance with the provisions of law 199/2023 and the Framework Regulation on doctoral studies, from 08.01.2024 part of OM 3020/2024 and its own Regulation, the Council for Doctoral University Studies (CSUD-UPG Ploiesti) ensures the operational management of the institution organizing doctoral university studies. The CSUD composition of IOSUD-UPG is made up of 1 director and 8 members. The CSUD composition is visible in the table below, and its attributions are available at: at <https://doctorat.upg-ploiesti.ro/iosud/csud> .

First and last name	Position
Prof. Univ. Habil. Dr. Eng. Răzvan George RIPEANU	<b>Director – CSUD, coordinator of the Mechanical Engineering field</b>
Prof. Univ. Habil. Dr. Timur-Vasile CHIȘ	Member –Coordinator of Mining, Oil and Gas– Director of the Doctoral School
Prof. Univ.Dr. Eng. Nicolae PARASCHIV	Member- Coordinator of the Systems Engineering field
Prof. Univ.Habil. Dr. Eng. Dragoș CIUPARU	Member-Chemical Engineering Field
Prof. Univ.Habil.Dr. Eng. Marius Gabriel PETRESCU	Member-Mechanical Engineering Field
PhD in Eng. Andrei Cosmin SÎRBU	PhD student member
PhD in Eng. Andreea Cristina ALEXANDRESCU	Member – PhD student

<b>Dr. Eng. Cristian CĂLIN</b>	Economic environment member
<b>Eng. Robert Stelian CHIRCĂ</b>	Economic environment member

The operational management of the Doctoral School is ensured by the Doctoral School Council (CSD) and its Director. The composition of the CSD is visible in the table below, and its attributions are available at: <https://doctorat.upg-ploiesti.ro/iosud/csd> .

First and last name	Position
<b>Prof. Univ.Habil. Dr. Eng. Timur Vasile CHIȘ</b>	<b>Director – Doctoral School – Mining, Oil and Gas Field Coordinator</b>
<b>Prof. Univ. Habil. Dr. Eng. Marius Gabriel PETRESCU</b>	Member –Mechanical Engineering Field,
<b>Prof. Univ. Habil. Dr. Eng. Radulescu Gabriel</b>	Member - Systems Engineering Field
<b>Prof. Univ.Habil. Dr. Eng. Diana CURSARU</b>	Member-Coordinator of the Chemical Engineering field
<b>Dr. Eng. Bajan Marian</b>	Member - PhD student
<b>Dr. Eng. Vacarescu Sondra-Preascilla-Ioana</b>	Member – PhD student
<b>Dr. Eng. Iacob Dragos Valentin</b>	Member – PhD student
<b>Dr. Eng. Bejan Diana-Rita</b>	Member – PhD student
<b>Eng. Carstea Vasile</b>	Economic environment member
<b>Dr. Eng. Enache Florin</b>	Economic environment member
<b>Educator Paltineanu Ciprian Emanuel</b>	Economic environment member

### *1.3. General description of the field of doctoral studies*

Doctoral field **Systems Engineering** following **the ARACIS** external evaluation from **September 20-24, 2021** - [ARACIS council decision no.97/25.11.2021](#) , [the external coordinating report](#) of 25.11.2021, [the external report of the foreign expert of 25..11.2021](#) - obtained **Maintenance of accreditation** .

IOSUD-UPG from Ploiești obtained **the Maintenance of accreditation** following the external institutional evaluation of UPG from Ploiești from **05.03.2025-07.03.2025** [EI2736 UPG Council-Report 08.05.2025.pdf](#) .

On 04.06.2025 it was sent by [e-mail to ARACIS \(Ms. Prof. Eugenia MINCĂ\)](#) [The interim internal report for DSUD-IS-UPG](#) (No. 13324/ 04.06.2025)

In the doctoral field of **Systems Engineering** , **6** doctoral supervisors (4 tenured - approx. 66%) and **21 doctoral students** are active in the 2025-2026 academic year. The number of doctoral theses defended during the last 5 academic years was 4., at the address [https://www.ace.upg-ploiesti.ro/doctorat/Comisii\\_sustinere\\_teze\\_doctorat\\_ultimii\\_5\\_aniversitari.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Comisii_sustinere_teze_doctorat_ultimii_5_aniversitari.pdf) the doctoral committees are presented.

## **II. Preparation of the internal evaluation report**

The internal evaluation report was prepared by the coordinator of the doctoral field of Systems Engineering, Emeritus Professor Dr. Eng. Nicolae Paraschiv, [nparaschiv@upg-ploiesti.ro](mailto:nparaschiv@upg-ploiesti.ro) tel 0723261442, with the support of the doctoral supervisors, a graduate and a doctoral student as follows:

### *Doctoral supervisors:*

1. Prof. habil. dr. eng. Octavian Ionescu;
2. Prof. Dr. Valentina Emilia Bălaș;
3. Prof. Dr. Eng. Mihaela Oprea;
4. Professor Gabriel Rădulescu
5. Prof. univ.habil. dr.eng. Luminița Duță

### *On behalf of doctoral graduates, he was a member of the team*

- Head of works Dr. Eng. Marian Popescu

### *From the doctoral students, the following were members of the team :*

### III. Information necessary to assess the degree of fulfillment of standards and performance indicators

#### AREA A. Institutional capacity

##### Criterion A.1. Institutional structures and processes of managerial and administrative type, involving students and other stakeholders

**Standard SA1.1. Organizational components and institutional processes** The HIE has organizational components in its structure that operate on the basis of appropriate competencies, attributions, processes and application procedures, which ensure an effective management system.

*Indicator IPAI.1.1 For the development of the university study program/field, the HEI has adequate organizational components and a management system, the functioning of which is based on methodologies, regulations and procedures periodically revised, in accordance with the law.*

At the University of Petroleum and Gas of Ploiesti there is and applies **Regulation on the organization and functioning of the Petroleum and Gas University of Ploiesti** (<https://www.upg-ploiesti.ro/wp-content/uploads/2025/03/R-01-02-REGULAMENT-DE-ORGANIZARE-SI-FUNCTIONARE-A-UNIVERSITATII-PETROL-GAZE-DIN-PLOIESTI-02.12.2024-1.pdf>).

##### **(a) Internal regulations of administrative structures (institutional regulations for the organization and conduct of doctoral studies, regulations of doctoral schools).**

At the level of IOSUD - Petroleum and Gas University of Ploiesti, specific regulations for doctoral studies exist and apply. [https://doctorat.upg-ploiesti.ro/images/Metodologii/2026/R-07\\_05-Regulament-privind-organizaarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf](https://doctorat.upg-ploiesti.ro/images/Metodologii/2026/R-07_05-Regulament-privind-organizaarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf).

A multidisciplinary doctoral school operates at IOSUD - University of Petroleum and Gas of Ploiești. Information is available on the IOSUD website: [https://doctorat.upg-ploiesti.ro/\(Doctoral School – Archive – Oil and Gas University of Ploiești\)](https://doctorat.upg-ploiesti.ro/(Doctoral+School+Archive+Oil+and+Gas+University+of+Ploiesti))

The hierarchy within IOSUD-UPG, as well as the subordination and collaboration relationships, can be found in **the UPG Ploiesti Organization Chart** ([Organization Chart – Petrol-Gaze University of Ploiesti](#))

The organization and operation of doctoral studies conducted at the Petroleum and Gas University of Ploiești, in the last 5 years, has been carried out in accordance with:

**Regulations for the organization and conduct of doctoral studies at the Petrol-Gaze University of Ploiești** ( valid for doctoral students enrolled before the 2019-2020 academic year) which can be accessed at ([https://doctorat.upg-ploiesti.ro/images/Metodologii/Regulament\\_privind\\_organizaarea\\_studiilor\\_universitare\\_de\\_doctorat\\_valabil\\_ptr\\_doctoranzi\\_inmatriculati\\_inainte\\_de\\_2019-2020.pdf](https://doctorat.upg-ploiesti.ro/images/Metodologii/Regulament_privind_organizaarea_studiilor_universitare_de_doctorat_valabil_ptr_doctoranzi_inmatriculati_inainte_de_2019-2020.pdf)),

**Regulation on the organization and conduct of doctoral studies at the Petrol – Gaze University of Ploiești** (valid for doctoral students enrolled starting with the 2019-2020 academic year) which can be accessed at ([https://doctorat.upg-ploiesti.ro/images/Metodologii/Regulament\\_privind\\_organizarea\\_studiilor\\_universitare\\_de\\_doctorat\\_valabil\\_ptr\\_doctoranzi\\_inmatriculati\\_incepand\\_cu\\_2019-2020.pdf](https://doctorat.upg-ploiesti.ro/images/Metodologii/Regulament_privind_organizarea_studiilor_universitare_de_doctorat_valabil_ptr_doctoranzi_inmatriculati_incepand_cu_2019-2020.pdf)).

**THE REGULATION ON THE ORGANIZATION AND CONDUCT OF DOCTORAL STUDIES AT THE PETROLEUM – GAS UNIVERSITY OF PLOIEȘTI** has been updated to implement the specifications of the Education Law **199/2003** and OM Order **3020/2024**, was

approved in the meeting of the University Senate on 14.03.2024 and can be accessed at ( [https://doctorat.upg-ploiesti.ro/images/Metodologii/2026/R-07\\_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf](https://doctorat.upg-ploiesti.ro/images/Metodologii/2026/R-07_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf) ).

Also , the multidisciplinary doctoral school within IOSUD-UPG Ploiesti carries out its activity in accordance with **the REGULATIONS FOR THE ORGANIZATION AND OPERATION OF THE DOCTORAL SCHOOL WITHIN IOSUD - UNIVERSITY OF PETROLEUM AND GASES IN PLOIEȘTI** , adopted at the Senate meeting of 17.04.2025 and is available at: ( [https://doctorat.upg-ploiesti.ro/images/Metodologii/2026/01-R-07.08\\_3.0-Regulemnt\\_de\\_organizare\\_si\\_functionare\\_a\\_Scolii\\_doctorale.pdf](https://doctorat.upg-ploiesti.ro/images/Metodologii/2026/01-R-07.08_3.0-Regulemnt_de_organizare_si_functionare_a_Scolii_doctorale.pdf) ).

**(b) Methodology for conducting elections at the level of CSUD, doctoral school and evidence of their conduct**

At the address ( [CSUD - Doctoral School - UPG Ploiesti \(upg-ploiesti.ro\)](http://CSUD - Doctoral School - UPG Ploiesti (upg-ploiesti.ro)) ) you can consult the documents related to the election of CSUD members UPG-Ploiesti, respectively:

[ELECTORAL OFFICE COMPOSITION](#)

[CALENDAR FOR ELECTIONS OF MEMBERS OF THE COUNCIL OF UNIVERSITY DOCTORAL STUDIES](#)

[Methodology for organizing elections and appointing Council members](#)

[APPLICATION FILE FOR MEMBERSHIP OF THE COUNCIL OF UNIVERSITY DOCTORAL STUDIES](#)

[List of doctoral candidate supervisors](#)

[List of doctoral student candidates](#)

[List of doctoral student voters](#)

[List of doctoral supervisors](#)

[Decision to appoint CSUD members](#)

The management structures of the Doctoral School at IOSUD – UPG Ploiesti were established based on **the Methodology for organizing and conducting the process of establishing and electing management structures and positions at the Oil and Gas University of Ploiesti** , which is available at ( [https://www.upg-ploiesti.ro/sites/default/files/prezentare/regulamente/2020/R%2001.10\\_5.2.pdf](https://www.upg-ploiesti.ro/sites/default/files/prezentare/regulamente/2020/R%2001.10_5.2.pdf) ).

**(c) The methodology for conducting the last competition for the position of CSUD director and evidence of its conduct**

The competition for the position of Director of the Council for Doctoral University Studies ( *CSUD* ) of IOSUD – UPG Ploiesti was organized and conducted according to **the Methodology for organizing and conducting the competition for the position of Director of the Council for Doctoral University Studies at IOSUD - Petrol-Gaze University of Ploiesti** ( [REGULATION \(upg-ploiesti.ro\)](#) ), a document that was approved by the Monitoring Committee on 25.11.2022 and approved in the meeting of the University Senate on 13.12.2022. The competition committee consisted of:

1. Professor, PhD in Chemistry Horia Iovu - Director of CSUD Politehnica Bucharest;
2. Prof. Dr. Eng. Mihai Sorin Radu - Rector of the University of Petroșani;
3. Prof.univ.habil.dr.eng. Ioan Cșlin Roșca- Dean of the Faculty of Mechanical Engineering, Transilvania University Brașov;
4. Univ. Prof. Dr. Eng. Mihai Arghir- Director of the Génie Mécanique et Systèmes Complexes department , Université de Poitiers, France;
5. Prof. Dr. Eng. Nicolae Paraschiv, University of Oil and Gas of Ploiești.

Following the winning of the competition for CSUD director of IOSUDUPG in Ploiesti, Mr. Prof.univ.habil.dr.ing. Răzvan George Rîpeanu was validated by the University Senate in the meeting of 9.03.2023 and was appointed as CSUD director by the decision of the UPG rector of 10.03.2024, for a 4-year mandate, respectively until 09.03.2027.

In accordance with the provisions of the Higher Education Law no. 199/2023, the Framework Regulation on doctoral studies, of 08.01.2024 part of OM 3020/2024 and its own Regulation, the CSUD of IOSUD- UPG in Ploiesti ensures the operational management of the institution organizing doctoral studies. The composition of the CSUD of IOSUD-UPG is made up of a director and 8 members. The composition of the CSUD is visible at <https://doctorat.upg-ploiesti.ro/iosud/csud>.

The operational management of the Doctoral School is ensured by the Doctoral School Council and its Director. The composition of the CSD is available at <https://doctorat.upg-ploiesti.ro/iosud/csd>.

It can be seen that in the CSUD structure, doctoral students have 2 representatives, and in the CSD structure they have 4 representatives.

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

**Admission to doctoral studies**

Admission to the doctoral program is carried out in accordance with [the Methodology for organizing and conducting the 2025 doctoral admission competition](#), a methodology that is updated annually.

All information regarding admission to the doctoral program is also posted on the website of UPG in Ploiesti and the Doctoral School ( [Admission - Doctoral School - UPG Ploiesti](#) ), namely:

- [Admission methodology](#)
- [Admission calendar](#)
- [Academic year structure](#)
- [List of doctoral supervisors - Admission places](#)
- [Required documents](#)
- [Admission topic](#)
- [Admission results](#)
- [Annual fees](#)

**Functional management structures [(IOSUD / CSUD / Doctoral School Council (regularity of convening meetings))]**

The members of *the CSUD* and *CSD* of IOSUD-UPG meet in meetings (including online, as was the case, for example, during the state of emergency) whenever necessary.

Curriculums, regulations, public theses defense committees, applications for affiliation to IOSUD-UPG, applications for extension of the doctoral internship, elections for vacant or temporarily vacant positions, etc. are debated and approved in *CSD* and *CSUD meetings*. In [the Document CSD and CSUD meetings](#) The dates of *the CSD and CSUD* meetings can be found: At the address [Methodologies, regulations and legislation – Petrol-Gaze University Ploiești](#) CSUD decisions are posted.

Each doctoral field has a field coordinator. The duties of the field coordinator are stipulated in art.14 of [01-R-07.08 3.0- ROF-SD-martie-2025-MODIFICATA-JURIST.pdf](#). The main responsibilities of the field coordinator are: a) ensuring the interface between the doctoral field and the CSD; b) proposing affiliation to the Doctoral School or proposing revocation of the quality of doctoral supervisor in the respective field; c) proposing the reallocation of the leadership of an ongoing doctoral program to another doctoral supervisor, under the conditions provided by law; d) mediating any conflicts between doctoral students and doctoral supervisors who carry out activity within the respective field; e) proposing the curriculum for the advanced university studies program of the field; f) proposing the minimum scientific performance standards for the affiliation of doctoral supervisors to the Doctoral School, for the respective field, in compliance with the legislation in force.

*CSD* and *CSUD* of IOSUD-UPG propose criteria, procedures and standards regarding the obligations regarding the frequency and activities of doctoral students. The form of conducting doctoral studies in the field of **Systems Engineering** is full- *time or part-time*. The actual required presence of the doctoral student is decided by the doctoral supervisor, depending on the specifics of

the doctoral program and in compliance with the provisions of **the Regulation on the organization and conduct of doctoral studies at the University of Petrol – Gaze of Ploiești** .

### **Doctoral study contract**

**the Doctoral University Study Contract** is completed, which is standard SMQ no. F 299.13/Ed.8 revised 2025. ( Doctoral studies contract

( [https://www.ace.upg-ploiesti.ro/doctorat/F\\_299\\_Contract\\_studii\\_universitare\\_doctorat.pdf](https://www.ace.upg-ploiesti.ro/doctorat/F_299_Contract_studii_universitare_doctorat.pdf) ) , respectively, Doctoral studies contract with fee ( [https://www.ace.upg-ploiesti.ro/doctorat/F\\_300\\_Contract\\_anual\\_studii\\_universitare\\_doctorat\\_taxa.pdf](https://www.ace.upg-ploiesti.ro/doctorat/F_300_Contract_anual_studii_universitare_doctorat_taxa.pdf) )

Doctoral students enrolled in the first year are required to complete the advanced university training and documentation program. This program is carried out based on a curriculum specific to each doctoral field, approved in the joint meeting of *CSD* and *CSUD* of 22.07.2025, and [the SENATE OF THE UNIVERSITY OF PETROLEUM – GAZE IN PLOIEȘTI](#) . For the field of **Systems Engineering**, the curriculum can be viewed at <https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineria-sistemelor> or compact at ( [https://www.ace.upg-ploiesti.ro/doctorat/plan\\_inv\\_ingineria\\_sistemelor\\_2025\\_2026.pdf](https://www.ace.upg-ploiesti.ro/doctorat/plan_inv_ingineria_sistemelor_2025_2026.pdf) ) .

Students enrolled in the doctoral program can also carry out teaching activities. In the 2025-2026 academic year, two of the doctoral students in **the Systems Engineering doctoral field** also occupy fixed-term assistant positions within the Department of *Automation, Computers and Electronics* of the University of Ploiești, to which **the Systems Engineering doctoral field is affiliated** .

According to art. 12, 27,28,29, 31, 32 and 33 of **the Regulation on the organization and conduct of doctoral studies at the University of Petroleum and Gas of Ploiești** ( [https://doctorat.upg-ploiesti.ro/images/Metodologii/2026/R-07\\_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf](https://doctorat.upg-ploiesti.ro/images/Metodologii/2026/R-07_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf) ) , The Doctoral School of UPG, based on its own regulations ( [https://doctorat.upg-ploiesti.ro/images/Metodologii/2026/01-R-07.08\\_3.0-Regulemnt\\_de\\_organizare\\_si\\_functionare\\_a\\_Scolii\\_doctorale.pdf](https://doctorat.upg-ploiesti.ro/images/Metodologii/2026/01-R-07.08_3.0-Regulemnt_de_organizare_si_functionare_a_Scolii_doctorale.pdf) ) provides doctoral students with Advanced University Study Preparation Plans ( *PPA* - [https://ace.upg-ploiesti.ro/doctorat/F\\_395\\_Plan\\_individual\\_pregatire\\_universitara\\_avansata\\_doctorat\\_PPA.pdf](https://ace.upg-ploiesti.ro/doctorat/F_395_Plan_individual_pregatire_universitara_avansata_doctorat_PPA.pdf) ) , the discipline sheets related to them being voted by *the CSD* and *CSUD* and individual Scientific Research Programs ( *PCS* – [https://ace.upg-ploiesti.ro/doctorat/F\\_396\\_Program\\_individual\\_cercetare\\_doctorat\\_PCS.pdf](https://ace.upg-ploiesti.ro/doctorat/F_396_Program_individual_cercetare_doctorat_PCS.pdf) ) .

The doctoral school is obliged to ensure free and unrestricted access to the advanced training program for all doctoral students at *the PPA* and *PCS*, which are annexes to the doctoral university study contract.

### **Specifications regarding doctoral studies**

In **the Regulation on the organization and conduct of doctoral studies at the Petroleum and Gas University of Ploiești**

( [https://www.upg-ploiesti.ro/sites/default/files/prezentare/regulamente/2024/R%2007\\_05%20Regulament%20privind%20organizaarea%20si%20desfasurarea%20stud%20univ%20drd%20la%20UPG%20Ploiesti.pdf](https://www.upg-ploiesti.ro/sites/default/files/prezentare/regulamente/2024/R%2007_05%20Regulament%20privind%20organizaarea%20si%20desfasurarea%20stud%20univ%20drd%20la%20UPG%20Ploiesti.pdf) )

The obligations of *IOSUD*, the Doctoral School, the doctoral supervisor and the doctoral student are specified. In exceptional situations (such as the Covid-19 pandemic), the taking of exams, research reports, the thesis defense and the public defense of the doctoral thesis can also be carried out online. **The procedure for the pre-defense and defense of doctoral theses during the state of emergency** can be found on the UPG and Doctoral School website at [https://doctorat.upg-ploiesti.ro/images/Metodologii/Procedura\\_de\\_presustinere\\_a\\_tezelor\\_de\\_doctorat\\_pe\\_durata\\_staril\\_or\\_de\\_urgenta.pdf](https://doctorat.upg-ploiesti.ro/images/Metodologii/Procedura_de_presustinere_a_tezelor_de_doctorat_pe_durata_staril_or_de_urgenta.pdf) ).

*The CSD* and *the CSUD* propose mandatory criteria, procedures and standards for changing the doctoral supervisor of a given doctoral student and the procedures for mediating conflicts (art. 21

paragraphs 1, 2 and 3). At the motivated request of the doctoral student, *the CSD* may approve the change of the doctoral supervisor if it has been established that the legal or contractual obligations assumed by him have not been fulfilled, or for other reasons concerning the supervision relationship between the doctoral supervisor and the doctoral student. The Doctoral School Council appoints another doctoral supervisor, and when appointing him, *the CSD* will take into account, as a priority, the completion by the doctoral student of the doctoral thesis and the study program.

*CSD* and *CSUD* propose mandatory criteria, procedures and standards regarding the conditions under which the doctoral program may be interrupted (art. 3.18). The doctorate may be interrupted for medical reasons, in order to take leave for pregnancy and maternity or leave for raising and caring for a child, respectively for other valid reasons, under the conditions established by the regulations of the doctoral school. Interruptions, the cumulative duration of which is no more than 4 academic semesters, are approved by the university senate, at the request of the doctoral student, with the approval of the doctoral supervisor and the director of the doctoral school. (art. 5). According to art. 24 (1) the duration of the doctoral program established by law may be extended by 1-2 years, with the approval of *CSUD-UPG*, the university senate, at the proposal of the doctoral supervisor. Doctoral studies may be interrupted at the request of the doctoral student for valid reasons, under the conditions established by the regulations of the doctoral school. The duration of doctoral studies is extended by the cumulative periods of approved interruptions. Interruptions are approved by *the CSUD*, with the approval of the doctoral supervisor and the *CSD*. The extension or interruption of doctoral studies is the subject of an addendum to the doctoral studies contract.

Art. 25. specifies that if the doctoral student fails to complete the thesis within the time limit established according to the doctoral university study contract (4 years) and any additional documents thereto, he/she is automatically expelled. During the 1-2 year extension period, the doctoral student cannot benefit from a doctoral scholarship or other financial support granted from doctoral grants.

( [https://www.upg-ploiesti.ro/sites/default/files/prezentare/regulamente/2024/R%2007\\_05%20Regulament%20privind%20organizarea%20si%20desfasurarea%20stud%20univ%20drd%20la%20UPG%20Ploiesti.pdf](https://www.upg-ploiesti.ro/sites/default/files/prezentare/regulamente/2024/R%2007_05%20Regulament%20privind%20organizarea%20si%20desfasurarea%20stud%20univ%20drd%20la%20UPG%20Ploiesti.pdf) ).

According to art. 11 and 14 of **the Regulation on the organization and conduct of doctoral studies at the Petrol – Gaze University** of Ploiești, doctoral students have unrestricted access to all the infrastructure available at the university, regardless of its administrator. The decision of the Board of Directors no. 4392 of 23.11.2015 presented in ( [https://www.ace.upg-ploiesti.ro/doctorat/Hotarare\\_CA\\_privind\\_accesul\\_studentilor\\_doctoranzi.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Hotarare_CA_privind_accesul_studentilor_doctoranzi.pdf) ) regulates the access of doctoral students, their supervision and the manner of compliance with the norms of protection and safety at work.

Doctoral supervisors must take all necessary measures to ensure that the authors of doctoral theses comply with the standards of quality and professional ethics, including ensuring the originality of the content. The anti-plagiarism procedure within the Petrol-Gaze University of Ploiești related to the originality of the content of doctoral theses is respected, according to the Code of Professional Ethics and Deontology of UPG, Code R01-01 **Code of Ethics and Deontology of the University** ( [https://www.upg-ploiesti.ro/wp-content/uploads/2024/11/01.01\\_Cod\\_Etica.pdf](https://www.upg-ploiesti.ro/wp-content/uploads/2024/11/01.01_Cod_Etica.pdf) ) and art 36 and 37 which provide for verification using the Similarity Verification System. In the Petrol-Gaze University of Ploiești there is a software system for detecting plagiarism, ( <https://www.sistemantiplagiat.ro/> ) which is an online tool dedicated to verifying all documents with sources located in the University's own database (archived documents), in the databases of other Universities (based on the declaration of mutual database exchange), internet resources. The anti-plagiarism report contains information related to: the title of the work; the author/authors; the type of document (book, guide, doctoral thesis, article, etc.), as well as the values of the similarity coefficients 1 and 2. Similarity coefficient 1 – expresses the percentage level of borrowings found in certain sources that contain a minimum of 5 words. Similarity coefficient 2 – expresses the percentage level of borrowings that contain a minimum of 25 words. The limit accepted in our institution is a maximum of 5%.

The organization and conduct of the public defense session of the doctoral thesis, provides, as part of the preliminary operations for submitting the thesis to the doctoral secretariat, that the doctoral student submits the doctoral thesis in digital format together with the request for the initiation of the procedures for analyzing similarities and evaluating the thesis by the academic guidance and integrity committee. The similarity report is submitted to the doctoral supervisor within a maximum of 30 days, and he draws up the resolution regarding the similarity report. The similarity reports for each doctoral student are available at the doctoral school secretariat.

Each doctoral student benefits from a Guidance and Academic Integrity Committee (CIIA) consisting of 3 teaching staff appointed annually by decision of the UPG rector. In order to comply with OM 3020/2024 ( [https://www.edu.ro/sites/default/files/fisiere%20articole/OM\\_3020-2024\\_reactualizat.pdf](https://www.edu.ro/sites/default/files/fisiere%20articole/OM_3020-2024_reactualizat.pdf) ) which specifies that at least one member of the guidance and academic integrity committee must be from outside IOSUD, all committees were updated in 2024 in compliance with the aforementioned order ( [https://ace.upg-ploiesti.ro/doctorat/Decizii\\_comisii\\_IIA\\_2020\\_2025.pdf](https://ace.upg-ploiesti.ro/doctorat/Decizii_comisii_IIA_2020_2025.pdf) ) The members of *the CIIA* are also members of *the Research Report* and *Doctoral Thesis Pre-Defense Committees* and can thus monitor the doctoral student's progress.

The exams in the Advanced University Training Program are proposed by the doctoral supervisor and are approved by the Director of the Doctoral School. Each exam or paper is taken after the candidate submits an application.

( [https://ace.upg-ploiesti.ro/doctorat/F\\_150\\_Cerere\\_sustinere\\_examen\\_si\\_raport\\_cercetare.pdf](https://ace.upg-ploiesti.ro/doctorat/F_150_Cerere_sustinere_examen_si_raport_cercetare.pdf) )

, a request that is approved by the director of the Doctoral School. The committee for supporting a *PPA-related exam* is composed of the doctoral supervisor and 2 members (at least one being the holder of the examination discipline),

The Individual Scientific Research Program ( *PCS* ) is approved by the Director of the Doctoral School. The committees for defending scientific research reports are approved by the Director of the Doctoral School. Scientific research reports are subject to similarity verification by the doctoral school secretariat before defense (the reduced report is archived in the doctoral student's file), and the result of the verification is brought to the attention of both the academic guidance and integrity committee and the audience at the public defense meeting. The committee for defending a Research Report includes the doctoral supervisor and members of the academic guidance and integrity committee. The defense of Research Reports is done in public meetings, the meetings being announced at least 48 hours before the defense on the Doctoral School noticeboard. The minutes of the defense of research reports mention all the observations of the members present at the meeting. Regarding doctoral thesis proposals, these are formulated by doctoral supervisors in consultation with doctoral students and after possible discussions with representatives of the economic environment.

### **Completion of doctoral studies**

The procedure for organizing and conducting the public hearing for the defense of the doctoral thesis provides, as part of the preliminary operations for submitting the thesis to the Doctoral School Secretariat, that the doctoral student submits the doctoral thesis in digital format together with the request for initiating the procedures for analyzing similarities and evaluating the thesis by the Academic Guidance and Integrity Committee. The Doctoral School Secretariat transmits the doctoral thesis in its final electronic form for performing the similarity analysis using the *sistemantiplagiat.ro* software application. The similarity report is submitted to the doctoral supervisor within a maximum of 30 days, and he/she draws up the resolution regarding the similarity report. Doctoral students can request this verification twice free of charge during their doctoral internship and for a modest cost of 25 lei as many times as they wish. All doctoral theses starting with April 2016 are subject to anti-plagiarism verification. These reports for all defended doctoral theses are uploaded to the *Integrated Educational Register platform of the Ministry of Education and Research* ( <https://rei.gov.ro/teze-doctorat> ). In art.36 of [https://www.upg-ploiesti.ro/wp-content/uploads/2024/09/R-07\\_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf](https://www.upg-ploiesti.ro/wp-content/uploads/2024/09/R-07_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf) states that the doctoral thesis can be defended if: a) the doctoral student has accumulated 150 transferable credits during the doctoral studies and meets the minimum standards set by CNATDCU for his/her doctoral

field; b) the doctoral student submits the thesis to the secretariat for doctoral university studies; c) The doctoral school performs the similarity analysis, using a program recognized by CNATDCU. The doctoral school may additionally request the use of a program developed at national level regarding the detection of similarities. The analysis and interpretation of the results of the similarity report are carried out both by the academic guidance and integrity committee and by the person(s) designated by the Doctoral School, usually the doctoral supervisor, before the doctoral thesis is defended. The similarity reports are included in the "doctoral file". The verification period cannot exceed 10 days from the date of submission of the doctoral thesis to IOSUD; d) in the event that the similarity report indicates the need to make changes to the doctoral thesis, the doctoral student and the doctoral supervisor are officially notified by the Doctoral School. After the elements reported are remedied, the steps from letters b) and c) are resumed; e) identification of violations of good conduct in research and development, including plagiarism of results or publications of other authors, fabrication of results or replacement of results with fictitious data at the time of the thesis evaluation by the doctoral supervisor or by the Academic Guidance and Integrity Committee, must be notified to the University Ethics Committee for analysis. If the University Ethics Committee establishes the guilt of plagiarism, the doctoral student is expelled. f) the doctoral thesis is submitted to the Academic Guidance and Integrity Committee. The scheduling of the thesis defense cannot exceed 30 days from the date of receipt by the committee of the similarity report; g) after this defense, which is public, the doctoral supervisor, in accordance with the recommendation of the committee and the results of the analysis of the similarity report, decides on the official submission of the thesis and the organization of the public defense; h) the acceptance report of the doctoral supervisor and the agreement of the committee members are included in the "doctoral file"; the doctoral thesis is officially submitted to the Doctoral School secretariat, in printed and electronic format, accompanied by the result of the analysis of the similarity report carried out by the designated person(s), together with the summary of the doctoral thesis, the doctoral student's CV, the list of the doctoral student's works, the doctoral student's published works and the estimated date for the public defense; the Doctoral School secretariat certifies the fulfillment by the doctoral student of all obligations within the doctoral university study program; i) the doctoral thesis and its annexes will be available for public consultation for 90 calendar days, before the public defense, on the national platform managed by the Executive Unit for Financing Higher Education, Research, Development and Innovation (UEFISCDI), in accordance with the legal provisions in force in the field of copyright; j) during the period in which the thesis is public on the national platform, any natural or legal person may make observations regarding the existence of deviations from the standards of ethics and deontology, including from the perspective of the existence of plagiarism. Observations can be submitted online, to an e-mail address provided by the Doctoral School, or to the IOSUD-UPG registry. The observations are recorded in a report prepared by the Doctoral School, which will be sent to CSUD for analysis and decision in order to validate the initiation of the procedure for the public defense of the doctoral thesis and will be part of the doctoral file; k) if the CSUD decision is of validation, the procedure for the public defense of the doctoral thesis is initiated by establishing the doctoral committee; l) if CSUD invalidates the initiation of the public defense procedure of the doctoral thesis, the Doctoral School receives recommendations regarding the rewriting of the doctoral thesis and the elimination of situations that do not comply with the standards of ethics and deontology, and the doctoral student is obliged to remedy the content of the thesis within 3 months from the communication of the decision to invalidate the defense, with the resumption of the procedure for making the work transparent. After the consultation period on the REI platform, the thesis is rechecked for similarities, and if small corrections are made in it, a third check of similarities is carried out (3) The composition of the doctoral thesis defense committee is proposed by the doctoral supervisor, endorsed by the Doctoral School and approved by CSUD . The defense committee, appointed by decision of the UPG Rector, is composed of at least 5 members: the president, as a representative of IOSUD-UPG, the doctoral supervisor and at least 3 referees from the country or abroad, specialists in the field in which the doctoral thesis was developed and of which at least 2 carry out their activity outside IOSUD-UPG. The members of the doctoral committee have a doctorate degree and have at least the teaching position of associate professor or scientific researcher level II

or have the quality of doctoral supervisor, in the country or abroad; (4) The request for setting the date of the public defense of the doctoral thesis is formulated by the doctoral student, endorsed by the doctoral supervisor and the president of the defense committee. The request is registered with the secretariat of the Doctoral School at least 25 calendar days before the proposed date for defense.

The proposed date for the defense cannot be earlier than the previously estimated date for the public defense. (5) The doctoral school prepares and posts the announcement for the public defense at least 20 calendar days before the proposed date for the defense ( <https://doctorat.upg-ploiesti.ro/doctorat/sustinere-teza/27-2022-anunturi-sustinere-teza-de-doctorat/183-alexuta-daniel-4> ). It will necessarily include the location, date and time of the defense, the doctoral supervisor(s), as well as the place where the full text of the thesis can be consulted in printed format. The announcement of the public defense, the thesis summary in electronic format, the scientific memorandum, the PhD student's CV, the CVs of the members of the public defense committee of the doctoral thesis or links to them are displayed on the IOSUD-UPG website. (6) The doctoral thesis is defended in a public session before the doctoral committee, after the evaluation by all the referees and the submission of their reports at least 15 days before the defense of the thesis. The defense of the doctoral thesis may take place in the presence of at least 4 of the members of the doctoral committee, with the mandatory physical participation of the committee chair and the doctoral supervisor, the other members of the committee being able to participate also in an online videoconference system. The public defense must include a question session from the members of the doctoral committee and the public. (7) Based on the public defense of the doctoral thesis, the referees' reports, the statement on the originality of the work and the analysis on the degree of similarity, the doctoral committee evaluates and deliberates on the award of the doctoral degree, in compliance with the minimum standards developed by CNATDCU for the award of the doctoral degree. At

<https://www.upg-ploiesti.ro/sites/default/files/doctorat/R%2007%2042%20aprobat%20Senat%202024.pdf> contains **the Operational Procedure COD: R 07.42 Defending the doctoral thesis**, a procedure that was approved by the Monitoring Committee on 12.12.2024 and approved in the meeting of the Senate of the Petroleum and Gas University of Ploiești on 12.12.2024. After the public defense of the doctoral thesis and its validation by the CNADTCU, the doctoral student is granted **30** transferable credits.

**(e) The existence of mechanisms for recognizing the quality of doctoral supervisor and for equivalence of the doctorate obtained in other states**

In IOSUD UPG Ploiesti there is a regulation **Procedure regarding the automatic recognition by the Petrol-Gaze University of Ploiesti of the quality of doctoral supervisor obtained in accredited higher education institutions abroad**. It can be found at <https://doctorat.upg-ploiesti.ro/images/Methodologii/2026/R-07-01-RECUNOASTEREA-AUTOMATA-A-CALITATII-DE-DE-DUCATOR-DE-DOCTORAT-OBTINUTE-IN-INSTITUTII-DE-INVATAMANT-SUPERIOR-SAU-DE-CERCETARE-DEZVOLTARE-DIN-STRAINATATE.pdf> . Affiliation to IOSUD-UPG is done in compliance with the **Regulation on the public defense of habilitation theses and the co-optation of doctoral supervisors at the University of Petroleum and Gas of Ploiești** ( [https://www.upg-ploiesti.ro/sites/default/files/prezentare/regulamente/2024/R07.06\\_4.0\\_REGULAMENTUL%20PRIVIND%20SUS%205%20INEREA%20PUBLIC%20C4%82%20A%20TEZELOR%20DE%20ABILITARE.pdf](https://www.upg-ploiesti.ro/sites/default/files/prezentare/regulamente/2024/R07.06_4.0_REGULAMENTUL%20PRIVIND%20SUS%205%20INEREA%20PUBLIC%20C4%82%20A%20TEZELOR%20DE%20ABILITARE.pdf) ). In art.3 (a) and (b), art.7(1) art.14 (a),(b),(c), (d), art.(15) and art.(16) are specified the conditions regarding the organization and conduct of the affiliation process and granting of membership of the Doctoral School within IOSUD-UPG. After obtaining the habilitation certificate, the Doctoral School Council appoints a commission that verifies the file of the candidate who wishes to affiliate and in case of its favorable opinion in the CSD meeting, this affiliation is proposed and validated in the CSUD and approved in the University Senate of UPG Ploiesti. Doctoral supervisors are subject to internal and external analysis at an interval not exceeding 5 years. In **the Regulation on the organization and conduct of doctoral studies at the Petroleum and Gas University of Ploiești, art.50** (1), (2), (3) and (4) ( [https://www.upg-ploiesti.ro/sites/default/files/prezentare/regulamente/2024/R%2007\\_05%20Regulament%20privind](https://www.upg-ploiesti.ro/sites/default/files/prezentare/regulamente/2024/R%2007_05%20Regulament%20privind)

[%20organizarea%20si%20desfasurarea%20stud%20univ%20drd%20la%20UPG%20Ploiesti.pdf](#) ) these requirements regarding the evaluation of doctoral supervisors are provided, and disaffiliation is proposed by the CSD through the **Regulation of the Doctoral School of the University of Petroleum and Gas of Ploiești** [01-R-07.08\\_3.0-\\_ROF-SD-martie-2025.pdf](#) to art.14(b) and art.21((1) and (2)) Disaffiliation from the Doctoral School of IOSUD-UPG can be done as follows: (1) At the request of the doctoral supervisor. (2) Following a notification received from the Ethics Commission of UPG-Ploiești regarding the violation of ethical norms by an affiliated doctoral supervisor. (3) Upon finding that the minimum standards established by *CNATDCU have not been met* on the date of submission of a new self-evaluation report, but not more than 5 years later (4) following final decisions by *CNATDCU* to withdraw the doctoral title following plagiarism complaints for two or more coordinated doctoral theses.

### **Standard SA1.2. Stakeholder Involvement The HSI demonstrates that it involves relevant stakeholders in the development of methodologies and regulations, as well as application procedures**

***Indicator IPA1.2.1 The opinions of faculty and department members, respectively the branch or extension, and other stakeholders are taken into account in the process of adopting and reviewing methodologies, regulations, and application procedures.***

All regulations, methodologies and procedures related to the doctoral school, after their development are discussed and approved in *the CSD* and *CSUD* and verified in the quality management committee, are subject to debate by the academic community by posting them on the *UPG Intranet* , then they are approved in the Administrative Council and approved in the University Senate. In all these stages, all proposals of doctoral supervisors and doctoral students are collected and submitted to a vote, in the appropriate stages of approval/approval. Both doctoral supervisors and doctoral students are found in *the CSD* , *CSUD* and the *UPG Administrative Council* . In addition to posting the final approved form on the UPG website, they are sent by e-mail to all doctoral supervisors and doctoral students.

Petrol Gaze University of Ploiești has in force the Operational Procedure regarding the evaluation of the satisfaction of students and other stakeholders , approved by the Monitoring Committee on 20.11.2024 and approved in the meeting of the Senate of the Oil and Gas University of Ploiești on 28.11.2024

( [https://ace.upg-ploiesti.ro/doctorat/PO\\_08.01\\_Procedura\\_EVALUAREA\\_SATISFAC%C8%9AIEI\\_STUDEN%C8%9AILOR\\_SI\\_A\\_ALTOR\\_PARTI\\_INTERESATE.pdf](https://ace.upg-ploiesti.ro/doctorat/PO_08.01_Procedura_EVALUAREA_SATISFAC%C8%9AIEI_STUDEN%C8%9AILOR_SI_A_ALTOR_PARTI_INTERESATE.pdf) ). The procedure is applied in UPG in Ploiești to evaluate the satisfaction of students and other stakeholders in relation to the services offered by this institution regarding the endowment and use of the library, social services (dormitory, cafeteria), counseling services, secretarial services, teaching services (educational process, specialized consultancy).

An important component of the internal evaluation is the evaluation of doctoral supervisors by doctoral students, the purpose of which is to quantify the level of satisfaction of doctoral students within IOSUD-UPG with regard to the support and mentoring activities offered to students by their supervisors. . As a result of its implementation, doctoral students are given an anonymous questionnaire

( [https://ace.upg-ploiesti.ro/doctorat/Chestionar\\_satisfactie\\_studenti\\_doctoranzi.pdf](https://ace.upg-ploiesti.ro/doctorat/Chestionar_satisfactie_studenti_doctoranzi.pdf) )

through which they can make recommendations to improve the quality of academic and administrative services offered.

The doctoral school and implicitly the doctoral field of **Systems Engineering** monitors the scientific and professional activity of doctoral students, who are required to prepare annual individual activity reports . At the address

( [https://ace.upg-ploiesti.ro/doctorat/Rapoarte\\_studen%C8%9Bi\\_Domeniu\\_IS.zip](https://ace.upg-ploiesti.ro/doctorat/Rapoarte_studen%C8%9Bi_Domeniu_IS.zip) ) the annual reports for the year 2024 are presented. Also, an activity report for the doctoral field is presented annually. At the address

( [https://ace.upg-ploiesti.ro/doctorat/Exemplu\\_Raport\\_de\\_activitate\\_domeniu\\_doctorat\\_Ingineria\\_Sistemelor.pdf](https://ace.upg-ploiesti.ro/doctorat/Exemplu_Raport_de_activitate_domeniu_doctorat_Ingineria_Sistemelor.pdf) )

## **Criterion A.2. Material base and optimization of its use**

### **Standard SA2.1. Material base The HEI has immovable and movable assets adequate for the development of the university program/field of studies**

*Indicator IPA2.1.1 The HEI has, in accordance with the law, spaces dedicated to appropriate educational, research and administrative processes, as well as for services for students, doctoral students and trainees, which ensure a favorable environment for life and study, including for those with disabilities. Optimal spaces are also provided for the activities of the staff. These are adequately equipped.*

doctoral studies field of **Systems Engineering** has an adequate material base for the conduct of doctoral studies, with top-notch facilities and special equipment, in accordance with the mission and objectives assumed. Doctoral students in the doctoral studies field of **Systems Engineering** can benefit from the entire research infrastructure of the university, following a schedule that does not affect other activities in the laboratories in which they wish to conduct studies and research.

IOSUD UPG in Ploiești has concluded collaboration agreements for the conduct of studies and research activities with IOSUD-Aurel-Vlaicu University in Arad, IOSUD-Valahia University in Târgoviște, IOSUD-National University of Science and Technology Politehnica Bucharest, IOSUD-University of Petroșani, etc.

Within the Department of Automatics, Computers and Electronics ( *ACE* ) of the UPG in Ploiești, to which the doctoral field of **Systems Engineering is assigned** and where 4 of the 6 doctoral supervisors of the field come from, doctoral students benefit from 16 laboratories in which they can carry out research activities. Information about the equipment of these laboratories can be found at [https://www.ace.upg-ploiesti.ro/doctorat/Dotari\\_laboratoare\\_ACE\\_2026.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Dotari_laboratoare_ACE_2026.pdf)

All these laboratories are located at the UPG headquarters in Ploiești – Bdul. București no.39. Access to the laboratories is facilitated by elevators, for the laboratories located on the first floor, by automated systems for lifting wheelchairs of people with disabilities up stairs or access ramps. The laboratories and their equipment are the property of the University of Petroleum and Gas of Ploiești.

During the period 2021-2025, the values of purchases in the *ACE department* were:

2021= **1,921,741** lei;

2022= **2,230,436.23** lei;

2023= **423,956.97** lei;

2024= **215,600** lei (until 30.09.2024)

Also, in order to ensure these information and documentation resources, during the period 2020-2026, 170 titles were purchased for the field of **Systems Engineering**, resulting in a total of 282,176 library units in the library of the Petrol-Gaze University of Ploiești. The UPG library and the databases with online publications can be accessed at ( <https://www.upg-ploiesti.ro/index.php/biblioteca/> ). Students, teachers and staff of the Petrol-Gaze University of Ploiești have access to on base of IP (from the university intranet) and access mobile at [https://www.upg-ploiesti.ro/sites/default/files/Studenti/biblioteca/Resurse%20online\\_informare%20si%20documentare%20ianuarie%202021.pdf](https://www.upg-ploiesti.ro/sites/default/files/Studenti/biblioteca/Resurse%20online_informare%20si%20documentare%20ianuarie%202021.pdf) Within the Department of Automation, Computers and Electronics, doctoral students have offices in rooms E IV-2, EIV-11, E V-13.

**Standard SA2.2. Management of the material base The organizational components optimally and sustainably manage the immovable and movable assets they use for the evaluated university program/field of studies.**

*Indicator IPA2.2.1 Real estate and movable assets are adequately maintained, so as to ensure optimal conditions for study, research and living, as well as work .*

The basic research infrastructure in the doctoral field of **Systems Engineering** is also presented on the doctoral school website at:

[https://doctorat.upg-ploiesti.ro/images/Doctorat/Dotari\\_Laborator\\_ACE.pdf](https://doctorat.upg-ploiesti.ro/images/Doctorat/Dotari_Laborator_ACE.pdf)

The research infrastructure is managed by a technician who also ensures the maintenance of the equipment. When performing or assisting in experimental determinations, doctoral students are trained by the laboratory manager on safety and work safety regulations.

Doctoral students enrolled on a doctoral grant have the opportunity to purchase materials or equipment worth 7,000 lei annually during the internship years, and those enrolled on fee-paying places can purchase materials or equipment worth 2,500 lei, according to the annual decision of CSUD. To these can be added any scholarships offered by the economic environment.

### **Criterion A.3. Adequate human resources and transparent staff recruitment procedures, developed in accordance with the law**

**Standard SA3.1. Human resources** The HEI has the human resources necessary for the organization and delivery of the evaluated university program/field of study.

*Indicator IPA3.1.1 The human resources of the organizational component are adequate for carrying out the activities related to the evaluated university program/field of studies. The teaching staff has the necessary qualifications and professional skills to teach the subjects assigned to them in the staff list.*

Within the doctoral field of **Systems Engineering** there are **6 supervisors** ( [https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineri\\_a\\_-\\_sistemol](https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineri_a_-_sistemol) or [https://www.ace.upg-ploiesti.ro/conducatori\\_doctorat\\_is.php](https://www.ace.upg-ploiesti.ro/conducatori_doctorat_is.php) who have obtained the habilitation:

1. **Emeritus Professor Dr. Eng. Nicolae PARASCHIV** , is the coordinator of the Systems Engineering field, **confirmation of doctoral supervision** through OMEC no. 3867/17.05.2004. [as follows from C V](#) . According to the [minimum standards fulfillment sheet](#) it results in **meeting the minimum CNATDCU qualification standards** .

2. **Prof.univ.habil. dr.eng. Valentina Emilia BĂLAȘ** , **AUTHORIZATION** by OMEN no.5978/04.06.2018, [as shown in the CV](#) . According to [the sheet of fulfillment of the minimum standards](#) it results in **meeting the minimum CNATDCU qualification standards**.

3. **Professor, habil. PhD. Luminita DUȚA** , **AUTHORIZATION** by OMENCS no. 3801/08.12.2016, [as shown in the CV](#) . According to [the sheet of compliance with the minimum standards](#) , it results that **it does not meet the minimum CNATDCU standards of habilitation**.

4. **Professor, habil. PhD in Engineering Octavian IONESCU** , **AUTHORIZATION** by OMEN no. 4634/22.07.2025, [as shown in the CV](#) . According to [the sheet of compliance with the minimum standards](#) it results in **meeting the minimum CNATDCU qualification standards**.

5. **Prof. dr.ing. Mihaela OPREA** , **confirmation of doctoral supervision** by OMEC no. 479/05.03.2007, as [shown in the CV](#) . [According to the file, meeting the minimum standards](#) it results in **not meeting the minimum CNATDCU qualification standards**.

6. **Prof. Gabriel RĂDULESCU** , **AUTHORIZATION** by OMEN no. 5119/28.09.2017, as [follows from CV](#) . According to [the minimum standards fulfillment sheet](#) it results in **meeting the minimum CNATDCU qualification standards**.

During the last 5 academic years, in addition to the above-mentioned doctoral supervisors, he also worked within IOSUD-UPG Ploiesti in the **doctoral field of Systems Engineering**. Prof. Dr. Cristian Pătrășcioiu (deceased in 2024).

On the doctoral school website <https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineria-sistemelor> The CVs and lists of papers of the doctoral supervisors in the doctoral field of **Systems Engineering can be found** , and at the address [https://doctorat.upg-ploiesti.ro/images/2026/Lista\\_doctoranzi\\_Ingineria\\_sistemelor.pdf](https://doctorat.upg-ploiesti.ro/images/2026/Lista_doctoranzi_Ingineria_sistemelor.pdf) , the doctoral students, their year of enrollment and their supervisors are presented. In the doctoral field of **Systems Engineering** , doctoral supervisors coordinate the number of students presented in the table below.

**Table A.1** Number of PhD students in the field of Systems Engineering under coordination in the academic year 2025-2026

Doctoral supervisor	Number of doctoral students	Observations
Emeritus Professor Dr. Eng. <b>Nicolae PARASCHIV</b>	3	
Prof.univ.habil.dr.eng. <b>Valentina Emilia BĂLAȘ</b>	6	Doctoral students Ciuciu (Popa) Mihaela and Alexuță Daniel had their public defense on 13.03.2026
Prof.univ.habil.dr.eng. <b>Luminița DUȚĂ</b>	5	
Prof. <b>Mihaela OPREA, PhD in Engineering</b>	1	
Professor, PhD, <b>Octavian IONESCU</b>	3	
Prof. Dr. Eng. <b>Gabriel RĂDULESCU</b>	3	

By decision of the UPG University Senate, the maximum number of doctoral students coordinated by a doctoral supervisor in the 2025-2026 academic year is 12 doctoral students ( [https://www.upg-ploiesti.ro/wp-content/uploads/2025/10/S39\\_H15-Hotarare-Senat-30-octombrie-2025.pdf](https://www.upg-ploiesti.ro/wp-content/uploads/2025/10/S39_H15-Hotarare-Senat-30-octombrie-2025.pdf) ). Table A.1 shows that no doctoral supervisor in the Systems Engineering doctoral field **exceeds 12 students** . Each doctoral student benefits from a guidance and academic integrity committee consisting of 3 members, teaching staff or researchers, one of whom is from outside the UPG in Ploiesti. From the document [https://www.ace.upg-ploiesti.ro/doctorat/Decizii\\_comisii\\_IA\\_2020\\_2025.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Decizii_comisii_IA_2020_2025.pdf) which presents these committees for the period 2020-2025, it is noted that over **20 other teaching staff or researchers** have been or are part of these committees.

From the Discipline Sheets presented in ( <https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineria-sistemelor> ) or compact in the document [https://ace.upg-ploiesti.ro/doctorat/Fise\\_discipline\\_domeniu\\_Ingineria\\_Sistemelor\\_2025\\_2026.zip](https://ace.upg-ploiesti.ro/doctorat/Fise_discipline_domeniu_Ingineria_Sistemelor_2025_2026.zip) ) It is noted that all subjects within the training program based on advanced university studies related to the doctoral field of **Systems Engineering** are taught by teaching staff with the title of professor who have the quality of doctoral supervisor, or by teaching staff with the title of doctor in this field with experience in the field of the subjects taught.

Of the **6** affiliated doctoral supervisors for the field of **Systems Engineering**, **4** are from the **University of Petroleum and Gas of Ploiești**, and **2** come from other universities, respectively: **prof. univ. habil. dr. ing. Valentina Emilia Bălaș** from Aurel Vlaicu University of Arad and **prof.habil. dr.ing. Luminița Duță** from Valahia University Târgoviste. Since Law 199/2023 and OM

3200 do not refer to titular or associated doctoral supervisors, but only use the term doctoral supervisors, this criterion is beyond the requirements stipulated by the laws in force.

It can be seen from the date of obtaining the habilitation certificate that **one** of the 6 doctoral supervisors has obtained the habilitation certificate in the last 5 years, namely prof. habil. dr.ing. Octavian Narcis Ionescu ( <https://doctorat.upg-ploiesti.ro/abilitare/anunturi-sustineri-publice-teze-de-abilitare/29-2020-abilitare-anunturi/163-teza-de-abilitare-ionescu-octavian-2> )

From the lists of papers ( <https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineria-sistemelor> ) and compactly in [https://www.ace.upg-ploiesti.ro/doctorat/Productie\\_stiintifica\\_ultimii\\_5\\_ani.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Productie_stiintifica_ultimii_5_ani.pdf) it is observed that all doctoral supervisors have at least one paper indexed WOS Q1 or Q2 in the last 5 years.

In addition to published articles and books, visibility is highlighted for doctoral supervisors. Table A-2 presents the number of citations and Hirsch indices for doctoral supervisors in the field of **Systems Engineering** .

**Table A-2.** Number of citations in databases of doctoral supervisors in the field **Systems engineering**

No . of documents	Doctoral supervisor	WOS			SCP			GSC		
		NC	BC	Address research profile	NC	BC	Address research profile	NC	BC	Address research profile
1	Professor <b>Valentina, PhD</b> in Engineering <b>Emilia BĂLAS</b>	2712	25	<a href="http://www.researcherid.com/rid/F-4525-2010">http://www.researcherid.com/rid/F-4525-2010</a>	5455	33	<a href="https://www.scopus.com/authid/detail.uri?authorId=9279071000">https://www.scopus.com/authid/detail.uri?authorId=9279071000</a>	10552	45	<a href="https://scholar.google.ro/citations?user=XaktX0wAAAJ">https://scholar.google.ro/citations?user=XaktX0wAAAJ</a>
2	profit .prof.dr.eng. <b>Luminita DUȚĂ</b>	107	6	<a href="http://www.researcherid.com/rid/H-3063-2012">http://www.researcherid.com/rid/H-3063-2012</a>	193	9	<a href="https://www.scopus.com/authid/detail.uri?authorId=2448115290">https://www.scopus.com/authid/detail.uri?authorId=2448115290</a>	505	14	<a href="https://scholar.google.ro/citations?user=wRZOUKgAAA">https://scholar.google.ro/citations?user=wRZOUKgAAA</a>
3	profit .Dr. Eng. <b>Mihaela OPREA</b>	308	12	<a href="http://www.researcherid.com/rid/B-8554-2012">http://www.researcherid.com/rid/B-8554-2012</a>	496	14	<a href="https://www.scopus.com/authid/detail.uri?authorId=6603913473">https://www.scopus.com/authid/detail.uri?authorId=6603913473</a>	1016	18	<a href="https://scholar.google.ro/citations?user=9jQKd6QAAAJ">https://scholar.google.ro/citations?user=9jQKd6QAAAJ</a>
4	Professor Emeritus Dr. Eng. <b>Nicolae PARASCHIV</b>	152	5	<a href="http://www.researcherid.com/rid/G-3441-2016">http://www.researcherid.com/rid/G-3441-2016</a>	259	9	<a href="http://www.scopus.com/authid/detail.uri?authorId=25226941400">http://www.scopus.com/authid/detail.uri?authorId=25226941400</a>	282	8	<a href="https://scholar.google.ro/citations?user=huSJy2gAAA">https://scholar.google.ro/citations?user=huSJy2gAAA</a>
5	Professor habil.dr.eng. <b>Octavian IONESCU</b>	342	10	<a href="http://www.researcherid.com/rid/G-3034-2019">http://www.researcherid.com/rid/G-3034-2019</a>	408	12	<a href="https://www.scopus.com/authid/detail.uri?authorId=35299353200">https://www.scopus.com/authid/detail.uri?authorId=35299353200</a>	576	13	<a href="https://www.webofscience.com/wos/woscc/smart-search">https://www.webofscience.com/wos/woscc/smart-search</a>
6	Professor, PhD. <b>Gabriel RADULESCU</b>	64	45	<a href="http://researcherid.com/r">http://researcherid.com/r</a>	89	6	<a href="https://www.scopus.com/authid/detail.uri?authorId=2203623880">https://www.scopus.com/authid/detail.uri?authorId=2203623880</a>	149	8	<a href="https://scholar.google.ro/citations?user=0">https://scholar.google.ro/citations?user=0</a>

As can be seen from the CVs and the summary presented in Table A-2, doctoral supervisors in the field of **Systems Engineering** are well represented in professional

associations/societies/organizations. Among these, a special place belongs to the *Romanian Society of Automatic Control and Technical Informatics – SRAIT*. (member of the *International Federation of Automatic Control -FAC*) in which Prof. Dr. Eng. **Nicolae PARASCHIV** was member of the *Steering Committee* (<http://www.srait.ro/comitetul-director.html>), and currently coordinates the *SRAIT branch in UPG Ploiești*.

Also, emeritus professor Dr. Eng. **Nicolae PARASCHIV** was, during the period 2016-2020, a member of the 15th Commission of CNATDCU *Computers, Information Technology and Systems Engineering*.

[https://www.edu.ro/sites/default/files/OMENCNS%204106%20CNATDCU\\_0.pdf](https://www.edu.ro/sites/default/files/OMENCNS%204106%20CNATDCU_0.pdf)

The membership of doctoral supervisors in the boards of national or international journals listed in international databases is summarized in Table A-3 based on the CVs whose links are highlighted in the same table.

**Table A-3 Journals listed in international databases where PhD supervisors in the field of Systems Engineering are member collaborators and links to their CVs**

No . of documents	Leader PHD	Magazine and BDI which quotes it	CV
1	Emeritus Professor, PhD, <b>Nicolae PARASCHIV</b>	<ul style="list-style-type: none"> <li>• <b>Editor-in-chief</b> from UPG Ploiești of the journal <i>JEECCS – Journal of Electrical Engineering, Electronics, Control and Computer Science</i> , ISSN: 2457-7812, / Google Scholar, Index Copernicus, <a href="http://jeeccs.net">http://jeeccs.net</a> / <a href="https://jeeccs.net/index.php/journal/about/editori/other">https://jeeccs.net/index.php/journal/about/editori/other</a></li> <li>• <b>member in TEAM reaction to: <i>Bulletin UPG Ploiești, technical series</i></b> , editorial board member (since 2011)./ EBSCO <a href="http://www.bulletin.upg-ploiesti.ro/content.jsp?page=79&amp;language=2&amp;pageType=T">http://www.bulletin.upg-ploiesti.ro/content.jsp?page=79&amp;language=2&amp;pageType=T</a></li> <li>• <b>Editorial Board Member of <i>International Journal of Reasoning-based Intelligent Systems</i></b> – Hyogo University Japan./SCOPUS etc./ <a href="https://www.inderscience.com/jhome.php?jcode=iris">https://www.inderscience.com/jhome.php?jcode=iris</a></li> </ul>	<a href="https://doctorat.upg-ploiesti.ro/images/CV_Coordonatori/2026/Ingineria_sistemelor/PARASCHIV_CV.pdf">https://doctorat.upg-ploiesti.ro/images/CV_Coordonatori/2026/Ingineria_sistemelor/PARASCHIV_CV.pdf</a>

2	Professor , PhD . Dr. <b>Valentina Emilia BĂLAS</b>	<ul style="list-style-type: none"> <li>• Associate Editor at "IEEE Access" - <a href="https://ieeaccess.ieee.org/associate-editors/">https://ieeaccess.ieee.org/associate-editors/</a> ISI Journal IF = 3.557</li> <li>• Associate Editor TO "The act Polytechnica Hungarica" - <a href="https://uni-obuda.hu/journal/EditBoard.htm">https://uni-obuda.hu/journal/EditBoard.htm</a> their Journal IF = 0.909</li> <li>• Associate Editor TO "Smart" Decision Technologies " - <a href="https://www.iospress.nl/journal/intelligent-decision-technologies/">https://www.iospress.nl/journal/intelligent-decision-technologies/</a> ESCI Journal</li> <li>• Associate Editor at "International Journal of System Dynamics Applications" - <a href="https://www.igi-global.com/journal/international-journal-system-dynamics-applications/51803/">https://www.igi-global.com/journal/international-journal-system-dynamics-applications/51803/</a> / ESCI Journal</li> <li>• Associate Editor at "International Journal of Automation and Control" - <a href="https://www.inderscience.com/jhome.php?jcode=jack">https://www.inderscience.com/jhome.php?jcode=jack</a> ESCI Journal</li> </ul>	<a href="https://doctorat.upg-ploiesti.ro/images/CV_Coordonatori/2026/Ingineria_sistemelor/BALAS_CV_European_Romana_2025_Valentina_Balas.pdf">https://doctorat.upg-ploiesti.ro/images/CV_Coordonatori/2026/Ingineria_sistemelor/BALAS_CV_European_Romana_2025_Valentina_Balas.pdf</a>
3	University professor skillful. PhD. <b>Luminita DUȚĂ</b>	<ul style="list-style-type: none"> <li>• Mega Journal of Business Research <a href="http://mjourneys.com/index.php/MJBR/about/editorialTeam">http://mjourneys.com/index.php/MJBR/about/editorialTeam</a> <a href="http://mjourneys.com/index.php/MJBR/about/editorialTeamBio/128">http://mjourneys.com/index.php/MJBR/about/editorialTeamBio/128</a></li> </ul>	<a href="https://doctorat.upg-ploiesti.ro/images/CV_Coordonatori/2026/Ingineria_sistemelor/DU%208%9A%C4%82_CV_Luminita_Duta_ro_actualizat.pdf">https://doctorat.upg-ploiesti.ro/images/CV_Coordonatori/2026/Ingineria_sistemelor/DU%208%9A%C4%82_CV_Luminita_Duta_ro_actualizat.pdf</a>
4	Associate professor. PhD in Engineering <b>Octavian IONESCU</b>	<ul style="list-style-type: none"> <li>• SRAIT Member</li> </ul>	<a href="https://doctorat.upg-ploiesti.ro/images/CV_Coordonatori/2026/Ingineria_sistemelor/IONESCU_CV_IONESCU_O_N.pdf">https://doctorat.upg-ploiesti.ro/images/CV_Coordonatori/2026/Ingineria_sistemelor/IONESCU_CV_IONESCU_O_N.pdf</a>
5	Prof. Dr. Eng. <b>Michaela stopped</b>	<ul style="list-style-type: none"> <li>• Associate Editor since 2008 at Revista <i>International Journal of Artificial Intelligence (IJAI)</i>. /SCOPUS <a href="http://ceser.in/ceserp/index.php/ijai/pages/view/eb-yes_and">http://ceser.in/ceserp/index.php/ijai/pages/view/eb-yes_and</a></li> <li>• Member of the editorial team of <i>the UPG Bulletin Ploiesti, SERIES technique</i> , member collective editorial office (since 2011) / EBSCO <a href="http://www.bulletin.upg-ploiesti.ro/content.jsp?page=79&amp;language=2&amp;pageType=T">http://www.bulletin.upg-ploiesti.ro/content.jsp?page=79&amp;language=2&amp;pageType=T</a></li> </ul>	<a href="https://doctorat.upg-ploiesti.ro/images/CV_Coordonatori/2026/Ingineria_sistemelor/OPREA_CV_Oprea_Mihaela_2025.pdf">https://doctorat.upg-ploiesti.ro/images/CV_Coordonatori/2026/Ingineria_sistemelor/OPREA_CV_Oprea_Mihaela_2025.pdf</a>

6	Associate professor. Dr. Eng. <b>Gabriel RĂDULESCU</b>	<ul style="list-style-type: none"> <li>• <b>Chemical Engineering Reviewer's Group Science Journal (CES), / WOS</b> <a href="http://www.journals.elsevier.com/chemical-engineering-journal/">http://www.journals.elsevier.com/chemical-engineering-journal/</a></li> <li>• <b>Member of the Reviewer's Group Chemical Engineering Communications (CEC), /WOS</b> <a href="http://www.tandfonline.com/toc/gcec20/current#.VO2ezXysV8E">http://www.tandfonline.com/toc/gcec20/current#.VO2ezXysV8E</a></li> <li>• <b>member Reviewer's Group. Journal of Cleaner Production , /WOS</b> <a href="http://www.journals.elsevier.com/journal-of-cleaner-production/">http://www.journals.elsevier.com/journal-of-cleaner-production/</a></li> </ul>	https://doctorat.upg-ploiesti.ro/images/CV_Coordonatori/2026/Ingineria_sistemelor/RADULESCU_0_CV_EUROPASS_Radulescu_Gabriel_RO_2025.pdf
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The scientific research, development and innovation activity had a strong upward trend. This evolution was supported mainly by the participation of doctoral supervisors from the Doctoral School of UPG Ploiesti, including from the field of **Systems Engineering**, in a significant number of national and international research/institutional development/human resources grants.

This aspect demonstrates the ability of doctoral supervisors to attract additional financial resources through grants, which leads to increased research activities and/or professional development of doctoral students.

In the doctoral field of **Systems Engineering**, the research/grant/training contracts presented in table A-4 were carried out with the involvement of the doctoral supervisors:

**Table A-4.** List of research contracts in the field of **Systems Engineering** from the last 5 academic years

Doctoral supervisor/ Role/ Names of involved doctoral students	Contract topic/Contract No.	Beneficiary	Execution time
Ionescu Octavian Member/ Portoacă Alexandra	Hybrid system for energetic efficiency using geothermal energy, applied in UPG campus in Ploiesti / Contract no. 2019/107379, <b>1,594,670</b> EURO <a href="https://www.eeagrants.ro/files/upload-dir/481-tabel-energie.pdf">https://www.eeagrants.ro/files/upload-dir/481-tabel-energie.pdf</a>	EEA and Norway Grants	2020 - 2024
Ionescu Octavian Partner Manager	<i>GEREMP. "Electromagnetic Pulse Ammunition" Contract 01 PSCD 2024</i> <i>Project obtained through a competition on the Solutions axis for the Ministry of National Defense</i>	MND	2024-2027
Ionescu Octavian Team member	<i>SAMPLE-3 ASPIICS OPSE HARWARE – Contract No. 4000111522 / 14 / NL / GLCESA OPSE, ANNEX 2 Contract with a cash value of 450,000 Euro (2016-2023)</i> <a href="https://www.eoportal.org/satellite-missions/proba-3">https://www.eoportal.org/satellite-missions/proba-3</a>	ESA	2016-2023
Ionescu Octavian Team member	<i>Arm neuroprosthesis equipped with artificial skin and sensorial feedback”, EEA-RO-NO-2018-0390</i> Call name: EEA Grants - Collaborative Research Projects EEA-RO-NO-2018-0390 2019 – 2023 <a href="https://www.armin-see.eu">https://www.armin-see.eu</a>	EEA and Norway Grants	2019 – 2023
Ionescu Octavian Team member (work package leader)	NerveRepack. Intelligent neural system for bidirectional connection with exoprostheses and exoskeletons <a href="https://www.nerverepack.eu/about-the-project">https://www.nerverepack.eu/about-the-project</a>		2023-2027

## Patents granted in the period 2020-2026

1. Constantinescu Z , **Ionescu O** , Ionescu C, Vladioiu M, Patent no. RO 133285, Pressure sensor system included in the structure of the rocket engine nozzle, Granted by the State Office for Inventions and Trademarks – OSIM Romania

[https://www.osim.ro/images/Publicatii/Inventii/2024/bopi\\_inv\\_08\\_2024.pdf](https://www.osim.ro/images/Publicatii/Inventii/2024/bopi_inv_08_2024.pdf)

2. **Ionescu Octavian** , Zoran Constantinescu, Ionescu Gabriela, Vladioiu Monica, Patent no. 133286 System and method for measuring the regression rate for solid fuels made through 3D printing technology

[https://osim.ro/images/Publicatii/Inventii/2025/bopi\\_inv\\_06\\_2025.pdf](https://osim.ro/images/Publicatii/Inventii/2025/bopi_inv_06_2025.pdf)

### *Indicator IPA3.1.2 The HSE ensures the professional and personal development of staff.*

The University of Petroleum and Gas of Ploiești, through IOSUD - UPG and the doctoral field of **Systems Engineering**, encourages the publication of articles in WOS indexed journals in Q1 and Q2 by paying the fees related to the articles of doctoral supervisors and doctoral students.

In the last 3 years, 2023,2024 and 2025, the Petrol-Gaze University of Ploiești organized [https://www.ace.upg-ploiesti.ro/doctorat/Gala\\_cercetarii.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Gala_cercetarii.pdf) at which both the teaching staff with notable results and the most deserving doctoral students were awarded. In 2024, in the doctoral students section, **the first prize** was obtained by stud. drd. Bălaș (Rad)n Dana Veronica ( [https://www.ace.upg-ploiesti.ro/doctorat/Diploma\\_gala\\_cercetarii\\_2024.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Diploma_gala_cercetarii_2024.pdf) ). and in 2025, in the doctoral students section, **the first prize** was obtained by stud. drd. Lasc (Petcuț) Anca Adriana, ( [https://www.ace.upg-ploiesti.ro/doctorat/Diploma\\_gala\\_cercetarii\\_2025.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Diploma_gala_cercetarii_2025.pdf) ) both PhD students in the field of **Systems Engineering**

### **Standard SA3.2. Recruitment procedures for teaching staff comply with legal provisions**

#### *Indicator IPA3.2.1 Recruitment procedures are in accordance with legal provisions, established and carried out transparently.*

In IOSUD - UPG Ploiesti there is and applies **the Methodology regarding the automatic recognition of the quality of doctoral supervisor obtained in higher education or research and development institutions abroad** ( <https://doctorat.upg-ploiesti.ro/images/Methodologii/2026/R-07-01-RECUNOASTEREA-AUTOMATA-A-CALITATII-DE-CONDUCTOR-DE-DOCTORAT-OBTINUTE-IN-INSTIUTII-DE-INVATAMANT-SUPERIOR-SAU-DE-CERCETARE-DEZVOLTARE-DIN-STRAINATATE.pdf> ). The organization and conduct of the affiliation process and the granting of membership of the Doctoral School within IOSUD-UPG is carried out according to **the Regulation on the public defense of habilitation theses and the co-optation of doctoral supervisors at the Petrol - Gaze University of Ploiesti** ( [https://doctorat.upg-ploiesti.ro/images/Methodologii/2026/R07.06\\_4.0\\_REGULAMENTUL-PRIVIND-SUSTINEREA-PUBLICA-A-TEZELOR-DE-ABILITARE.pdf](https://doctorat.upg-ploiesti.ro/images/Methodologii/2026/R07.06_4.0_REGULAMENTUL-PRIVIND-SUSTINEREA-PUBLICA-A-TEZELOR-DE-ABILITARE.pdf) ). On the doctoral school website at [Announcements of public habilitation thesis defenses - Doctoral School - UPG Ploiești](#), the announcement of the habilitation thesis defense is posted (for example, for Prof. Ionescu Octavian Narcis - habilitation for the field of Systems Engineering: <https://doctorat.upg-ploiesti.ro/abilitare/anunturi-sustineri-publice-teze-de-abilitare/29-2020-abilitare-anunturi/163-teza-de-abilitare-ionescu-octavian-2> )

After obtaining the qualification certificate, under art.3 (a) and (b), art.7(1), art.14 (a),(b),(c), (d), art.(15) and art.(16) from Regulation **R 07.06** are specified the conditions regarding the organization and conduct of the affiliation process and granting of membership of the Doctoral School within IOSUD-UPG. The Doctoral School Council appoints a commission that verifies the file of the

candidate who wishes to affiliate and in case of its favorable opinion in the *CSD meeting*, affiliation is proposed, then it is validated in *CSUD* and approved in the University Senate of UPG Ploiesti.

Doctoral supervisors are subject to internal and external review at intervals not exceeding 5 years. The **Regulation on the organization and conduct of doctoral studies at the University of Petroleum and Gas of Ploiești at art.50** (1), (2), (3) and (4) ( [https://www.upg-ploiesti.ro/sites/default/files/prezentare/regulamente/2024/R%2007\\_05%20Regulamehttps://doctorat.upg-ploiesti.ro/images/Metodologii/2026/R-07\\_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf](https://www.upg-ploiesti.ro/sites/default/files/prezentare/regulamente/2024/R%2007_05%20Regulamehttps://doctorat.upg-ploiesti.ro/images/Metodologii/2026/R-07_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf) ) provides for these requirements regarding the evaluation of doctoral supervisors, and disaffiliation is proposed by the CSD through the **Regulation of the doctoral school of the University of Petroleum and Gas of Ploiești at art.14(3) and art 31((1), (2) and (3).**

Disaffiliation from the Doctoral School of IOSUD-UPG can be done as follows:

- (1) At the request of the doctoral supervisor.
- (2) Following a notification received from the Ethics Committee of UPG-Ploiești regarding the violation of ethical norms by an affiliated doctoral supervisor.
- (3) Upon finding that the minimum standards established by CNADTCU are not met on the date of submission of a new self-evaluation report, but not more than 5 years later. ( [https://doctorat.upg-ploiesti.ro/images/Metodologii/2026/01-R-07.08\\_3.0-Regulemnt de organizare si functionare a Scolii doctorale.pdf](https://doctorat.upg-ploiesti.ro/images/Metodologii/2026/01-R-07.08_3.0-Regulemnt de organizare si functionare a Scolii doctorale.pdf) ).

#### Criterion A.4. Digitalization of institutional processes

**Standard SA4.1. Digital Transformation** The digital transformation process at the organizational level aims to simplify administration and increase the quality of services offered to members of the community and third parties.

*Indicator IPA4.1.1 The organizational component uses IT tools within its own procedures in order to improve access and ensure quality services for members of its own community and indirect beneficiaries of education.*

At the Petrol-Gaze University of Ploiesti, there is and is being implemented the project [\*\*DIGITALIZATION OF STUDENT ACTIVITIES AT THE PETROLEUM-GAZE UNIVERSITY OF PLOIESTI\*\*](#), code 330917348, within the NATIONAL RECOVERY AND RESILIENCE PLAN ( **PNRR** ), Component 15 - Education, Reform 5: Adoption of the legislative framework for the digitalization of education, Investment 16: Digitalization of universities and their preparation for the digital professions of the future.

Also in the Petrol-Gaze University of Ploiesti there is an information system for the record of doctoral students and their academic career. The application aims to manage data related to doctoral students and doctoral supervisors of the Doctoral School of IOSUD - UPG Ploiesti. There are supervisors, doctoral students, academic integrity and guidance committees, exams, papers and deadlines for their defense. Also, the Didactic Information System (SID) allows the nominal introduction by doctoral supervisors of nominal acquisitions for each doctoral student per year of study. The program interface is interactive and allows the introduction of new data, modification of existing data, as well as the generation of the main reports, in RTF and Excel format.

The main database forms are illustrated in the table below:

" **ACADEMICS. Centralized Application for Educational Data Administration, Integrated Management and Scientific Research** " is currently being implemented .

Also in the sphere of IT tools is the existence of the plagiarism detection software system at the Petrol-Gaze University of Ploiesti – [SISTEMANTIPLAGIAT.RO](http://SISTEMANTIPLAGIAT.RO). The procedure regarding the organization and conduct of the public session for the defense of the doctoral thesis, provides, within the preliminary operations of submitting the thesis to the doctoral secretariat, that the doctoral student submits the doctoral thesis in digital format together with the request regarding the initiation of the procedures for analyzing similarities and evaluating the thesis by the guidance committee. The doctoral secretariat transmits the doctoral thesis in its final electronic form for performing the similarity analysis using the sistemantiplagiat.ro software application. The similarity report is submitted to the doctoral supervisor within a maximum period of 30 days, and he draws up the resolution regarding the similarity report. Doctoral students can request this verification 2 times during their doctoral internship and for a modest fee of 25 lei as many times as they wish. All doctoral theses starting with April 2016 are subject to anti-plagiarism verification. These reports are uploaded to the Integrated Educational Register platform of the Ministry of Education and Research for all defended doctoral theses. Starting with the academic year 2022-2023, doctoral students' research reports are also subject to similarity checks. At the Doctoral School secretariat, in the doctoral students' files, as well as in electronic format, reduced and extended similarity reports for all doctoral theses starting with April 2016, and starting with 2022, also reduced reports related to research reports.

In conclusion, the University of Petroleum and Gas of Ploiești has a solid institutional capacity, supported by the experience and competence of the doctoral supervisors in the field of Systems Engineering. Their quality is reflected in the relevant research activity, scientific publications and involvement in national and international projects. The Department of Automation, Computers and Electronics actively contributes through the teaching and research infrastructure to the development of doctoral programs

## ***DOMAIN B. Educational effectiveness***

### **Criterion B.1. Content and relevance of study programs**

**Standard SB1.1. Content of the study program(s). The study program is based on a curriculum that aims to achieve the expected learning outcomes by students.**

***Indicator IPB1.1.1 The university study program is developed and structured in relation to the expected learning outcomes and is organized on the basis of transferable study credits. It encompasses the totality of learning, teaching, practical training, research and assessment experiences that together lead to a university qualification.***

*Individual Plan of [the Program University training Advanced \( PPA \)](#)*, completed within the Doctoral School of IOSUD-UPG for the doctoral field **of Systems Engineering** aims to deepen *the* theoretical and applied knowledge of the doctoral student and is focused on ensuring the prerequisites for the successful *implementation* of the [Individual Scientific Research Program \( PCS \)](#) and for the acquisition of advanced skills specific to the doctoral university studies cycle. Within the *PPA* drawn up by the doctoral supervisor in consultation with the doctoral student, the latter must pass exams in 3 subjects, one from each category of the curriculum (mandatory subjects - *Ethics and Academic Integrity* , *a advanced knowledge discipline* and *a complementary discipline* ) . Each discipline followed by the doctoral student is credited with a number of credits according to the curriculum. The doctoral student must accumulate 30 credits from this activity. The curriculum for the doctoral field **of Systems Engineering** can be found at

<https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineria-sistemelor>

and compact at

[https://www.ace.upg-ploiesti.ro/doctorat/plan\\_inv\\_ingineria\\_sistemelor\\_2025\\_2026.pdf](https://www.ace.upg-ploiesti.ro/doctorat/plan_inv_ingineria_sistemelor_2025_2026.pdf)  
was approved by [the Senate Decision of the University of Petroleum and Gas No. 12 of 22.07.2025](#) .

The sheets related to the subjects in the Curriculum that were approved [in the CSUD meeting on 03.09.2025](#) were prepared according to *ARACIS regulations* . The sheet for each discipline can be found at <https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineria-sistemelor> and in compact version at

[https://ace.upg-ploiesti.ro/doctorat/Fise\\_discipline\\_domeniu\\_Ingineria\\_Sistemelor\\_2025\\_2026.zip](https://ace.upg-ploiesti.ro/doctorat/Fise_discipline_domeniu_Ingineria_Sistemelor_2025_2026.zip) .

[The holders of the disciplines in the Curriculum](#) are doctoral supervisors in the field of Systems Engineering, or have a doctorate in this field, with the exception of the holder of the discipline *Ethics and Academic Integrity* ). As a result of promoting the 3 disciplines in *the PPA* , doctoral students must acquire skills, abilities, responsibility and autonomy.

**a) There is at least one discipline dedicated to ethics in scientific research and intellectual property or well-defined themes on these topics within a discipline taught in the doctoral program.**

The doctoral school and the doctoral supervisor are obliged to inform the doctoral student about scientific, professional and academic ethics and at the same time to monitor and verify their compliance, both during the doctoral research and in the writing and finalization of the doctoral thesis. The training offer during the doctoral internship includes aspects related to research ethics, scientometrics and academic writing. This is correlated with strategies and procedures for quality assurance focused on preventing academic fraud and resolving situations of violation of academic ethics. Within the UPG of Ploiesti, two methodologies can be mentioned, namely: <https://www.upg-ploiesti.ro/wp-content/uploads/2026/02/R-01-01-CODUL-DE-ETICA-SI-DEONTOLOGIE-UNIVERSITARA.pdf> respectively

<https://www.upg-ploiesti.ro/wp-content/uploads/2024/11/STRATEGIA-DE-PREVENIRE-SI-COMBATERE-A-FENOMENULUI-DE-PLAGIAT-in-UPG-1.pdf> .

In the curriculum of the doctoral field of Systems Engineering there is the mandatory discipline [Ethics and Academic Integrity](#) . Regarding compliance with research ethics, it is worth mentioning that both the doctoral thesis (which is submitted on the [Integrated Educational Registry - REI](#) ) and the research reports are subject to similarity checks.

**b) Mechanisms are created to ensure that the training program based on advanced university studies, related to the field being evaluated, targets "learning outcomes", specifying the competencies, skills, responsibility and autonomy that doctoral students should acquire after completing each discipline or through research activities.**

At the level of the University of Petroleum and Gas of Ploiești and IOSUD-UPG there is an internal mechanism through which study programs, including doctoral ones, are initiated, approved, monitored and evaluated, namely [the Quality Assurance Code of the University of Petroleum and Gas of Ploiești](#) . Also in [the Regulation on the organization and functioning of the University of Petroleum and Gas of Ploiești](#) , , in art.20, (2) the main attributions of the Council for Doctoral Studies (CSUD) are specified, namely: a) establishes the IOSUD-UPG strategy; b) develops the institutional regulation for the organization and development of doctoral university study programs at the IOSUD-UPG level; c) develops other proposals for regulations or measures regarding doctoral university studies at the UPG; d) approves the decisions regarding the establishment and dissolution of doctoral schools within the IOSUD-UPG, at the proposal of the Rector and with the approval of the UPG Senate; e) approves the composition of a newly established doctoral school; f) approves the curriculum for the advanced university training program (PPA) regarding the disciplines at the IOSUD-UPG level; g) approves the positions at the IOSUD-UPG level; h) approves the committees for the public defense of doctoral theses; i) approves the regulations of the doctoral schools; j) mediates conflicts between the doctoral student and the doctoral school; k) other specific duties, established by the institutional regulation for the organization and conduct of doctoral university study programs, according to the law.

**In the Regulation on the organization and conduct of doctoral studies at the Petroleum and Gas University of Ploiești** , existing in three versions, namely:

[Regulation on the organization of doctoral studies \(valid for doctoral students enrolled before 2019-2020\)](#) ,

[Regulation on the organization of doctoral studies \(valid for doctoral students enrolled starting with 2019-2020\)](#) and

[Regulation on the organization of doctoral studies 2024](#) ,

It is specified that the Doctoral University Study Programs are organized and carried out in IOSUD - UPG only within the doctoral schools. A doctoral school is organized and operates within IOSUD-UPG with at least three doctoral supervisors in the same doctoral field., of which at most one third of the doctoral supervisors of a doctoral school may come from other university or research institutions in the country or abroad. Within IOSUD-UPG there is a single [multidisciplinary Doctoral School](#) with three active doctoral fields, including **Systems Engineering** . For the doctoral field **Systems Engineering** ( <https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineria-sistemelor> ) There are six doctoral supervisors, two of whom come from other universities in Romania. The doctoral school regulations are developed, modified, and updated by the Doctoral School Council ( *CSD* ). *The CSD establishes, in consultation with all doctoral supervisors, the structure and content of the Individual Plan of the Advanced University Training Program ( PPA ) and the Scientific Research Program ( PCS ) . For each* doctoral student, *the PPA and PCS* are attached to the study contract.

Within *the PPA*, the doctoral student must pass the exam in 3 subjects, one from each category of the curriculum ( *mandatory subject - Ethics and Academic Integrity , advanced knowledge subjects and complementary subjects* )

Each discipline in the Curriculum ( [https://www.ace.upg-ploiesti.ro/doctorat/plan\\_inv\\_ingineria\\_sistemelor\\_2025\\_2026.pdf](https://www.ace.upg-ploiesti.ro/doctorat/plan_inv_ingineria_sistemelor_2025_2026.pdf)

or compact to

<https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineria-sistemelor> ) followed by the doctoral student is credited with a number of credits named in the plan, which are granted if the grade **ADMIS was obtained in the respective discipline** . The doctoral student must accumulate 30 credits from following *the PPA*. For each discipline there is a *discipline sheet* to which in section 4 - *Learning outcomes* references are made to *Knowledge, Skills, Responsibility and Autonomy*.

For example in the document

[https://www.ace.upg-ploiesti.ro/doctorat/Exemplu\\_Fisa\\_disciplina\\_pentru\\_PPA\\_domeniu\\_doctorat\\_Ingineria\\_Sistemelor.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Exemplu_Fisa_disciplina_pentru_PPA_domeniu_doctorat_Ingineria_Sistemelor.pdf)

presents a discipline sheet from the *Advanced Knowledge module* . At <https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineria-sistemelor> the sheets of all disciplines can be found.

Research Program ( *PCS* ) includes 3 research reports, each of which is in line with the doctoral student's doctoral thesis. Following the research described in these reports, the doctoral student acquires experience and skills useful for the completion of the doctoral thesis. For each research report, *30 Transferable Credits (ECT) are awarded*. The research report that is defended before the *Academic Guidance and Integrity Committee* and the *Doctoral Supervisor* is accepted if it receives one of the following grades: *Very good, Good, Satisfactory* .

During the doctoral internship, each doctoral student prepares an annual activity report, to the following address: [https://www.ace.upg-ploiesti.ro/doctorat/Rapoarte\\_studen%C8%9Bi\\_Domeniu\\_IS.zip](https://www.ace.upg-ploiesti.ro/doctorat/Rapoarte_studen%C8%9Bi_Domeniu_IS.zip)

presenting examples of annual research reports. Also annually, a synthetic report for the Systems Engineering field is submitted to the Doctoral School Council, in the document at [https://www.ace.upg-ploiesti.ro/doctorat/Exemplu\\_Raport\\_de\\_activitate\\_domeniu\\_doctorat\\_Ingineria\\_Sistemelor.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Exemplu_Raport_de_activitate_domeniu_doctorat_Ingineria_Sistemelor.pdf) the report for 2024 being presented.

reports of the Doctoral School can be accessed at [Methodologies, regulations and legislation – Petrol-Gaze University of Ploiești](#) (annual reports 2019, 2020, 2021, 2022, 2023, 2024)

The Quality Management Service (SMQ) of UPG, through accredited auditors, also audits the Doctoral School annually, and the annual reports can be found at <https://www.upg-ploiesti.ro/index.php/ro/raport-anual-de-activitate> . In the AEROQ audit 2020 and from 2025, IOSUD-UPG and the Doctoral School were also audited, as can be seen from the document [https://www.ace.upg-ploiesti.ro/doctorat/Audit\\_AEROQ\\_2020\\_si\\_2025.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Audit_AEROQ_2020_si_2025.pdf) .

**c) Throughout the entire duration of the doctoral training period, doctoral students in the field benefit from the advice/guidance of functional guidance committees, reflected through guidance and written feedback or regular meetings.**

The academic guidance and integrity committees are organized according to the regulations of the Regulation on the organization and conduct of [doctoral studies at the Petrol – Gaze University of Ploiești](#) , which complies with the provisions [of the Order of the Minister of Education No. 3020 of 2024](#) :

The scientific research activity of the doctoral student is carried out under the guidance of the doctoral supervisor, supported by *the Academic Guidance and Integrity Commission (CIIA)* . This commission is made up of 3 members, who may be part of the doctoral supervisor's research team, other persons affiliated with the doctoral school, or teaching staff, and at least one member is from outside IOSUD UPG. The composition of *the CIIA* is established by the doctoral supervisor, following consultation with the doctoral student. within 30 calendar days from the doctoral student's enrollment.

*CIIA* ensures coherently and continuously throughout the entire period of advanced university studies carried out by each doctoral student the activity of guiding the preparation of doctoral students for the public defense of doctoral theses. During the first academic year, the doctoral supervisor and *CIIA* permanently provide information and suggestions to each doctoral student regarding scientific documentation and scientific research methodologies appropriate for the preparation of the future doctoral thesis. In years II-IV, both the research reports and the defense of the doctoral thesis will be coordinated by the doctoral supervisor, directly supported by *CIIA*. *Active* involvement of members *CIIA* , in coordinating the activity of doctoral students, is also proven through joint publications and/or scientific communications of the doctoral student with at least one of the members of the academic guidance and integrity committee.

In the doctoral field of **Systems Engineering** [The committees are appointed at the proposal of the doctoral supervisor](#) with *the CSD visa* by [the Rector of the Petrol \\_Gaze University of Ploiești](#) within 30 calendar days from the registration of the doctoral student. *CIIA members* are part of [the committees for the defense of research reports](#) and the pre-defense of the doctoral thesis.

## **Criterion B.2. Concordance between curriculum and qualification**

**Standard SB2.1. Concordance with the level of qualification and the targeted competencies** In the process of curriculum design and development, the organizational component aims to ensure the level of qualification and correlation with the targeted occupations.

*Indicator IPB2.1.2 The expected learning outcomes are correlated with the competences required by the corresponding occupations, according to occupational standards and/or the European Classification of Occupations (ESCO).*

When preparing the Course Sheets from the curriculum of the doctoral field of **Systems Engineering** (

<https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineria-sistemelor> it was taken into account to fulfill the conditions regarding the learning outcomes contained in the ARACIS standards

<https://www.aracis.ro/wp-content/uploads/2025/06/Standarde-specifice-studii-universitare-de-doctorat.pdf>, )

In the case of doctoral university study programs, the learning outcomes are consistent with level 8 of the *National Qualifications Framework (NQF)*, as follows : Knowledge at the most advanced level in a field of work or study and knowledge at the border between different fields; skills provide the most advanced and specialized skills and techniques, including the ability to synthesize and evaluate, necessary to solve critical research and/or innovation problems and to extend and redefine existing knowledge or professional practices; and for responsibility and autonomy, it ensures the demonstration of a high level of authority, innovation, autonomy, scientific and professional integrity and a sustained commitment to the development of new ideas or processes at the forefront of a work or study situation, including research.

For the field of **Systems Engineering**, *the Advanced University Studies Program (AUP)* is complemented by both *the Scientific Research Program (SRP)* and the articles produced and published by the doctoral student so that he or she can complete his or her doctoral thesis.

### **Criterion B.3. Student-centered learning, teaching and assessment**

**Standard SB3.1 Principles The organizational component implements the principles of student-centered learning.**

***Indicator IPB3.1.1 The organizational component ensures the implementation of student-centered learning principles within the curriculum and through the teaching strategies used in learning and teaching activities and experiences***

The sheets for each discipline in the Curriculum of the doctoral field of **Systems Engineering** (<https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineria-sistemelor>), were created in accordance with Bloom's taxonomy (doctoral students obtaining knowledge, acquiring skills and having responsibilities and autonomy).

*By the Regulation on the organization and conduct of doctoral studies at the Petroleum - Gas University of Ploiești*

( [https://doctorat.upg-ploiesti.ro/images/Methodologii/2026/R-07\\_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf](https://doctorat.upg-ploiesti.ro/images/Methodologii/2026/R-07_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf) ), *The regulation on the organization and functioning of the doctoral school within IOSUD - Petrol-Gaze University of Ploiești*, the doctorate is mainly focused on the doctoral student.

In this regard, each doctoral student has a doctoral supervisor, a personal Academic Guidance and Integrity Committee (CIIA), its members being researchers with studies and research in the field of the doctoral student's thesis. Each doctoral student has his own study and research programs, established by *the PPA* and the respective *PCS*, which are also annexes to the doctoral student's contract. *The dates for taking the exams and research reports are set by the doctoral student, with the agreement of the supervisor and the examination or report committee, by completing an application by the doctoral student* [https://www.ace.upg-ploiesti.ro/doctorat/F\\_150\\_Cerere\\_sustinere\\_examen\\_si\\_raport\\_cercetare.pdf](https://www.ace.upg-ploiesti.ro/doctorat/F_150_Cerere_sustinere_examen_si_raport_cercetare.pdf)

After taking an exam or a research report, a report is drawn up, which records recommendations from the supervisor, the CIIA members, and the members of the Automation, Computers and Electronics department present at the defenses.

***Indicator IPB3.1.2 The organizational component provides students with opportunities to participate in academic mobility programs, carried out with physical and/or virtual presence.***

The Petroleum and Gas University of Ploiești has concluded partnership agreements within the Erasmus+ Project. and within the Norwegian grants there are agreements with the University of Stavanger, Norway, Norce Institute, Norway and Reykiavik University-Iceland.

**Systems Engineering** PhD field has been present in Erasmus+ exchanges and has a presence in international conferences and symposia. Within this field, PhD students in the last 5 years have participated as authors or co-authors with articles at international conferences.

From the document presented at

[https://www.ace.upg-ploiesti.ro/doctorat/Lista\\_lucrarilor\\_prezentate\\_la\\_conferinte\\_2021\\_2026.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Lista_lucrarilor_prezentate_la_conferinte_2021_2026.pdf)

, it follows that for the doctoral field of **Systems Engineering**, there have been **74 participations** in the last 5 years .

Also in an international context, doctoral students in the field of doctoral studies in **Systems Engineering** participated in lectures given by internationally renowned experts at conferences including:

<https://www.ecai.ro/organizers> ,

<https://icstcc2025.utcluj.ro> ,

<https://25.cscs-conference.com/>

[Erasmus+ Week - Yeditepe University in Istanbul, Turkey](#) , [3D FUTURE IN YOUR HANDS 2025 SAIPEM Romania - Internship Opportunity 2025 August 18 - September 26](#)

<https://ls.upg-ploiesti.ro/anunturi/a-doua-zi-a-conferintei-epc-tks-2025>

<https://ls.upg-ploiesti.ro/anunturi/ethica-cercetarii-intre-conformitate-si-constiinta-academica-prelegere-prof-univ-dr-alis-oancea> ,

<https://ls.upg-ploiesti.ro/anunturi/atelier-aplicat-dileme-etice-in-cercetare-prof-univ-dr-alis-oancea>

<https://www.upg-ploiesti.ro/ro/invitatie-si-program-erasmus-week>

Doctoral students benefit from the possibility of doing research internships, access to the infrastructure of equipment in partner companies. The document [https://www.ace.upg-ploiesti.ro/doctorat/Lista\\_parteneriate\\_stiintifice.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Lista_parteneriate stiintifice.pdf) presents Universities from Romania and abroad with which the Faculty of Mechanical and Electrical Engineering, including the doctoral field of **Systems Engineering**, has partnership agreements. The document at

[https://www.ace.upg-ploiesti.ro/doctorat/Lista\\_societatilor\\_comerciale\\_partenere.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Lista_societatilor_comerciale_partenere.pdf) presents commercial companies with which the Petroleum and Gas University of Ploiesti, Faculty of Mechanical and Electrical Engineering, has partnership agreements, and at the address

[https://www.ace.upg-ploiesti.ro/doctorat/Acord\\_de\\_parteneriat.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Acord_de_parteneriat.pdf) presents an example of an agreement .

Regarding the Erasmus+ partnership agreements to which doctoral students in the field of **Systems Engineering** also have access , these are presented at [https://www.ace.upg-ploiesti.ro/doctorat/Acorduri\\_ERAMSUS\\_plus.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Acorduri_ERAMSUS_plus.pdf) It is worth mentioning again that the doctoral field of **Systems Engineering** is scientifically assigned to the Department of Automation, Computers and Electronics within the Faculty of Mechanical and Electrical Engineering.

### **Standard SB3.2. Equity The organizational component ensures equitable opportunities for students**

*Indicator IPB3.2.1 The organizational component ensures equitable opportunities for students, in line with their potential and aspirations, taking into account the diversity of learning styles and abilities*

The Petrol-Gaze University of Ploiești supports the principles of the Lima Declaration (1988) ( <https://www.issai.org/pronouncements/intosai-p-1-the-lima-declaration/> ) on Academic Freedom and Autonomy of Higher Education Institutions, according to which:

- a) Everyone has the right to education;
- b) Education must aim at the development of human personality and dignity, support respect for human rights and fundamental freedoms and contribute to the maintenance of peace;
- c) All states must guarantee the right to education without any discrimination on the basis of race, colour, sex, language, religion, social or national origin, economic or other status.

The Oil and Gas University of Ploiești adhered to the principles formulated in the Magna Charta Universitatum (Bologna 1988) <https://www.upg-ploiesti.ro/wp-content/uploads/2025/03/CARTA-UPG-Ploiesti-2025.pdf> according to which:

- a) The university is an autonomous institution that produces, evaluates and transmits culture through research and education, which must be morally and intellectually independent of any political authority and economic power.
- b) To meet the demands of society and lead to scientific progress, education and research must be inextricably linked.
- c) Freedom in research and education is the fundamental principle of academic life.
- d) The university is the repository of the European humanistic tradition, respectively, the university is the space where cultural differences are valued and capitalized on and intercultural dialogue is supported.

At the address

( [https://doctorat.upg-ploiesti.ro/images/Admitere/2025/OFERTA\\_EDUCATIONALA\\_DOCTORAT\\_2025.pdf](https://doctorat.upg-ploiesti.ro/images/Admitere/2025/OFERTA_EDUCATIONALA_DOCTORAT_2025.pdf) )

The offer of places for doctoral studies for the academic year 2025-2026 is presented. As can be seen in this offer, there are distinct places for both Romanians from all over the world and for Roma.

For foreign doctoral students, they have the opportunity to study and defend their thesis in English. In the doctoral field of **Systems Engineering** in the last 5 academic years, there have been foreign doctoral students: Cao Minh Anh and Viet Nguyen Hoang, both from the Republic of Vietnam. Of the 21 doctoral students in internship in the field of **Systems Engineering** ( [https://doctorat.upg-ploiesti.ro/images/2026/Lista\\_doctoranzi\\_Ingineria\\_sistemelor.pdf](https://doctorat.upg-ploiesti.ro/images/2026/Lista_doctoranzi_Ingineria_sistemelor.pdf) ), it appears that 11 are female (over 50 %).

By The Regulation on the organization and conduct of doctoral studies at the Petrol – Gaze University of Ploiești ( [https://doctorat.upg-ploiesti.ro/images/Metodologii/2026/R-07\\_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf](https://doctorat.upg-ploiesti.ro/images/Metodologii/2026/R-07_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf) ), the doctorate is conducted for a period of 4 years with the possibility of extension by 1 or 2 years, and for good reasons, doctoral studies can also be interrupted. Of the 21 doctoral students in the Systems Engineering doctoral field, **one** is in the period of interruption of studies for raising and caring for a child and 6 are in periods of extension of studies, without payment of additional fees, with the approval of the CSD, CSUD and the University Senate.

#### **Criterion B.4. Accessibility and efficiency of resources and support services appropriate to learning**

**Standard SB4.1. Access to resources and services** The organizational component ensures access to adequate resources and support services in relation to student needs.

*Indicator IPB4.1.1 The organizational component ensures access for students, including those with special educational needs/disabilities, to resources and services designed to support the learning process, appropriate to individual learning needs, the field of study, the study cycle and the form of organization of the study program.*

The Petrol-Gaze University of Ploiești (UPG) offers a series of specific facilities and rights for students with disabilities or special needs, in accordance with the legislation in force, including special places upon admission and support measures, supported by [the Code of Rights and Obligations of Students at the Petrol-Gaze University of Ploiești](#).

Among the aspects related to the access of students with special needs to UPG, the following should be mentioned:

- **Admission Places:** Graduates with disabilities benefit from 25 special places annually at the Petroleum and Gas University of Ploiești.
- **Access to Infrastructure:** The University has taken measures to increase access, with the campus being equipped with modernized dormitories, and access to the main buildings being

adapted, such as the ground floor areas for administrative services ( <https://www.upg-ploiesti.ro/index.php/camine-studentesti> ). .

- **Educational Support (ID/IFR):** Students can access online learning resources through the upg-elearning.ro platform, facilitating distance learning for those who cannot travel constantly. Adequate tutorial support is also provided.
- **General Rights:** According to the Code of Student Rights and Obligations of UPG, students have the right to an inclusive environment.

Within the doctoral field of **Systems Engineering**, no students with disabilities have applied for admission in the last 5 academic years.

### Criterion B.5. Learning outcomes

#### Standard SB5.1. The definition and assessment of learning outcomes is carried out appropriately.

##### *Indicator IPB5.1.1 Learning outcomes are adequately described and support understanding of student and teacher expectations regarding the content of the subjects in the curriculum.*

Learning outcomes are described according to Bloom's Taxonomy, which is a hierarchical classification framework of educational objectives, used by teachers to structure the learning and assessment process. and are found in the subject sheets ( [Domain - Systems Engineering - Doctoral School - UPG Ploiești](#) ). [The Operational Procedure regarding the writing of learning outcomes, Code: PO 07.53 \( https://www.upg-ploiesti.ro/wp-content/uploads/2025/09/PO-07.53-Scrierea-rezultatelor-invatarii.pdf \)](#), is fully respected . In addition to the subjects in *the Advanced University Preparation Plan (PPA)*, doctoral students must also complete *the Scientific Research Program (PCS)*, the latter assuming the preparation and defense of research reports in accordance with the topic of the doctoral thesis. To defend the doctoral thesis, doctoral students in the Domain of *Systems Engineering* must meet the Minimum National Standards for the Award of the Doctoral Degree Specific to the CNATDCU Commission no. 15 - Computers, Information Technology, **Systems Engineering**, with the content at the address :  
( <https://www.edu.ro/sites/default/files/fisiere%20articole/OMEN%205110-2018.pdf> ).

##### *Indicator IPB5.1.2 Verification of the achievement of learning outcomes is carried out through mid-term evaluation exams and through final exams .*

Doctoral students enrolled in the first year are required to complete the Advanced University Preparation Program ( *PPA* ). Each exam within *the PPA* ( [https://www.ace.upg-ploiesti.ro/doctorat/F\\_395\\_Plan\\_individual\\_pregatire\\_universitara\\_avansata\\_doctorat\\_PPA.pdf](https://www.ace.upg-ploiesti.ro/doctorat/F_395_Plan_individual_pregatire_universitara_avansata_doctorat_PPA.pdf) ) is held in front of a committee consisting of the doctoral supervisor, the head of the discipline and another teaching staff in the discipline. An exam is passed if, following the examination, the committee grants the grade *Admitted* .

[The curriculum of the Systems Engineering field related to the PPA](#) It is structured in three sections, namely: the *fundamental discipline Ethics and Academic Integrity* for which **3** credits are awarded ; *advanced knowledge disciplines* , each of which is awarded **15** credits, and *complementary disciplines* , each of which is awarded **12** credits.

To take an exam within *the PPA* The doctoral student formulates a [request addressed to the Director of the Doctoral School](#) . The result of an examination is recorded in [a Minutes](#) to which is added the subject sheet, the content of the minutes signed by the members is brought to the attention of the doctoral student. After taking the exams within *the PPA*, the student must accumulate a minimum of **30** credits.

[The Individual Scientific Research Program - PCS involves](#) the defense of **3** research reports in front of the doctoral supervisor and the academic integrity and guidance committee. The defense

is public and the doctoral school informs [the Department of Automation, Computers and Electronics - ACE](#) (which has the doctoral field of **Systems Engineering** as its scientific affiliation). To defend a Research Report, the doctoral student formulates a [request addressed to the Director of the Doctoral School](#), a request in which the doctoral supervisor nominates the committee before which the report will be presented.

Additionally, the dean of the Faculty of Mechanical and Electrical Engineering is also part of the committee for supporting the 1st Research Report, which also contains the planning of activities within the research program ( *Gantt Chart* ), because the necessary equipment belongs to the university/IME faculty/ACE department - the doctoral school does not have its own assets.

A report is accepted if the committee has awarded one of the following grades: *very good, good, satisfactory*. The result of the defense of a Research Report is recorded in a [Minutes](#), signed by the members of the support committee and whose content is brought to the attention of the doctoral student. For each accepted Research Report a doctoral student receives **30** credits

During the preparation of a CIIA Research Report, together with the supervisor, the doctoral student is advised on the issues in the report, the document [https://www.ace.upg-ploiesti.ro/doctorat/Proces\\_verbal\\_Comisia\\_de\\_%C3%AEndrumare\\_nr\\_3\\_din\\_05\\_04\\_23.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Proces_verbal_Comisia_de_%C3%AEndrumare_nr_3_din_05_04_23.pdf) being instructive in this regard,

It is also worth mentioning that annually, doctoral students in the field of **Systems Engineering** prepare activity reports that are approved by the doctoral supervisor. At the address:

[https://www.ace.upg-ploiesti.ro/doctorat/Rapoarte\\_studen%C8%9Bi\\_Domeniu\\_IS.zip](https://www.ace.upg-ploiesti.ro/doctorat/Rapoarte_studen%C8%9Bi_Domeniu_IS.zip) activity reports for the year 2024 are presented. Also annually, an activity report for the field is presented to the Doctoral School Council, at [https://www.ace.upg-ploiesti.ro/doctorat/Exemplu\\_Raport\\_de\\_activitate\\_domeniu\\_doctorat\\_Ingineria\\_Sistemelor.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Exemplu_Raport_de_activitate_domeniu_doctorat_Ingineria_Sistemelor.pdf) the report for the year 2024 for the field of **Systems Engineering is presented**.

Within IOSUD-UPG, the pre-defense and defense of the doctoral thesis are regulated by Operational Procedure R07.42,

( <https://www.upg-ploiesti.ro/sites/default/files/doctorat/R%2007%2042%20aprobat%20Senat%202024.pdf> )

The thesis defense is carried out following [the request of the doctoral student](#) through public defense under the same conditions as research reports, (the defense committee being composed of the supervisor and members of the academic guidance and integrity committee). The committee members verify the fulfillment of *the Minimum National Standards for the Award of the Doctoral Degree*, standards provided for in Annex 15, part of OMEN no. 5110/2018.

( <https://www.edu.ro/sites/default/files/fisiere%20articole/OMEN%205110-2018.pdf> )

If the standards are not met, the pre-support cannot take place.

After the defense, the Academic Guidance and Integrity Committee issues an opinion ( [https://www.ace.upg-ploiesti.ro/doctorat/F\\_391\\_Aviz\\_comisie\\_indrumare\\_doctorat.pdf](https://www.ace.upg-ploiesti.ro/doctorat/F_391_Aviz_comisie_indrumare_doctorat.pdf) ) by *who approves/postpones/does not approve* the defense of the thesis in public session.

According to the updated Higher Education Law 199/2023 ( <https://legislatie.just.ro/public/DetaliiDocument/271898> ) - Title E art. 71-12, *The doctoral thesis and its annexes will be available for consultation for a period of 90 calendar days, before the public defense, on the national platform managed by UEFISCDI*. Before publishing the thesis, the doctoral student will sign a declaration of acknowledgement ( [https://www.ace.upg-ploiesti.ro/doctorat/F\\_696\\_Declaratie\\_luare\\_cunostinta\\_ca\\_teza\\_este\\_pe\\_platforma\\_nationala.pdf](https://www.ace.upg-ploiesti.ro/doctorat/F_696_Declaratie_luare_cunostinta_ca_teza_este_pe_platforma_nationala.pdf) )

After the 90 days have passed, CSUD issues a Report ( [https://www.ace.upg-ploiesti.ro/doctorat/F\\_715\\_Raport\\_CSUD\\_procedura\\_sus%C8%9Binere\\_publica\\_teza\\_doctorat.pdf](https://www.ace.upg-ploiesti.ro/doctorat/F_715_Raport_CSUD_procedura_sus%C8%9Binere_publica_teza_doctorat.pdf) ) through which *it validates/invalidates* the initiation of the procedure for the public defense of the doctoral thesis

The doctoral thesis is defended in front of a doctoral committee consisting of 5 members, appointed by Decision of the UPG rector at the proposal of the doctoral supervisor ( [https://www.ace.upg-ploiesti.ro/doctordat/F\\_154\\_Referat\\_numire\\_comisie\\_sustinere\\_teza\\_doctoranzi\\_inainte\\_de\\_2019.pdf](https://www.ace.upg-ploiesti.ro/doctordat/F_154_Referat_numire_comisie_sustinere_teza_doctoranzi_inainte_de_2019.pdf) ) ) Of the 5 members, at least two are from outside the Petroleum and Gas University of Ploiești according to operational procedure R07.42

( <https://www.upg-ploiesti.ro/sites/default/files/doctordat/R%2007%2042%20aprobat%20Senat%202024.pdf> ).

After the doctoral thesis is defended , [a report is drawn up](#), which is included in the supporting file. All these details are included in *the Regulation on the organization and conduct of doctoral studies at the Petrol – Gaze University of Ploiești* ( [https://doctordat.upg-ploiesti.ro/images/Metodologii/2026/R-07\\_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf](https://doctordat.upg-ploiesti.ro/images/Metodologii/2026/R-07_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf) ) and *the Regulation on the organization and functioning of the doctoral school within IOSUD – Petrol-Gaze University of Ploiești* ( [01-R-07.08\\_3.0-Regulemnt de organizare si functionare a Scolii doctorale.pdf](01-R-07.08_3.0-Regulemnt_de_organizare_si_functionare_a_Scolii_doctorale.pdf) ).

### **Criterion B.7. Procedures and practices regarding the admission competition, the course, recognition and equivalence of studies, as well as the certification of results**

#### **Standard SB7.1. Admission Admission procedures and principles ensure access to higher education.**

##### ***Indicator IPB7.1.1 The organizational component applies admission procedures .***

Admission to doctoral studies is carried out in accordance with [the Methodology for organizing and conducting the 2025 doctoral admission competition](#) . All information regarding doctoral admission is also posted on the website of UPG in Ploiesti and the Doctoral School ( [Admission - Doctoral School - UPG Ploiesti](#) ), namely:

- [Admission methodology](#)
- [Admission calendar](#)
- [Academic year structure](#)
- [List of doctoral supervisors - Admission places](#)
- [Required documents](#)
- [Admission topic](#)
- [Admission results](#)
- [Annual fees](#)

According to the Admission Methodology (updated annually), graduates of bachelor's or master's degree studies who have accumulated a minimum of 300 transferable credits ( *ECTS* ) can register for the admission competition. For each place put up for competition, there is an admission committee proposed by the field coordinator, endorsed in *the CSD* , approved in *the CSUD* , after which the rector issues the appointment decision. The admission competition consists of the analysis of the candidate's file and two tests that involve: the presentation by the candidate of an essay based on the proposed topic and the examination based on the bibliography. After taking these tests, the committee members ask questions, make recommendations and award grades to the candidate. All the aforementioned documents, including the admission catalogs, are archived at the doctoral school. After the exam, the admission results are communicated to the candidates and are posted on the doctoral school's website.

***Indicator IPB7.1.2 Admission to university study programs is carried out in compliance with the principles of equity and equal opportunities, as well as with the establishment of support measures to ensure access for vulnerable groups, those in situations of social and educational risk, including candidates with special educational needs and/or disabilities.***

IOSUD – UPG from Ploiești implements the principles of equity and equal opportunities, integrating concrete support measures for the admission of candidates from vulnerable groups, including those with special educational needs and/or disabilities. As presented in the indicators **Indicator IPA3.1.2** **Indicator IPA3.1.2** and **IPB4.1.1** special places for Roma are put up for competition and as the doctoral field of Systems Engineering was presented with examples, there is no discrimination and there are facilities provided to doctoral students. Doctoral students have the right to accommodation in the university dormitories. After obtaining the title of Doctor of Engineering in 2021, Viet Hoang Nguyen also benefited from 6 months of accommodation until he was able to leave Romania where there was a state of emergency. All doctoral students benefited and benefit from 7000 lei (budget) or 2500 lei (fee) for purchases, and the payment of travel to conferences and the publication of articles was also borne by the doctoral school.

According to the Institutional Regulations, doctoral students who have not yet publicly defended their doctoral thesis may benefit from forms of support such as **interrupting their studies** and granting an **extension period**. Interruption does not entail the payment of any fee, but during this period the doctoral scholarship is suspended, but it does not entail the payment of the study fee. The phrase "for good reasons" stipulated in art.39 (4) of GD no. 681/2011 implies that approval is granted only on the basis of a reasoned request, endorsed by the doctoral supervisor and approved by the Doctoral School Council. Possible examples of "good reasons": maternity, childcare leave, health problems, carrying out an activity for a period longer than one month abroad or in another locality, etc.

The grace period is granted in accordance with art. 40 of GD no. 681/2011 for a maximum of 2 years (24 months), only to doctoral students who have completed the doctoral program (including the normal 3-year period and any interruption and/or extension periods), but have not managed to complete and officially submit the doctoral thesis, and only after fulfilling the obligations in the individual plan (successfully defending all research reports and other activities provided for in the individual plan approved by the Doctoral School Council) and does not require payment of the study fee.

Usually, the interruption is requested and granted for a period of one year, and the grace period for a minimum of 6 months. At the addresses:

[https://www.upg-ploiesti.ro/sites/default/files/prezentare/hotarari%20senat/2023/204.%20\(13\)%20Hotarare%20Senat%20-%202020%20iulie%202023.pdf](https://www.upg-ploiesti.ro/sites/default/files/prezentare/hotarari%20senat/2023/204.%20(13)%20Hotarare%20Senat%20-%202020%20iulie%202023.pdf) and ,

[https://www.upg-ploiesti.ro/wp-content/uploads/2025/07/S35\\_H11-Hotarare-Senat-17-iulie-2025-fin-fin-fin.pdf](https://www.upg-ploiesti.ro/wp-content/uploads/2025/07/S35_H11-Hotarare-Senat-17-iulie-2025-fin-fin-fin.pdf)

The Senate Decisions granting extensions to doctoral students in the field of **Systems Engineering** in 2023 and 2025 can be found here .

### **Standard SB7.2. Student Academic Pathway**

**The organizational component carries out actions in support of the students' academic journey.**

**Indicator IPB7.2.1 The organizational component applies the regulations regarding the professional activity of students.**

After admission to the doctoral program, enrollment follows, and after enrollment, for each doctoral student in the field of **Engineering The systems** are prepared by the doctoral supervisor . [The Individual Program for Advanced University Preparation \(PPA\)](#) which is also signed by the student . The plan is approved by the Director of the CSD and submitted to the Doctoral School secretariat, being included in each doctoral student's file, a copy being also handed to the doctoral student.

The disciplines in *the PPA* aim to enrich the theoretical and applied knowledge of the doctoral student and are focused on ensuring the premises for the good development of the individual scientific research program and for the acquisition of advanced skills specific to the doctoral university studies cycle. Within the *PPA*, the doctoral student must pass exams in 3 disciplines, one from each category of the curriculum ( *mandatory discipline - Ethics and Academic Integrity*, *an advanced knowledge discipline in accordance with the doctoral student's topic* and *a complementary discipline* a). Each discipline followed by the doctoral student is credited with a number of credits, the doctoral student must accumulate 30 credits from this activity. The curriculum for the doctoral field **of Systems Engineering** can be found at <https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineria-sistemelor> or [https://www.ace.upg-ploiesti.ro/doctorat/plan\\_inv\\_ingineria\\_sistemelor\\_2025\\_2026.pdf](https://www.ace.upg-ploiesti.ro/doctorat/plan_inv_ingineria_sistemelor_2025_2026.pdf)

The exams related to *the PPA* are established by the doctoral supervisor in accordance with the doctoral topic. The subject sheets (exam programs) in *the PPA* emphasize the specifics of each doctoral topic. The exam programs are submitted to the Doctoral School secretariat, to be included in the file of each doctoral student and sent to them. The examination committees are made up of 3 members (the doctoral supervisor as president and 2 teaching staff members who are specialists in the examination discipline, including the holder of the discipline. At the address

( [https://www.ace.upg-ploiesti.ro/doctorat/F\\_152\\_Proces\\_verbal\\_examen\\_doctorat.pdf](https://www.ace.upg-ploiesti.ro/doctorat/F_152_Proces_verbal_examen_doctorat.pdf) ) a standardized document proving the passing of an exam is presented.

After completing *the PPA*, the doctoral student moves on to the next stage, which involves completing [the Scientific Research Program \(PCS\)](#). The doctoral student defends the Research Reports before a committee formed by members of the Academic Guidance and Integrity Committee and the doctoral supervisor, a committee approved by the Director *of the CSD*. After 2019, the first research report also includes the research project, which establishes the titles of the 3 Research Reports, their content, the publication plan, the experimental testing plan, the dates for the defense of the reports, the defense of the thesis in the department, as well as the date for the public defense of the doctoral thesis. At

( [https://www.ace.upg-ploiesti.ro/doctorat/F\\_153\\_Proces\\_verbal\\_raport\\_cercetare.pdf](https://www.ace.upg-ploiesti.ro/doctorat/F_153_Proces_verbal_raport_cercetare.pdf) )

the document proving the support of a research report is presented. The activity of each doctoral student is thus monitored through exams, research reports and the annual activity report

Doctoral University Studies Contract

( [https://www.ace.upg-ploiesti.ro/doctorat/F\\_299\\_Contract\\_studii\\_universitare\\_doctorat.pdf](https://www.ace.upg-ploiesti.ro/doctorat/F_299_Contract_studii_universitare_doctorat.pdf) )

and fee-paying students have a specific contract

[https://www.ace.upg-](https://www.ace.upg-ploiesti.ro/doctorat/F_300_Contract_anual_studii_universitare_doctorat_taxa.pdf)

[ploiesti.ro/doctorat/F\\_300\\_Contract\\_anual\\_studii\\_universitare\\_doctorat\\_taxa.pdf](https://www.ace.upg-ploiesti.ro/doctorat/F_300_Contract_anual_studii_universitare_doctorat_taxa.pdf) ) .

## **Criterion B.8. The internationalization process**

### **Standard SB8.1. Internationalization Increasing the quality of education and research through internationalization actions.**

***Indicator IPB8.1.1 The organizational component carries out international cooperation actions that support the mobility of members of its own community and collaboration in academic and research activity.***

Within the University of Petroleum and Gas of Ploiești, there are internationalization strategies

[https://www.upg-ploiesti.ro/wp-content/uploads/2024/09/strategie\\_internationalizare\\_varianta-finala.pdf](https://www.upg-ploiesti.ro/wp-content/uploads/2024/09/strategie_internationalizare_varianta-finala.pdf) which has as its *general*

*objective Increasing the international visibility and quality of education and scientific research processes by expanding cooperation with universities and other institutions or organizations from European Union countries and outside the European space* .

at <https://internationalizare.upg-ploiesti.ro/index.php/parteneriate-internationale/>. In addition to the partnerships in this list, it is worth mentioning the collaborations in the field of **Systems Engineering (Automatics)** with universities and institutes in Germany and Greece as follows:

Technical University of Clausthal ( <https://www.isse.tu-clausthal.de/>);

University of Stuttgart ( <https://www.isw.uni-stuttgart.de/en/>);

Otto von Guericke University of Magdeburg

( <https://www.ovgu.de/unimagdeburg/en/Otto+von+Guericke+University+Magdeburg-p-1.html>);

Max Planck Institute in Magdeburg ( <https://www.mpi-magdeburg.mpg.de/psd>);

Hellenic Mediterranean University Estavromenos ( <https://hmu.gr/en/hellenic-mediterranean-university-where-your-academic-future-begins-with-perspective/>);

Democritus University of Thrace ( <https://duth.gr/en/home-english/>).

The Petrol-Gaze University of Ploiesti has concluded partnership agreements within the Erasmus+ Project. Within the framework of Norwegian grants, there are agreements with the University of Stavanger, Norway, Norce Institute, Norway and Reykiavik University-Iceland ( <https://internationalizare.upg-ploiesti.ro/index.php/proiecte/> )

Doctoral field **Systems Engineering** was present in Erasmus+ exchanges, as evidenced by the reference

( [https://www.ace.upg-ploiesti.ro/doctorat/Mobilitati\\_Erasmus\\_Studenti\\_doctoranzi\\_domeniu\\_IS.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Mobilitati_Erasmus_Studenti_doctoranzi_domeniu_IS.pdf) ) in which mobilities of doctoral students within this program are presented. It is worth noting that doctoral student Cao Minh Anh, who received his PhD in Systems Engineering in 2021, completed a research internship at the Dung Quat Refinery in Vietnam ( <https://bsr.com.vn/web/bsr-eng/about-dung-quat-refinery> ).

PhD students in the field of **Systems Engineering** presented papers at scientific events (conferences and symposia) as shown in the document presented in the reference

( [https://www.ace.upg-ploiesti.ro/doctorat/Lista\\_lucrarilor\\_prezentate\\_la\\_conferinte\\_2021\\_2026.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Lista_lucrarilor_prezentate_la_conferinte_2021_2026.pdf) )

As presented in *Indicator IPA3.1.2* The University of Petroleum and Gas of Ploiești, through IOSUD-UPG and the doctoral field of **Systems Engineering**, encourages the publication of articles in WOS indexed journals by paying the fees for the articles of the doctoral supervisors and doctoral students. From the lists of works of the doctoral supervisors ( [Field - Systems Engineering - Doctoral School - UPG Ploiești](#) ),. Also the presence of doctoral supervisors in the doctoral field of **Systems Engineering** in the scientific committees of international conferences proves collaboration in academic and research activity.

One dimension of internationalization is represented by the initiative of inviting foreign experts (professors) with a recognized reputation to hold conferences (usually online) addressed to doctoral students in the field of **Systems Engineering** ). At

( [https://www.ace.upg-ploiesti.ro/doctorat/Invitatii\\_si\\_confirmari\\_profesori\\_straini.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Invitatii_si_confirmari_profesori_straini.pdf) )

The invitations and acceptances for three foreign experts (professors) are presented. A plan was developed for inviting international experts, which can be accessed at ( [https://www.ace.upg-ploiesti.ro/doctorat/Plan\\_invitare\\_experti\\_interna%C8%9Bionali.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Plan_invitare_experti_interna%C8%9Bionali.pdf) )

Upon request, letters of recommendation for employment are issued for prospective foreign doctoral students who have obtained a doctorate in the field of **Systems Engineering** . To the address

( [https://www.ace.upg-ploiesti.ro/doctorat/Recomandare\\_pentru\\_dr\\_ing\\_Nguyen\\_Hoang\\_Viet.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Recomandare_pentru_dr_ing_Nguyen_Hoang_Viet.pdf) )

a letter of recommendation from Mr. Dr.ing Viet Nguyen Hoang, a professor at the University of Hanoi (Vietnam) is presented. Also, for foreign citizens, graduates of higher education, who wish to pursue doctoral studies in the field of **Systems Engineering** , letters of recommendation can be issued, upon their request and after studying their file, for submission to the Ministry of Education

and Research). At the level of IOSUD, each year, 2 places for doctoral studies were requested for Romanians from all over the world.

The Petroleum and Gas University of Ploiești has partnership agreements within the Erasmus+ program presented in indicator **IPB3.1.2**.

### **Criterion B.9. Scientific research results**

**Standard SB9.1 Scientific Research in the Education Process Scientific research activities support students' acquisition of learning outcomes.**

***Indicator IPB9.1.1 Inquiry-based learning and outcomes research supports and is capitalized on in achieving the learning outcomes targeted by the study program.***

In the doctoral field of **Systems Engineering** for each doctoral student, *the Individual Program Plan Advanced University Preparation (PPA)* and *the Scientific Research Program (PCS)* are focused on the completion of the doctoral thesis.

For each doctoral student, the topic of *the PPA exams* for the disciplines in the **Systems Engineering curriculum** also involves aspects of bibliographic research in accordance with the objectives of the doctoral thesis.

Regarding the research program, the reports related to it are made as a result of scientific investigations, the material base of the Department of Automation, Computers and Electronics ([https://www.ace.upg-ploiesti.ro/doctorat/Dotari\\_laboratoare\\_ACE\\_2026.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Dotari_laboratoare_ACE_2026.pdf)), providing appropriate facilities.

**Standard SB9.2. Scientific research related to the objectives of the study program The organizational component carries out scientific research activities in accordance with the objectives of the evaluated study program.**

***Indicator IPB9.2.1 The results of scientific research are visible at national and international level in the respective scientific field and appropriately exploited.***

The scientific research, development and innovation activity has had a strong upward trend in recent years. This evolution was supported mainly by the participation of doctoral supervisors from the Doctoral School of UPG Ploiesti in a significant number of research/institutional development/human resources grants, both national and international.

This proves the ability of doctoral supervisors to attract additional financial resources through grants, which leads to increased research activities and/or professional development of doctoral students.

At the address

([https://www.ace.upg-ploiesti.ro/doctorat/Productie\\_stiintifica\\_ultimii\\_5\\_ani.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Productie_stiintifica_ultimii_5_ani.pdf))

scientific publications and research contracts carried out by doctoral supervisors in the field of **Systems Engineering**. It is important to emphasize that the scientific activity of Ms. **Prof. univ. habil. dr. ing. BĂLAȘ Valentina Emilia** was recognized and rewarded by *the Romanian Academy of Scientists* with the **Ștefan Odobleja Prize for 2021** for the work *Habdbook of deep learning in biomedical engineering: techniques and applications* and for the work *Nonlinear Control for Blood Glucose Regulation of Diabetic Patients: An LMI Approach* he received the **Ștefan Odobleja Award** and the **AGIR Diploma in August 2022**. The diplomas related to the premiere of the two works can be viewed at.

([https://www.ace.upg-ploiesti.ro/doctorat/Productie\\_stiintifica\\_ultimii\\_5\\_ani.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Productie_stiintifica_ultimii_5_ani.pdf))

In the same context, in 2024, at [the Research Gala](#) of Petrol-Gaze University of Ploiești, for the doctoral students section, Ms. **Bălaș** (Rad) Dana Veronica, doctoral student in the field of Systems Engineering, was awarded the First Prize.

( [https://www.ace.upg-ploiesti.ro/doctorat/Diploma\\_gala\\_cercetarii\\_2024.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Diploma_gala_cercetarii_2024.pdf) ) At the 2025 Research Gala, also for the doctoral student section, Ms. Lasc (Petcuț) Anca Adriana, doctoral student in the field of **Systems Engineering** , was awarded the First Prize ( [https://www.ace.upg-ploiesti.ro/doctorat/Diploma\\_gala\\_cercetarii\\_2025.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Diploma_gala_cercetarii_2025.pdf) )

The University of Petroleum and Gas of Ploiești, through IOSUD - UPG and the doctoral field of **Systems Engineering**, encourages the publication of articles in WOS indexed journals by paying, where applicable, the fees related to the articles of doctoral supervisors and doctoral students.

For doctoral students, the results are visible through publications and participation in scientific events.

( [https://www.ace.upg-ploiesti.ro/doctorat/Lista\\_lucrarilor\\_prezentate\\_la\\_conferinte\\_2021\\_2026.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Lista_lucrarilor_prezentate_la_conferinte_2021_2026.pdf) )

( and the use of it in doctoral theses.

To support doctoral research, steps were taken by the field coordinator and companies were identified that agreed to offer doctoral students in the field of **Systems Engineering** scholarships for 6 months. These companies sent [letters of intent to the Petroleum and Gas University of Ploiești regarding the award of scholarships worth 500 lei](#) , for a period of 6 months for doctoral students in the scientific research program .

In this section of the report we have attempted to demonstrate that for the doctoral field of **Systems Engineering** the educational effectiveness:

- it is embodied in the development of research and scientific innovation skills;
- is reflected in the doctoral student's ability to generate knowledge with scientific impact.

## ***DOMAIN C. Quality management***

**Criterion C.1. Strategies and procedures for quality assurance, including in the field of academic ethics and deontology, that involve students, employers and other stakeholders and are applied consistently and transparently**

**Standard SC1.1. Application Strategic directions, actions and procedures implemented appropriately**

***Indicator IPC1.1.1 The organizational component carries out actions and applies procedures consistently, proving their impact in improving the quality of education at the level of the study program.***

At the level of the Petroleum and Gas University of Ploiești and IOSUD-UPG, there is an internal mechanism through which study programs, including doctoral ones, are initiated, approved, monitored and evaluated. The **Quality Assurance Code of the Petroleum and Gas University of Ploiești** ( [06-R-01-04-UPG-QUALITY-ASSURANCE-CODE.docx-1.pdf](#) ) , and the **Quality Manual** ( [QUALITY MANUAL – Petrol-Gaze University of Ploiești](#) ). Also in the **Regulation on the organization and functioning of the Petrol-Gaze University of Ploiești** , ( [R01-02 \(1\).pdf \(upg-ploiesti.ro\)](#) ), in art. 20, (2) the main attributions of the *Council for Doctoral Studies* ( *CSUD* ) are specified . In the **Regulation on the organization and conduct of doctoral studies at the Petrol-Gaze University of Ploiești** ( [https://www.upg-ploiesti.ro/wp-content/uploads/2024/09/R-07\\_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf](https://www.upg-ploiesti.ro/wp-content/uploads/2024/09/R-07_05-Regulament-privind-organizarea-si-desfasurarea-stud-univ-drd-la-UPG-Ploiesti.pdf) ) the *CSUD*'s attributions are specified in art. 6 .

The annual reports of CEACU can be found at [COMMISSION FOR EVALUATION AND QUALITY ASSURANCE IN UPG IN PLOIESTI \(CEACU\) – Petrol-Gaze University of Ploiești](#) . The Doctoral School is audited annually, the audit plans can be found at the address [DEPARTMENT OF](#)

<https://www.upg-ploiesti.ro/wp-content/uploads/2026/02/PROGRAM-AUDITURI-INTERNE-2026.pdf> it appears that the last audit was on February 10, 2026. The Quality Management Service (SMQ) of UPG, through accredited auditors, also audits the Doctoral School annually, and the annual reports can be found at <https://www.upg-ploiesti.ro/index.php/ro/raport-anual-de-activitate>. In the AEROQ 2020 and 2025 audit, IOSUD-UPG and the Doctoral School were also audited, as can be seen from the document [Audit AEROQ 2020 and 2025](#). An example of an internal audit is presented in the document [Audit Report SD 2025](#), and the audit plan for 2026 in the document [Audit Plan CSUD SD 2026](#).

The Doctoral School's annual self-evaluation, progress, and reports are approved by the University Senate/CSUD and are available at: <https://www.upg-ploiesti.ro/index.php/scoala-doctorala-arhiva/metodologii-regulamente-si-legislatie/>

**Standard SC1.2. Stakeholder Involvement** The HIE demonstrates that it involves stakeholders with relevant activity in the application of procedures.

*Indicator IPC1.2.1 The opinions of members of the own community and other stakeholders are taken into account in the process of implementing procedures .*

An important component of the internal evaluation is the evaluation of doctoral supervisors by doctoral students, the purpose of which is to quantify the level of satisfaction of doctoral students within IOSUD-UPG, regarding the support and mentoring activities offered to students by their supervisors. There is and is implemented a **Procedure for evaluating the satisfaction of students and other stakeholders** ([https://www.ace.upg-ploiesti.ro/doctorat/PO\\_08.01\\_Procedura\\_EVALUAREA\\_SATISFAC%C8%9AIEI\\_STUDEN%C8%9AILOR\\_SI\\_A\\_ALTOR\\_PARTI\\_INTERESATE.pdf](https://www.ace.upg-ploiesti.ro/doctorat/PO_08.01_Procedura_EVALUAREA_SATISFAC%C8%9AIEI_STUDEN%C8%9AILOR_SI_A_ALTOR_PARTI_INTERESATE.pdf)) which is also applicable to doctoral students. As a result of its implementation, doctoral students are given an anonymous questionnaire ([https://www.ace.upg-ploiesti.ro/doctorat/Chestionar\\_satisfactie\\_studenti\\_doctoranzi.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Chestionar_satisfactie_studenti_doctoranzi.pdf)) in which they can make recommendations for improving the quality of the academic and administrative services offered. Anonymous evaluation questionnaires are also sent to teaching staff ([https://www.ace.upg-ploiesti.ro/doctorat/Chestionar\\_de\\_evaluare\\_a\\_procesului\\_educational\\_si\\_de\\_cercetare\\_Cadre\\_Didactice.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Chestionar_de_evaluare_a_procesului_educational_si_de_cercetare_Cadre_Didactice.pdf))

The answers provided by the doctoral students are summarized in ([https://www.ace.upg-ploiesti.ro/doctorat/Chestionar\\_de\\_evaluare\\_a\\_satisfactiei\\_clientilor\\_studenti\\_Raspunsuri.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Chestionar_de_evaluare_a_satisfactiei_clientilor_studenti_Raspunsuri.pdf)) and those obtained from the doctoral supervisors in 2026 can be found in ([https://www.ace.upg-ploiesti.ro/doctorat/Chestionar\\_de\\_evaluare\\_a\\_procesului\\_educational\\_si\\_de\\_cercetare\\_Cadre\\_Didactice\\_Raspunsuri.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Chestionar_de_evaluare_a_procesului_educational_si_de_cercetare_Cadre_Didactice_Raspunsuri.pdf))

**Criterion C.2. Functionality of education quality assurance structures, including in the field of university ethics and deontology, according to the law**

**Standard SC2.2. Functioning** The organizational structures in the field of quality assurance and university ethics and deontology fulfill their specific role and functions adequately .

*Indicator IPC2.2.2. The University Ethics Committee operates on the basis of the regulation approved by the University Senate and acts independently of any other structure or person within the higher education institution, in compliance with the law .*

The Ethics Committee operates independently according to [the Regulation on the organization and functioning of the University Ethics Committee of the Petroleum and Gas University of Ploiești](#) and complies with [the Code of University Ethics and Deontology](#) .

**Criterion C.3. Procedures for initiating, monitoring and periodically reviewing programmes and areas of study and activities carried out, involving students, employers and other stakeholders**

**Standard SC3.1. Procedures and their application** The HEI has procedures regarding the initiation, monitoring and periodic review of programs and fields of study and of the activities carried out and applies them systematically .

*Indicator IPC3.1.1 The organizational component consistently applies the procedures, proving their impact on quality assurance .*

As presented in [Indicator IPC1.1.1](#) , IOSUD - UPG, the Doctoral School and the doctoral field of **Systems Engineering** comply with the procedures and regulations in accordance with the latest legislative amendments.

*Indicator IPC3.1.2 Members of the own community and other stakeholders are involved in the process of implementing procedures .*

Doctoral supervisors and doctoral students in the doctoral field of **Systems Engineering** comply with the regulations and procedures (and verify that [the IPC1.1.1 Indicator is complied with](#) ) . There is an order for preparing documents, they are standardized SMQ ( [UPG Intranet - DOCTORATE - All documents](#) / regarding the doctoral school there are 59 standardized files ).

**Criterion C.4. Procedures for periodic evaluation of the quality of the activities of teaching, auxiliary teaching and administrative staff**

**Standard SC4.1. Procedures** The application of methodologies and procedures contributes to improving the quality of staff activities.

*Indicator IPC4.1.1 The organizational component analyzes the results of the semester-long evaluation process by students of the performance of teaching staff .*

In the UPG of Ploiești, there is and applies **the Methodology for evaluating the results and professional performances of the teaching and research staff of the Petrol - Gaze University of Ploiești** ( [04-R-04-13-METHODOLOGIE-DE-EVALUARE-A-RESULTATELOR-SI-PERFORMANTELOR-PROFESIONALE-ALE-PERSONALULUI-DIDACTI-SI-DE-RECETARE-DIN-UNIVERSITATEA-PETROL-GAZE-DIN-PLOIESTI-dupa-CA-1.docx](#) ).

Within the **doctoral field of Systems Engineering**, [the Customer Satisfaction Evaluation Questionnaire](#) exists and has also been applied. which collected [responses from doctoral students](#) in the field.

[Questionnaires were also sent to doctoral supervisors](#) and the answers provided by them can be found in the document [Questionnaire for the evaluation of the educational and research process-Teaching Frameworks-Answers. .](#)

**Criterion C.5. Systematically updated databases relating to internal quality assurance**

**Standard SC5.1. Databases** The HIE uses databases to support internal quality assurance activities.

Online access to scientific resources for research within the university is ensured under the subsidiary contract (Anelis Plus) to the Financing Contract No. 1/Axis 1/18.07.2017 for the implementation of the project no. code My SMIS 2014+: 102839 entitled "National electronic access to scientific literature to support the research and education system in Romania - ANELIS PLUS 2020, within the POC-Axis 1-CDI program, concluded by the Association of Universities, Research and Development Institutes and Central University Libraries in Romania (ANELIS PLUS) with the Petrol-Gaze University of Ploiești (ANELIS PLUS contributing member).

Based on this contract, access is ensured to the databases: Science Direct, Scopus, SpringerLink Journal, Thomson Reuters – Derwent Innovations Index, Thomson Reuters – Web of Science, Thomson Reuters – Journal Citation Reports, OnePetro, Wiley Online Library and 2000 e-book titles from all fields that can be accessed full-text, in the ANELIS PLUS National Repository at: <https://dspace.anelisplus.ro/xmlui/>.

In UPG of Ploiești there are several organizational structures specific to quality management, namely: ( [DEPARTMENT OF QUALITY MANAGEMENT \(DMCU\) – Petrol-Gaze University of Ploiești](#) ), [Commission for Quality Assessment and Assurance in UPG of Ploiești \(CEACU\)](#) , [Internal Monitoring Commission \(CMI\)](#). The mentioned structures verify all activities in the university from a quality perspective.

**Criterion C.6. Transparency of information of public interest, including that regarding the programs and fields of study offered, as well as the related certificates, diplomas and qualifications**

**Standard SC6.1. Transparency** The organizational component ensures the transparency of information, according to the law .

*Indicator IPC6.1.1 The organizational component ensures the publication and access to information of public interest regarding the evaluated study program .*

[The doctoral school of IOSUD-UPG](#) and [the doctoral field of Systems Engineering](#) and [the Department of Automation; Computers and Electronics](#) present all information of specific public interest.

*Indicator IPC6.1.2 The organizational component ensures the transparency of decision-making processes.*

Senate decisions can be found at [Senate Decisions of 2025 – Petrol-Gaze University of Ploiești](#) , and those of CSUD at [CSUD - Doctoral School - UPG Ploiești](#) and at [Methodologies, regulations and legislation – Petrol-Gaze University of Ploiești](#) .

**Criterion C.8. Participation in external evaluation processes, according to the law**

**Standard SC8.1. Compliance with the obligation of external evaluation** The HEI is subject to the external quality evaluation process, according to the law .

*Indicator IPC8.1.1 The organizational component carries out the procedures related to the external quality assessment process, in order to organize, under the law, the evaluated study program.*

The internal evaluation reports of the doctoral field of **Systems Engineering** , after elaboration, are approved by the CSD, CSUD, the Quality Management Service, the Board of Directors and approved by the University Senate, then sent to ARACIS according to the law.

The doctoral field of **Systems Engineering** following **the ARACIS external evaluation from September 20-24, 2021** ( [ARACIS Council Decision no . 97/25.11.2021](#) , [External Coordinator 's Report](#) and External International Expert 's Report ) obtained **Maintenance of Accreditation** .

On 04.06.2025 it was sent by [e-mail to ARACIS](#) - Ms.prof.dr.ing. Eugenia MINCĂ) [Internal interim report for DSUD-IS-UPG](#) ( No. 13324/ 04.06.2025)

Regarding IOSUD UPG in Ploiești, **the Maintenance of accreditation was obtained** following the external institutional evaluation of UPG in Ploiești from **05.03.2025-07.03.2025** [EI2736 UPG Council-Report 08.05.2025.pdf](#) .

## IV. Recommendations and main conclusions resulting from the last external quality assessment procedure 1, and actions taken

The external reports of the coordinator and the international expert can be found at [https://www.ace.upg-ploiesti.ro/doctorat/Raport\\_extern\\_ARACIS\\_cordonator\\_25\\_11\\_2021.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Raport_extern_ARACIS_cordonator_25_11_2021.pdf) respectively [https://www.ace.upg-ploiesti.ro/doctorat/Raport\\_extern\\_ARACIS\\_expert\\_strain\\_25\\_11\\_2021.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Raport_extern_ARACIS_expert_strain_25_11_2021.pdf) and the Decision of the ARACIS Council of 25.11.2021 regarding the maintenance of the accreditation of the doctoral field of **Systems Engineering** in [https://www.ace.upg-ploiesti.ro/doctorat/Hotararea\\_Consiliului\\_ARACIS\\_nr\\_97\\_din\\_25\\_11\\_2021.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Hotararea_Consiliului_ARACIS_nr_97_din_25_11_2021.pdf)

As for the interim progress report, it can be found at [https://www.ace.upg-ploiesti.ro/doctorat/Raport\\_intermediar\\_DSUD\\_IS\\_UPG.pdf](https://www.ace.upg-ploiesti.ro/doctorat/Raport_intermediar_DSUD_IS_UPG.pdf)

The table below summarizes how the recommendations in the Reports were responded to. External ARACIS from 25\_11\_2021.

**Table IV- 1.** Ratings on performance indicators, recommendations and implementation method

No. Crt .	Indicator type (*, CPI)	Performance indicator	External evaluation grade /	recommendation Experts (9.10.2021)	Implementation mode
1		A.1.1.1.	<b>accomplished</b>	Developing an internal procedure for analyzing and approving proposals regarding the topic of the training program based on advanced university studies. It is recommended that all decisions of the Doctoral School Council be posted on the school's website, and some pages should be translated into English. Continuing the effort to permanently update the Doctoral School's website so that both doctoral supervisors, but also doctoral students or admission candidates can find all the necessary information.	In 2024, a new version of the website was created in which the Doctoral School and the doctoral field of Systems Engineering are properly represented ( <a href="https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineria-sistemelor">https://doctorat.upg-ploiesti.ro/doctorat/domeniul-ingineria-sistemelor</a> ). This page offers the possibility of inserting useful information for doctoral supervisors, doctoral students and candidates in the News section. Also, facilities were created within the website for publishing CSUD Decisions ( <a href="https://doctorat.upg-ploiesti.ro/iosud/csud">https://doctorat.upg-ploiesti.ro/iosud/csud</a> ) and CSD Decisions ( <a href="https://doctorat.upg-ploiesti.ro/iosud/csd">https://doctorat.upg-ploiesti.ro/iosud/csd</a> ), We would like to point out that the Doctoral School page also contains an English section ( <a href="https://doctorat.upg-ploiesti.ro/en/">https://doctorat.upg-ploiesti.ro/en/</a> ) in which, under the Useful information – Events section, information of interest can be inserted.
2		A.1.1.2.	<b>accomplished</b>	Continuous updating of the Doctoral School regulations at the level of existing legislation and the inclusion in a single document of all the provisions of art. 17 paragraph (5) of the Code of Doctoral Studies.	The updated Doctoral School Regulation includes mandatory criteria, procedures and standards for the aspects specified in Order No. 3020/2024 ( <a href="https://www.edu.ro/sites/default/files/fisiere%20articole/OM_3020-2024.pdf">https://www.edu.ro/sites/default/files/fisiere%20articole/OM_3020-2024.pdf</a> ) regarding the approval of the Code of Doctoral Studies, with subsequent amendments and additions, in which references to the Doctoral School are made in Chapter 4, Article 12
3		A.1.2.1.	<b>accomplished</b>	Use of an appropriate platform with access for all persons involved in managing doctoral student records.	In UPG there is an IT system for recording doctoral students and their academic career. The application aims to manage data related to doctoral students and doctoral supervisors of the Doctoral School of IOSUD UPG Ploiesti. This application contains doctoral supervisors, their doctoral students, the

<sup>1</sup> In the case of the accreditation or accreditation maintenance procedure, as the case may be.



					academic integrity and guidance committees, exams, papers and deadlines for their defense.
4		A.1.2.2.	<b>accomplished</b>	Not the case	Not the case
5		A.1.3.1.	<b>fulfilled )</b>	It is recommended to permanently update the list of grants. It is recommended to expand public-private partnerships with innovation-oriented companies in the field of Systems Engineering .	The UPG operates the Department of Scientific Research and European Projects, which updates the list of research grants. Discussions will be initiated with the companies that have submitted letters of intent for the award of scholarships regarding the conclusion of partnership agreements in order to carry out doctoral theses in the field of Systems Engineering.
6		A.1.3.2.	<b>Partially fulfilled</b>	It is recommended to attract the private sector to provide scholarships for a minimum of six months for doctoral students or to obtain research or institutional development/human resources grants for additional support for doctoral students .	Steps were taken and companies were identified that agreed to offer doctoral students in the field of Systems Engineering scholarships for 6 months. These companies sent <u>letters of intent to the Petroleum and Gas University of Ploiești regarding the award of scholarships worth 500 lei, for a period of 6 months</u> for doctoral students in their research internship in the field of Systems Engineering.
7	*	A.1.3.3.	<b>Partially fulfilled</b>	Establishing a consistent annual amount to be allocated to each doctoral student from the total doctoral grants and tuition fees and to be made available to the doctoral student to be spent, in accordance with the legal regulations in force, in the interest of completing the doctoral thesis, meaning by this acquisition expenses, but also expenses for participation in scientific events.	All doctoral students and doctoral supervisors are informed about the use of the funds . As can be seen from the report, but also from the doctoral students' publications, their funding was ensured by the UPG. For the doctoral field of Systems Engineering in the academic year 2023-24, expenses were incurred representing 10.8% of the total amounts. Efforts will be made to maintain this percentage in the following years. Regarding participation in scientific events, some of the doctoral students participated in events that are nominated in the <u>annual activity reports, presented by each doctoral student</u> .
8	CPI	A.2.1.1.	<b>accomplished</b>	It is recommended to update the existing material base and continue investments in material endowment, especially in a leading field such as Systems Engineering. 2. Increasing collaboration with industry and economic agents in the main topics of interest of the field, in order to use their research infrastructure.	<u>In the period 2021-2026, the endowment continued doctoral research laboratories both through purchases from doctoral grants and from fees.</u> As indicated in the indicator analysis, doctoral students financed from the budget through grants have 7,000 lei each for purchases, and those with fees have 3,000 lei each for the same purpose. Because the doctoral field of Systems Engineering is assigned to the Department Automation, Computers and Electronics, the doctoral research laboratories operate integrated with some of the laboratories of this department and implicitly with their facilities.
9	CPI	A.3.1.1.	<b>accomplished</b>	That's not the case.	That's not the case.
10	*	A.3.1.2.	<b>accomplished</b>	Ensuring the conditions so that starting with 01.10.2021 the indicator is met. Encouraging young researchers to support habilitation, thus ensuring the sustainability of the field.	Prof. Ionescu Octavian qualified in 2025, and in the same year he affiliated with the Doctoral School of UPG for the field of Systems Engineering .
11		A.3.1.3.	<b>accomplished</b>	That's not the case.	That's not the case.
12	*	A.3.1.4.	<b>accomplished</b>	That's not the case.	That's not the case.
13	CPI	A.3.2.1.	<b>accomplished</b>	That's not the case.	That's not the case.
14	*	A.3.2.2.	<b>accomplished</b>	That's not the case.	That's not the case.
15		B.1.1.1.	<b>accomplished</b>	Not the case	Not the case
16	*	B.1.2.1.	<b>accomplished</b>	It is recommended that all evaluation and selection criteria	The methodology for organizing and conducting the admission competition for

				be included in the admission methodology and be presented transparently on the IOSUD/Doctoral School website.	doctoral studies can be accessed on <a href="#">the Doctoral School website</a> .
17		B.1.2.2.	<b>accomplished</b>	Not the case	Not the case
18		B.2.1.1.	<b>accomplished</b>	Including as a mandatory subject at least one subject intended for the in-depth study of research methodology and/or statistical data processing.	In the Curriculum for the 2025-2026 academic year <a href="https://www.ace.upg-ploiesti.ro/doctorat/plan_inv_ingineria_sistemelor_2025_2026.pdf">https://www.ace.upg-ploiesti.ro/doctorat/plan_inv_ingineria_sistemelor_2025_2026.pdf</a> there is the discipline <i>Research Methodology</i> .
19		B.2.1.2.	<b>accomplished</b>	Not the case	Not the case
20		B.2.1.3.	<b>accomplished</b>	Not the case	Not the case
21		B.2.1.4.	<b>accomplished</b>	That's not the case.	That's not the case.
22	CPI	B.2.1.5.	<b>accomplished</b>	Not the case	Not the case
23	CPI	B.3.1.1.	<b>accomplished</b>	Not the case	Not the case
24	*	B.3.1.2.	<b>accomplished</b>	Not the case	Not the case
25	*	B.3.2.1.	<b>accomplished</b>	Not the case	Not the case
26	*	B.3.2.2.	<b>accomplished</b>	Not the case	Not the case
27		C.1.1.1.	<b>accomplished</b>	Greater promotion of the possibilities made available by the university to students in terms of social or academic support, but also of the counseling they can call upon.	<a href="#">The Code of Student Rights and Obligations of UPG Ploiesti</a> regulates, in accordance with the legislation in force, support measures including: special places upon admission, free accommodation, exemptions from participation and publication fees, etc. Adequate tutorial support is also provided through <a href="#">the Counseling and Guidance Center in the office</a> .
28		C.1.1.2.	<b>accomplished</b>	It is recommended to develop a plan of measures focused on the needs and satisfaction questionnaires and to present it publicly. This plan of measures should also be presented to all doctoral students.	1. Doctoral supervisors will work to increase collaboration between doctoral students . 2. At the field level, the development of such a plan based on student responses will be sought, which will be made known to all doctoral students through the Systems Engineering field webpage.
29	CPI	C.2.1.1.	<b>accomplished</b>	Ensuring all relevant pages are also in English, especially if they aim to attract students from abroad, and improving the appearance by making it much more attractive (user-friendly).	, meaning that the basic documents are translated . The Systems Engineering doctoral field does not have the logistics for full translation.
30		C.2.2.1.	<b>accomplished</b>	Not the case	Not the case
31		C.2.2.2.	<b>accomplished</b>	IOSUD UPG Ploiești must ensure greater access to software for verifying similarity.	. At the IOSUD level it is implemented for similarity detection <a href="http://www.sistemantiplagiat.ro">www.sistemantiplagiat.ro</a> . PhD students can request this verification twice free of charge during their PhD period and for a small fee. Research reports are also subject to verification.
32		C.2.2.3.	<b>accomplished</b>	That's not the case.	That's not the case.
33	*	C.3.1.1.	<b>accomplished</b>	Adopting clear and effective measures to encourage doctoral students to carry out at least one mobility during their doctoral internship. Carrying out permanent monitoring of doctoral students' participation in conferences abroad, being able to highlight doctoral students who do not participate at all .	Students are offered the opportunity to complete internships through Erasmus+ programs. Some of <a href="#">the PhD students in the Systems Engineering Field have completed such internships</a> .
34		C.3.1.2.	<b>Partially fulfilled</b>	Encouraging doctoral supervisors to carry out doctoral theses under international co-supervision. Establish a plan to promote presentations in the field of	Doctoral supervisors in the field of Systems Engineering were encouraged to initiate collaborations leading to the creation of co-supervised theses. international, including through online meetings

				Systems Engineering by international experts.	<a href="#">A plan was developed to invite</a> international experts to give presentations to doctoral students , <a href="#">. three professors from universities in Canada, Greece, and Portugal</a> were invited and responded favorably . HYPERLINK "https://www.ace.upg-ploiesti.ro/doctorat/Invitatii_si_confirmari_profesori_straini.pdf"
35		C.3.1.3.	accomplished	<b>.Inclusion of experts internationals in advisory or doctoral thesis defense committees.</b>	<a href="#">By implementing the plan,</a> international experts will be invited to be part of the thesis support committees or to be included in the academic guidance and integrity committees for presentations to doctoral students , .

From the analysis of the implementation method, including the evidence presented in the Interim Report, of the recommendations for the indicators for which the partially fulfilled rating was obtained, namely: A.1.3..2, A. 1.3.3 and C.3.1.2, it results that all three criteria can be considered as fulfilled.

## V. SWOT analysis of the doctoral field of Mechanical SYSTEMS Engineering

<p style="text-align: center;"><b>Strong points:</b></p> <ul style="list-style-type: none"> <li>✓ <i>Research infrastructure suitable for doctoral studies;</i></li> <li>✓ <i>Doctoral supervisors with national and international visibility, with scientific publications in publications in international databases;</i></li> <li>✓ <i>High interdisciplinarity – the field integrates concepts from automation, computer science, applied mathematics, artificial intelligence and decision theory.</i></li> <li>✓ <i>Broad applicability – the methods are usable in industry, cybersecurity, medicine, transportation, energy, and socio-technical systems.</i></li> <li>✓ <i>Use of modern modeling and simulation tools;</i></li> <li>✓ <i>Connection with emerging fields such as Machine Learning and artificial intelligence.</i></li> </ul>	<p><b>INTERNAL FACTORS</b></p> 	<p style="text-align: center;"><b>Weak points:</b></p> <ul style="list-style-type: none"> <li>✓ <i>Insufficient scholarships granted by the economic environment to doctoral students;</i></li> <li>✓ <i>Relatively low retention rate of doctors in research or teaching positions;</i></li> <li>✓ <i>Insufficient promotion of the research capabilities available in the doctoral field of Systems Engineering;</i></li> <li>✓ <i>Relatively small number of research projects, with internal or external funding, in which doctoral students are involved;</i></li> <li>✓ <i>Lack of complete information in English on the university website</i></li> <li>✓ <i>Dependence on complex computing resources and specialized software.</i></li> <li>✓ <i>Difficulties in experimental validation of complex theoretical models.</i></li> </ul>
	<p><b>SWOT analysis</b></p>	
<p style="text-align: center;"><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>✓ <i>Growing needs on the labor market for specialists in Systems Engineering (doctors or PhD students) to carry out research projects and/or to increase the competitiveness of organizations;</i></li> </ul>	<p><b>EXTERNAL FACTORS</b></p> 	<p style="text-align: center;"><b>Threats:</b></p> <ul style="list-style-type: none"> <li>✓ <i>Decreased interest in doctoral studies among master's degree graduates, also caused by the increased attractiveness of sectors with the potential for quick material gains;</i></li> </ul>

<ul style="list-style-type: none"> <li>✓ <i>Preparation to face new trends in specific research, with its leading directions;</i></li> <li>✓ <i>Growing interest in intelligent and autonomous systems.</i></li> <li>✓ <i>Integration with emerging technologies such as the Internet of Things (IoT) and systems cyber-physical.</i></li> <li>✓ <i>European research funding (e.g. Horizon Europe programs).</i></li> <li>✓ <i>Applications in security, behavioral analysis and decision-making systems.</i></li> <li>✓ <i>Interdisciplinary collaborations with fields such as medicine, economics or psychology.</i></li> <li>✓ <i>The existence of platforms that provide access to international databases for the research undertaken by doctoral students, but also for the dissemination of the results of the research undertaken;</i></li> <li>✓ <i>UPG part of the European Green Deal project – green hydrogen in collaboration with Petrom, Hygrid 20 with E.ON.</i></li> <li>✓ <i>Continuous identification of habilitation capacity for members of the UPG academic community and encouraging them to take the necessary steps to obtain the habilitation certificate.</i></li> </ul>		<ul style="list-style-type: none"> <li>✓ <i>Decreasing the number of doctoral places funded from the state budget;</i></li> <li>✓ <i>Insufficient dissemination of information regarding doctoral studies in English, with a negative impact on promoting the educational offer and attracting international students;</i></li> <li>✓ <i>Decrease in the budget allocated by the Ministry of Education and Culture;</i></li> <li>✓ <i>Competition from other fields such as Data Science or Artificial Intelligence.</i></li> <li>✓ <i>The rapid pace of technological evolution; which can lead to the obsolescence of certain knowledge;</i></li> <li>✓ <i>Difficulties in transferring research results to industrial applications.</i></li> <li>✓ <i>Dependence on computing infrastructure and data access.</i></li> <li>✓ <i>The absence of an organization of doctoral graduates, generating the absence of appropriate feedback and difficulties in the prospective use of the opportunities generated by them.</i></li> </ul>
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## VI. Main challenges and development directions

### I.1. Main challenges

- 1.1. Increasing the attractiveness of pursuing doctoral studies by master's degree graduates.
- 1.2. The need to adapt doctoral theses to the demands of the labor market.
- 1.3. The high costs of equipment related to research infrastructure.
- 1.4. The need to publish in prestigious journals and participate in important conferences.
- 1.5. The need for interdisciplinary collaboration (control, computer science, applied sciences).

### VI.2. Development directions

- 2.1. Developing doctoral research in highly topical areas such as: unconventional energy systems, artificial intelligence, information security, integrated intelligent systems, the Internet of Things.
- 2.2. Development and modernization of existing research laboratories and use of modern systems modeling and simulation platforms.
- 2.3. Developing partnerships with the industrial environment and directing research towards applications with socio-economic impact.
- 2.4. Co-supervised doctoral dissertations in the field of **Systems Engineering** .

## VII . Description of Annexes

There are no annexes.