

## **THE DIAGNOSIS OF THE QUALITY OF EDUCATIONAL SERVICES WITHIN THE UNIVERSITY OF PETROȘANI**

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**ABSTRACT:** *In the present context of amplifying the concerns for ensuring the quality of education in Romania and the coagulation of components of a new culture in the quality of education providers, the paper examines the ways in which the University of Petroșani has developed the organizational framework and the tools necessary to ensure and improve quality, in accordance with the provisions of the national legislation and with the standards and performance indicators used by The Romanian Agency for Quality Assurance in Higher Education in the external evaluation of quality. The diagnostic analysis undertaken in this study focuses on the investigation of elements which guarantee the quality of the education process, starting from the premise that quality assurance, together with the availability of human resources, adequate logistics and materials form a social network which must not be disregarded when carrying out duties and fulfilling the objectives of an institution of higher education. The diagnosis attempted in the paper is completed, naturally, with a SWOT analysis of the current status of quality assurance within the University and with a package of measures that should be taken to enhance the strong points and to mitigate the weaknesses highlighted in the analysis.*

**KEY WORDS:** *quality assurance, quality of educational process, human resources quality, quality in infrastructure, quality of students' life, SWOT analysis, measurements for quality enhancement.*

**JEL CLASSIFICATIONS:** *I20, I21, I23, L84.*

### **1. INTRODUCTION**

The topic of quality in higher education has received a great deal of attention within the Romanian scholar and legislative environment, starting from the point of the adoption of the Bologna Process (1999).

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Up to that moment, a teacher considered in his responsibility to maintain a specific academic standard with respect to the high quality of the knowledge brought forth to his students, in a manner which he assumed to be excellent. Thus, it was taken as normal to highlight the latest developments in areas in which the professor delivers his lectures, as well as to evaluate the extent to which he accomplished his targets by recording the audience's feed-back. The students were asked questions, they shaped their answers and, in their turn, they raised their inquiries to the professor; these things happened within the framework of what was assumed to be an openly held course (Sîrbu, et al, 2009). Nevertheless, the human society has changed substantially in the last few years and, as far as quality is concerned, solid proofs must replace personal evaluations.

The profound changes influencing the legislation with respect to the quality and accreditation of higher education in Romania in the period 2005-2014 clearly reflects this trend. The Bologna process and the Lisbon Agenda 2000 represent the reference documents that have raised concerns regarding the monitoring, the updating and the European compatibility of theories, methodologies and institutional practices of quality assurance, both at the level of the states within the European Union and Romania.

Thus, in accordance with the provisions of the Law on education no. 1/2011, *quality education is defined as a set of characteristics of a study program or of a professional training program including its provider, which meets quality standards and the expectations of the recipients*. In the same context, *ensuring the quality of education represents the ability of educational institutions to offer education programs in accordance with preset standards and it is carried out through a set of actions for the development of institutional capacity, policy-making, planning and implementation of study programs which make beneficiaries believe that the educational organization meets quality standards* (Law on education no. 1/2011). Therefore, the quality and the process that ensures the quality of education requires the achievement of two conditions, simultaneously: *the first condition* implies the fulfilment of a certain predetermined set of quality indicators; *the second condition* relates to satisfying the requirements and expectations of beneficiaries (Păunescu, et al, 2012).

With regard to the first condition, establishing and monitoring the compliance with quality standards lies with *The Romanian Agency for Quality Assurance in Higher Education* (RAQAHE), set up in 2005, the main mission of which is the external evaluation of the Romanian higher education's quality, at the level of study programmes, as well as from the institutional point of view ([www.aracis.ro](http://www.aracis.ro)) In its approach to monitor quality assurance policies implemented at the level of institutions of higher education, RAQAHE takes into consideration three fundamental areas of organization and operation of the University (ARACIS, 2010a; ARACIS, 2010b; ARACIS, 2006):

- ✓ ***Institutional Capacity*** – involves the assessment of the method in which the higher education institution proves the fact that it has a coherent organization and an effective management system that are able to ensure stable operation for medium and long term;

- ✓ **Educational efficiency** –targets the resource mobilization of the educational institution in order to obtain the expected learning outcomes;
- ✓ **Quality management** – focused on those strategies, policies, procedures and structures by which the institution demonstrates that it evaluates the performance of ensuring and improving the quality of education and provides information systems that collect and analyze learning and research outcomes.

For each of these areas, *the Evaluation Methodologies and RAQAHE Guidelines* define a set of standards and specific performance indicators. The requirements or the values of a performance indicator range from the minimum level (Min), considered mandatory to a recommended reference level (REF.), for which the institution can opt or it may establish a higher level through its own reference standards.

Each of the three areas of quality assurance includes, considering the way of defining specific standards and indicators, the second condition mention above with regard to the definition of the quality assurance process, namely, *satisfying the beneficiaries' expectations*. Thus, the correspondence between diplomas and qualifications, monitoring the integration of graduates on the labour market, relating the content of disciplines to the requirements of employers, defining the competences gained by completing each study programme are just a few examples that reflect the emphasis placed in the context of the new culture of quality, upon quantitative and qualitative results of attending and graduating a program of studies.

In the present context of amplifying the concerns for ensuring the quality of education in Romania and the coagulation of components of a new culture in the quality of education providers, this paper examines the ways in which the University of Petroșani has developed the organizational framework and the tools necessary to ensure and improve quality, in accordance with the provisions of the national legislation and with the standards and performance indicators used by RAQAHE in external evaluation of quality. The diagnostic analysis undertaken in this study focuses on the investigation of elements which guarantee the quality of the education process, starting from the premise that quality assurance, together with the availability of human resources, adequate logistics and materials form a social network which must not be disregarded when carrying out duties and fulfilling the objectives of an institution of higher education (Păunescu, et al., 2012).

## **2. THE QUALITY OF DIDACTIC ACTIVITIES WITHIN THE UNIVERSITY OF PETROȘANI**

The University of Petroșani is an academic education institution the beginnings of which date back in 1948, when, as a result of the publication of *Decree no. 175/1948 for Education Reform*, and of the *Decision of the Minister of Public Education regarding the organization of higher education, The Coal Institute – Faculty of Mining and Processing of Coal Deposits* was founded at Petroșani.

Beginning with the academic year 1957-1958 and following the issuance of *Decision No.1003/1957 of the Ministers' Council*, the Mining Institute of Petroșani remains, for a long period, the single higher mining education institution in Romania.

The diversification of fields and specializations after 1990 brought about major changes within the higher school in Petroșani and, consequently, technical education continues alongside with the emergence of new study programmes in the field of economy, mathematics, socio – humanistic, IT and public administration. This will also determine the modification of the name, which reflects both a management, and a content change. Thus, by the *Order of the Minister of Education* no. 4894/1991, *The Mining Institute from Petroșani* changes its name into the *Technical University of Petroșani*, and, by H.G. no. 568/1995 the Technical University of Petroșani becomes, in its turn, *the University of Petroșani*.

The University of Petroșani represents today an important institution from cultural and social point of view for Hunedoara County, a comprehensive higher education centre, with a major educational and scientific role in the region, an intellectual pole able to maintain the Jiu Valley on the map of major University cities of Romania.

Within the University, the academic activity is carried out according to the three cycles of higher education: Bachelor's Degree, Master's Degree and Doctor's Degree. Educational programs have been developed with the intention to create compatibility among these three components, and the competences conferred on each component in part were thought out based on the requirements of the labour market in the region and on the implementation of the capacity to offer vocational guidance to graduates in order to adapt to profound restructuring that takes place in the Romanian society in general and in the Jiu Valley in particular. Currently, within the three Faculties there are **19 fields of study with 25 Bachelor's programs, 18 Master's programs and 4 doctoral studies**. The evolution of university curricula has been continuously going upward, as follows:

a. **The Faculty of Mines** started in 1990 offering Mining studies, which result in four qualifications: *Underground Mining; Mining topography; Preparation of coal and ores; Mining exploitation (quarries)*, preparing engineers and junior engineers. Nowadays, in order to train future engineers, full-time education includes eight academic programs within five fields of study (table 1).

b. **The Faculty of Mechanical and Electrical Engineering** was preparing in 1990 engineers in the mechanical field and junior engineers in the electro-mechanical field, while today it trains engineers in nine specializations within seven academic fields (see table 2).

c. **The Faculty of Sciences** - has its beginnings in the academic year 1990-1991, when the Order of the Ministry of Education No. 7751/1990 lays the foundations for higher education, including the specialization *Industrial Management*. At present, the Faculty of Sciences is preparing economists, sociologists, social workers, bachelors in public administration and mathematics - computer sciences, within the framework of the eight programs of study in eight areas of full time education, and in three programs of study provided by distance learning (see table 3).

At the same time the offer for master programmes had been constantly expanding, thus in the academic year 2014 – 2015 there were 18 academic programmes in 13 fields of study, which are approved by ARACIS (see table 4).

**Table 1. Bachelor Study Programmes within the Faculty of Mining Engineering**

| No. | Academic field             | Bachelor Study Programmes                            | The duration of studies | Form of study | A/AP* |
|-----|----------------------------|--|-------------------------|---------------|-------|
| 1.  | Mining, oil and gases      | Mining Engineering                                   | 4 years                 | Day Courses   | A     |
|     |                            | Mining Topography                                    | 4 years                 | Day Courses   | A     |
| 2.  | Civil Engineering          | Mining Constructions                                 | 4 years                 | Day Courses   | A     |
| 3.  | Environmental Engineering  | Environmental Engineering and Protection in Industry | 4 years                 | Day Courses   | A     |
|     |                            | Waste Recycle Engineering                            | 4 years                 | Day Courses   | AP    |
| 4.  | Engineering and Management | Engineering Economics in Constructions               | 4 years                 | Day Courses   | AP    |
| 5.  | Industrial Engineering     | Quality Engineering and Management                   | 4 years                 | Day Courses   | AP    |
|     |                            | Security Engineering in Industry                     | 4 years                 | Day Courses   | AP    |

\* A – accredited by RAQAHE, AP – provisory authorized by RAQAHE

**Table 2. Bachelor Study Programmes within the Faculty of Mechanical and Electrical Engineering**

| No. | Academic field                       | Bachelor Study Programmes            | The duration of studies | Form of study | A/AP* |
|-----|--------------------------------------|--------------------------------------|-------------------------|---------------|-------|
| 1.  | Electrical Engineering               | Electro mechanics                    | 4 years                 | Day Courses   | A     |
|     |                                      | Instrumentation and data acquisition | 4 years                 | Day Courses   | A     |
| 2.  | Computers and Information Technology | Computer Engineering                 | 4 years                 | Day Courses   | A     |
| 3.  | Power Engineering                    | Industrial Energetics                | 4 years                 | Day Courses   | A     |
| 4.  | Mechanical Engineering               | Mining Machines and Equipment        | 4 years                 | Day Courses   | A     |
|     |                                      | Industrial Processing Equipment      | 4 years                 | Day Courses   | A     |
| 5.  | Systems Engineering                  | Automation and Applied Informatics   | 4 years                 | Day Courses   | A     |
| 6.  | Transports Engineering               | Transports Engineering and Traffic   | 4 years                 | Day Courses   | A     |
| 7.  | Industrial Engineering               | Machine Building Technology          | 4 years                 | Day Courses   | A     |

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**Table 3. Bachelor Study Programmes within the Faculty of Sciences**

| No. | Academic field | Bachelor Study Programmes             | The duration of studies | Form of study                   | A/AP* |
|-----|----------------|---------------------------------------|-------------------------|---------------------------------|-------|
| 1.  | Finances       | Finance and Banking                   | 3 years                 | Day Courses / Distance Learning | A/A   |
| 2.  | Accountancy    | Accounting and Management Informatics | 3 years                 | Day Courses / Distance Learning | A/A   |
| 3.  | Management     | Management                            | 3 years                 | Day Courses / Distance Learning | A/A   |

|    |                         |   |         |             |    |
|----|-------------------------|---|---------|-------------|----|
| 4. | Business Administration | Economy of Commerce, Tourism and Services | 3 years | Day Courses | A  |
| 5. | Administrative Sciences | Public Administration                     | 3 years | Day Courses | A  |
| 6. | Social Assistance       | Social Assistance                         | 3 years | Day Courses | A  |
| 7. | Sociology               | Sociology                                 | 3 years | Day Courses | A  |
| 8. | Mathematics             | Mathematics Informatics                   | 3 years | Day Courses | AP |

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**Table 4. Bologna Master Study Programmes within the University of Petroșani**

| No. | Faculty                               | Master Academic Field      | Master Study Programmes  | The duration of studies | Form of study |
|-----|---------------------------------------|----------------------------|--|-------------------------|---------------|
| 1.  | Mining Engineering                    | Mining, oil and gases      | Computerized Mine and Cadastral Surveying                                | 2 years                 | Day Courses   |
| 2.  |                                       |                            | Occupational Health and Safety Management                                | 2 years                 | Day Courses   |
| 3.  |                                       | Civil Engineering          | Project Engineering and Management                                       | 1.5 years               | Day Courses   |
| 4.  |                                       | Engineering and Management | Project Engineering and Management                                       | 2 years                 | Day Courses   |
| 5.  |                                       | Environmental Engineering  | Anthropogenic Environmental Impact Assessment and Ecological Restoration | 2 years                 | Day Courses   |
| 6.  |                                       |                            | Environmental Factors Control and Monitoring                             | 2 years                 | Day Courses   |
| 7.  | Mechanical and Electrical Engineering | Electrical Engineering     | Electrical and Mechanical Systems  | 2 years                 | Day Courses   |
| 8.  |                                       |                            | Industrial Electrical Equipment Operation                                | 2 years                 | Day Courses   |
| 9.  |                                       | Mechanical Engineering     | Process Plants and Equipment   | 2 years                 | Day Courses   |
| 10. |                                       |                            | Process Plants and Equipment in Mining                                   | 2 years                 | Day Courses   |
| 11. |                                       | Systems Engineering        | Computer Systems and Technologies  | 2 years                 | Day Courses   |
| 12. |                                       |                            | Advanced Techniques for Process Operation                                | 2 years                 | Day Courses   |
| 13. | Sciences                              | Management                 | Business Strategic Management  | 2 years                 | Day Courses   |
| 14. |                                       |                            | Human Resources Management   | 2 years                 | Day Courses   |
| 15. |                                       | Finance                    | Banking Management   | 2 years                 | Day Courses   |
| 16. |                                       | Accounting                 | Accounting and Audit   | 2 years                 | Day Courses   |
| 17. |                                       | Sociology                  | Social policies and social protection                                    | 2 years                 | Day Courses   |
| 18. |                                       | Mathematics                | Didactic Mathematics   | 2 years                 | Day Courses   |

Qualifications offered by doctoral studies represent the third cycle of advanced university education. The University of Petroșani holds the status of institution with doctoral studies, thus organizing the Doctoral School in the basic field of Engineering Sciences for the academic programs: *Mines, oil and gas; Industrial engineering; Electrical engineering; Systems engineering.*

This activity is coordinated by a number of 19 teachers from the Faculty of Mines and the Faculty of Mechanical and Electrical Engineering, professors with a high academic training.

The University also provides, according to curricula, post-graduate courses:

- **Post-graduate training and continuous professional development courses**, aimed at gaining new qualifications, in addition to those acquired on completing bachelor and master studies;
- **Post-graduate courses for professional reorientation** intended for pre-university teachers who want to diversify their chair with disciplines included in the curricula of these educational programs.

In terms of limiting the area of selection of future students and master students, and for reasons related primarily to the extension of the educational offer due to the formation of new schools of higher education, public or private, etc., the University of Petroșani manages to maintain its position among the medium level universities in Romania, having enrolled 3921 students, master students and doctoral students, in all forms of study.

The evolution of the number of students of the University of Petroșani since the academic year 2008-2009 is shown in table 5.

**Table 5. Dynamics of the number of students, master students and doctoral students starting with the academic year 2009-2010**

| Academic year | Bachelor students |             | Master students |             | Total number of students and master students |             |             | Doctoral students |
|---------------|-------------------|-------------|-----------------|-------------|--|-------------|-------------|-------------------|
|               | No tuition fee    | Tuition fee | No tuition fee  | Tuition fee | No tuition fee                               | Tuition fee | Total       |                   |
| 2009-2010     | 2191              | 2654        | 547             | 1181        | 2738   | 3835        | <b>6573</b> | 260               |
| 2010-2011     | 2253              | 1871        | 667             | 784         | 2920   | 2655        | <b>5575</b> | 188               |
| 2011-2012     | 2313              | 1026        | 436             | 637         | 2749   | 1663        | <b>4412</b> | 136               |
| 2012-2013     | 2241              | 752         | 255             | 650         | 2496   | 1402        | <b>3898</b> | 128               |
| 2013-2014     | 2132              | 447         | 377             | 453         | 2509   | 900         | <b>3409</b> | 143               |
| 2014-2105     | 2058              | 427         | 438             | 368         | 2496   | 795         | <b>3291</b> | 107               |

Table 6 presents, in detail, a report on the number of students based on cycles and the year of study in the current academic year.

It should be noted that, out of the total number of students from the academic year 2014-2015, **255 students, master students and doctoral students come from the Republic of Moldova**, with scholarships granted by the Romanian Government.

The programs of the three university cycles are organized and carried out in the University of Petroșani, within the following academic structures: the Faculty of Mines, the Faculty of Mechanical and Electrical Engineering; the Faculty of Sciences; the Doctoral School; the Department for Distance Learning; the Department for Teacher Training and Continuing Education. The organizational subdivisions mentioned above are conducting teaching activities, in particular, scientific researches and training activities, which are in accordance with the mission of the University.

All the study programs of the University are subject to the approved areas at the national level and take into account the development of skills corresponding to qualifications from the national nomenclature of qualifications. Each study program is based on documents that include: *general and specific objectives of the programme; the educational curricula* which makes use of ECTS credits in assessing subjects; *subject description; organization and content of the exam for the completion of studies;*

*the logical sequence of study subjects* that ensure achievement of the objectives of the programme; *didactic activities schedule*, which establishes normal hours for teaching and seminars. At the same time, a more flexible education through the introduction of optional subjects was taken into consideration.

**Table 6. Statistics of the number of students based on cycles and the year of study in the academic year 2014-2015**

| Year of study                      | Number of students in the academic year 2014-2015 |             |                        | Total/year of study |
|------------------------------------|---|-------------|------------------------|---------------------|
|                                    | Day Courses                                       |             | Distance Learning (DL) |                     |
|                                    | No tuition fee                                    | Tuition fee | Tuition fee            |                     |
| <b>CYCLE I- BACHELOR PROGRAMS</b>  |   |             |                        |                     |
| I                                  | 691   | 11          | 40                     | 742                 |
| II                                 | 563   | 36          | 64                     | 663                 |
| III                                | 529   | 124         | 77                     | 730                 |
| IV                                 | 275   | 75          | -                      | 350                 |
| <b>TOTAL CYCLE I</b>               | <b>2058</b>                                       | <b>246</b>  | <b>181</b>             | <b>2485</b>         |
| <b>CICLUL II- MASTER STUDIES</b>   |   |             |                        |                     |
| I                                  | 215   | 208         | -                      | 423                 |
| II                                 | 223   | 160         | -                      | 383                 |
| <b>TOTAL CYCLE II</b>              | <b>438</b>  | <b>368</b>  | <b>-</b>               | <b>806</b>          |
| <b>CYCLE III- DOCTORAL STUDIES</b> |   |             |                        |                     |
| I                                  | 14  | 20          | -                      | 34                  |
| II                                 | 20  | 17          | -                      | 37                  |
| III                                | 11  | 17          | -                      | 28                  |
| IV                                 | 2   | 6           | -                      | 8                   |
| <b>TOTAL CYCLE III</b>             | <b>47</b>   | <b>60</b>   | <b>-</b>               | <b>107</b>          |
| <b>TOTAL</b>                       | <b>2543</b>                                       | <b>674</b>  | <b>181</b>             | <b>3398</b>         |

The study programmes are consistent in terms of content, regardless of the form of education (day, DL), instead, they are differentiated depending on the means of teaching - learning used. The University of Petroșani has a Department for Distance Learning which, together with the Faculty of Sciences coordinates the implementation of academic programmes awarding bachelor degrees, as well as the human and material infrastructure needed.

The University of Petroșani was the lead partner in the project POSDRU/87/1.3/S/64273 – *the Development of human resources in higher education for the use of e-Learning System* carried out in the period 2010-2013, which targeted the implementation of an e-Learning platform at the University of Petroșani and the formation of a common database, together with the University "Oil and Gas" in Ploiești. Through this project, teachers who made up the target group were trained in order to elaborate didactic materials in formats specific to e-Learning, which form the database system. It is desirable to continue to expand the use of e-Learning platform by students from all the schools of Bologna cycles (bachelor-master-doctoral), as well as by specialists who attend different postgraduate training programs within the

University of Petroșani, as a main method of operationalizing the concept of *Life Long Learning*.

Cognitive and professional relevance of the study programmes is defined in terms of the pace of development of knowledge and technology in the field of labour market requirements and qualifications. The institution has mechanisms for the annual analysis of the activity and knowledge transmitted and assimilated by the students, as well as for the identification of changes that occur in the description of qualifications and of their impact on the organization of study programmes (*Regulation on the assessment of the quality of teachers, Regulation related to the initiation, approval, monitoring and periodic evaluation of the study programs*, adding the study programs of the University of Petroșani to the RNCIS portal).

There were created mechanisms and tools for obtaining feedback from students and graduates (*Sheet for monitoring the employability of graduates, Regulation on the evaluation of teachers, ALUMNI Association*); these mechanisms provide information on the relevance of training offered by the University on the one hand, and on the other hand, it is a prerequisite for improvement and periodic reviews of study programmes.

Knowledge, skills and abilities acquired during the study programmes at the University of Petroșani allow bachelor cycle graduates to enter the labour market, to develop their own business, to continue university studies in the next cycle and to update permanently their level of training. In the case of bachelor studies within the University, the share of the last two groups of graduates admitted to master programmes is highlighted in table 7.

**Table 7. The share of undergraduate students who attend master programmes**

| Faculty                               | The share of undergraduates of academic year 2012-2013, attending master studies in 2013-2014 | The share of undergraduates of academic year 2013-2014, attending master studies in 2014-2015 |
|---------------------------------------|---|---|
| Mine                                  | 40,33%  | 40,96%  |
| Mechanical and Electrical Engineering | 31,55%  | 46,60%  |
| Sciences                              | 31,80%  | 40,70%  |

A significant number of graduates of previous master studies organized by the University of Petroșani are involved in scientific research or doctoral programs.

The University uses modern technologies of training. Large auditoriums and computer labs are equipped with multimedia facilities. Smart boards or programs for monitoring the work of students in computer laboratories are used. In order to accumulate information, lab courses and manuals can be found both in printed and in an electronic format. It encourages learning through projects, students being trained in solving issues of research and involved in administrative and technical activities.

The relationship between student and teacher is one of partnership, where each assumes the responsibility for learning outcomes. Learning outcomes are explained and discussed with students in terms of their relevance to their development. Teachers use educational resources: e-mail, personal web page for each

topic, bibliography, Facebook pages of the University/Faculties, electronic resources and dialogue with students, and auxiliary materials.

*The Central Library*, organized as an independent entity within the University of Petroșani, allows free access of all students, regardless of the academic curriculum, to their own volumes of textbooks, treatises, bibliographic references, chrestomathies, anthologies, in classic or electronic format. Each academic department, also has own libraries with specific book titles grouped by subjects and research domains addressed by teachers.

The Central Library of the University of Petroșani provides a number of 200 seats in 3 reading rooms. As a result of constant concerns regarding the enrichment of book holdings and publications, the Central Library of the University of Petroșani has today over 298,351 volumes which correspond to 93,553 titles; out of the 298,351 volumes (253,663 published in Romanian and 44,688 in foreign languages), 217,772 are books, 21,401 are periodical publications, 56,803 are State standards, 1,708 doctoral theses and 667 are non-publications.

The library holdings in Romanian and foreign literature include a sufficient number of copies to cover all the curricula for bachelor and master studies. Thus, there are 183,152 volumes of applied science; 59,277 volumes of exact sciences; 18,477 volumes of social sciences; 20,894 volumes of language and literature and 16,551 volumes related to other fields (culture, religion, art, sports, geography etc.).

At the same time, the Central Library of the University of Petroșani is conducting an intense domestic and international exchange of publications with a significant number of academic and research institutions from abroad.

The University also manages an operational Printing House, which is equipped with technologies that enable the printing of necessary teaching resources in terms of quality and efficiency, the majority of them being published by the Universitas Publishing House.

### **3. THE QUALITY OF HUMAN RESOURCES**

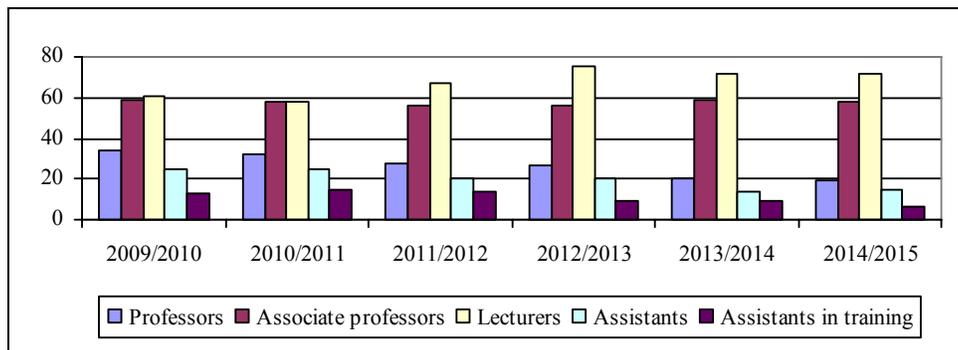
Achieving the goal of the University can be possible with direct contribution from the teaching staff that has the responsibility to conduct both educational processes and research activities.

Academic programmes and scientific research activities are carried out by a teaching staff that comprises 170 full time teachers (Table 8, Figure 1), plus 49 associate teaching staff: the didactic activity is supported by 91 members of the auxiliary teaching and research staff and by 74 members of administration staff.

There was always a concern to support the occupation of vacant teaching positions, by organizing selection exams, in accordance with legal procedures, for 9 teaching positions in the academic year 2012-2013, for 15 teaching positions in the academic year 2013-2014, and 16 teaching positions in the first semester of the academic year 2014-2015. These selections were aimed at attracting valuable young people, while increasing the quality and efficiency of learning processes, towards an academic career and at promoting university teachers, with outstanding results, to the higher ranks of the academic hierarchy.

**Table 8. Dynamics of the teaching staff involved in bachelor and master studies**

| Academic Year | Total Number of Positions | Of which: |     | Professors |    |    | Associate Professors |    |    | Lecturers |    |     | Assistant Professors |    |    | Assistants in training |    |   |
|---------------|---------------------------|-----------|-----|------------|----|----|----------------------|----|----|-----------|----|-----|----------------------|----|----|------------------------|----|---|
|               |                           | O         | V   | T          | O  | V  | T                    | O  | V  | T         | O  | V   | T                    | O  | V  | T                      | O  | V |
| 2009-2010     | 373                       | 192       | 181 | 45         | 34 | 11 | 89                   | 59 | 30 | 157       | 61 | 96  | 69                   | 25 | 44 | 13                     | 13 | - |
| 2010-2011     | 375                       | 188       | 187 | 49         | 32 | 17 | 80                   | 58 | 22 | 159       | 58 | 101 | 64                   | 25 | 39 | 23                     | 15 | 8 |
| 2011-2012     | 356                       | 185       | 171 | 33         | 28 | 5  | 69                   | 56 | 13 | 195       | 67 | 128 | 45                   | 20 | 25 | 14                     | 14 | 0 |
| 2012-2013     | 348                       | 187       | 161 | 30         | 27 | 3  | 74                   | 56 | 18 | 193       | 75 | 118 | 42                   | 20 | 22 | 9                      | 9  | 0 |
| 2013-2014     | 308                       | 174       | 134 | 21         | 20 | 1  | 64                   | 59 | 5  | 187       | 72 | 115 | 27                   | 14 | 13 | 9                      | 9  | - |
| 2014-2015     | 301                       | 170       | 131 | 23         | 19 | 4  | 65                   | 58 | 7  | 181       | 72 | 109 | 26                   | 15 | 11 | 6                      | 6  | - |



**Figure 1. Dynamics of the teaching staff involved in bachelor and master studies**

When creating the teaching staff sheet, the following ARACIS requirements must be met:

- ✓ the permanent teaching staff in higher education, retired from old age or for other reasons carrying out academic activities as associate professors does not exceed 20% of the total positions in the job list and does not cover more than one chair within the University;
- ✓ for each programme, tenure teachers cover more than 70% of jobs, among which at least 25% are professors and associate professors, but not more than 50%;
- ✓ filling the vacancies by associate professors was done according to the law: for every associate professor, there is the written consent of the institution regarding the primary position of the person concerned in order to be able to carry out educational activities within the University of Petroşani. This agreement, together with the other documents provided for in the *Methodology regarding the vacancies in the list of titles of associate teaching staff*, are kept in the files of every associate teacher in the Human Resource and Payroll Department;
- ✓ professors with tenure hold the academic title of Doctor or they are attending doctoral studies in fields according to their teaching subject; the teaching staff paid by the hour must have initial training and qualifications in the field of the subject they teach. This correspondence is demonstrated by documents from the personal files of each associate teacher;

- ✓ persons occupying the positions of Assistants have a confirmed academic training or they are enrolled in training programs in progress, organized by the University, within the Department of Teacher Training - DPPD.

#### 4. THE QUALITY IN INFRASTRUCTURE

The University campus extends over an area of 10 hectares and it is arranged in such a way as to ensure the conditions for a pleasant and active student life through its facilities: auditoriums and modern laboratories, computer networks, Internet access, library and periodicals, dormitories for student accommodation and restaurants for dining, clubs, sports centres and fields, tourist facilities (tables 9 and 10).

**Table 9. Learning and teaching facilities within the University of Petroșani**

| No.          | Description                        | Number     | Area (m <sup>2</sup> ) |
|--------------|------------------------------------|------------|------------------------|
| 1.           | Auditoriums                        | 15         | 1.842,55               |
| 2.           | Seminar rooms                      | 17         | 527,82                 |
| 3.           | Teaching and research laboratories | 115        | 8.306,67               |
| <b>TOTAL</b> |                                    | <b>147</b> | <b>10.677,00</b>       |

**Table 10. Other facilities within the University of Petroșani**

| No.          | Description                             | Number   | Service area (m <sup>2</sup> ) |
|--------------|---|----------|--------------------------------|
| 1.           | Dormitories                             | 5        | 8.665,31                       |
| 2.           | Canteens                                | 1        | 1.130,51                       |
| 3.           | Sports center                           | 1        | 870,02                         |
| 4.           | Library (including the Printing Studio) | 1        | 2.252,66                       |
| <b>TOTAL</b> |   | <b>-</b> | <b>10.665,84</b>               |

Over the years, these facilities have been maintained and upgraded from own funds and from funds received from the national budget. These facilities of the University of Petroșani, comply with the standards imposed by the necessity of carrying out a high quality education process, thus meeting the condition of space allotted per student as determined by ARACIS rules, both in terms of lecture rooms (min. 1 sqm/place) and seminar rooms (min. 1.4 sqm/place), and in terms of teaching and research laboratories.

From functional point of view, educational facilities are in a good technical condition, they are organized and utilized according to programs of study, number of student groups and equipment necessary for conducting the educational process. In recent years, the situation of laboratories in the University of Petroșani has improved both in terms of modernization of existing equipment, and in terms of setting up and equipping new premises for carrying out applied research activities: auditoriums are equipped with multimedia equipment, thus new teaching methods can be applied; all departments have laboratories adequately equipped according to the subjects within the

programmes, and IT rooms with Internet connection. Research laboratories have appropriate equipment and tools that meet the requirements.

Teaching facilities (lecture rooms and seminar rooms) are equipped with technologies that enable communication and learning. Comparing the technical equipment within lecture rooms, seminar rooms and laboratories results in highlighting the following aspects:

- ✦ laboratories that are used for subjects within the curricula of study programs are equipped with computers and instruments of high standard levels imposed at national level;
- ✦ equipping the university with computers is in concordance with the requirements of modern education, the ratio students/computers/teaching hour being 1:1;
- ✦ the assignment of lecture rooms, seminar rooms and laboratories takes into consideration the activities from the curricula and the number of students (series, groups, subgroups) in each study programme;
- ✦ the software used is specialized on the fields of applications specific to each subject;
- ✦ all dormitories have Internet connection.

In addition, research infrastructure includes a range of performance equipment purchased through grants and research contracts, and through ongoing POSDRU projects carried out by the University during 2010-2014.

The University has a computer system which facilitates the collection, processing and analysis of data and information relevant to the assessment and institutional quality assurance: University Management System (UMS). UMS deals with various issues existing in the academic process; among the specific academic areas, it is worth mentioning the following: curricula, assessment systems with credits; admissions and admission sessions; transcripts and school records; students and their educational trajectories; organization based on modules, groups and subgroups of students; session of exams and grades obtained at examinations; scholarships; fees and financial obligations of students; situations and school analyses dedicated to university management; Bachelor's Degrees and diploma supplements etc.

## **5. STUDENTS' LIFE QUALITY**

The University of Petroșani **uses a transparent policy for the recruitment and admission of students**, based on its own *Methodology*, elaborated and publicly announced at least six months before organizing the admission exams. Admission is based solely on the candidate's academic skills and does not apply any kind of discriminatory criteria.

The educational offer is presented and supported in the most efficient way through the mass media: written press, radio, television, the publishing of informative guides, promotional flyers, posters. In printed media there are published materials relating to the admission of students, which are also broadcasted as news programs, interviews and coverage by radio and television stations. The University of Petroșani has used other methods of impact as well: "*Open Gates Day*"; visiting high schools in

order to present the University's study programmes to the groups of graduating students; participation in academic workshops such as "*The Educational Arena*" or "*The International Education Fair* in Chişinău" etc.

Admission to the University of Petroşani is carried out in compliance with the Order of the Minister of the Ministry of National Education regarding the general criteria for organizing and conducting the admission process to Bachelor's Degree courses, Master's Degree courses and Ph.D. courses, a *Methodology for Organizing and Conducting the Admission Exams to the University of Petroşani* and the *Methodology regarding the Organization and Conduct of the Admission to Doctoral Studies*. In the academic year 2013-2014, the admission of candidates to the University of Petroşani is done through an admission contest, based on the applicants' files, by assessing the results obtained by the candidate in previous studies. There is one exception – the Master's Degree program in *Computerized Mine and Cadastral Surveying* from the field of *Mines, Oil and Gas* – in the case of which the admission score is calculated as the arithmetic mean average between the mark obtained by the candidate in the oral exam (with a share of 35%) and the average obtained by the candidate in the Bachelor's Degree exam (which counts for 65%).

Admission to doctoral programmes comprises 2 tests: a foreign language exam and an oral exam assessing performance in the specific field of the degree.

**The professional activity of students**, i.e. the rules and regulations governing the main aspects of academic activity - admission and registration of students, studies, making study contracts, students' rights and obligations, the application of the system of transferable credits, organization of the educational process, the assessment of knowledge, the promotion of the academic year, transfers, continuing studies, interruption of studies, re-enrollment, graduation etc. - are stipulated in the *Regulation on the professional activity of students (Bachelor's and Master's Degree levels) of the University of Petroşani, based on the ECTS System*, approved by the Senate of the University of Petroşani.

The results obtained by students during academic programmes shall be entered in the *Official Academic Record*. Upon graduation, graduates receive, according to law, a *Diploma of Graduation and a Diploma Supplement*. The process of awarding graduation diplomas and certificates is based on the *Regulation on the system of graduation documents and educational records in the University of Petroşani* and with the *Methodology concerning the organization of exams on completing Bachelor's Degree and Master's Degree studies* in accordance with provisions established by law.

Compliance with the requirements concerning the registration of students, completing the Official academic record, organizing the graduation exams and awarding diplomas etc. are activities monitored by the Chief Secretary of the University and they are examined at regular intervals through internal audits.

On the other hand, **the University has high standard social, cultural services and sports facilities:**

- × **accommodation facilities**, comprise 627 beds in five dormitories, which are available for 3110 undergraduates/Master's Degree students attending full-time Bachelor's Degree programmes at the University of Petroşani.

Hence it results an extent of 20.16% to which the applications of students can be solved;

- ✦ **sports facilities**, provide the following: a sports gym with 3 locker rooms each having bathrooms and showers; a football/rugby field with athletics track; a handball/basket court; a tennis field and a playing field with artificial turf and lightning system. There is also a covered grandstand, a sauna room and two bodybuilding rooms equipped with performance workout equipment. The students of the University of Petroșani may use the sports facilities, some of them joining the “Universitatea Petroșani” football team and the “Știința” Sports Club where they can practice the following sports - rugby, football, ski and taekwondo;
- ✦ **two restaurants**, with 260 seats for serving meals both by students and the teaching staff;
- ✦ **a Center for Career Information, Guidance and Counselling (CICOC)**, the mission of which is to provide professional information, educational assistance, counselling and career guidance for the students of the University of Petroșani, in order to acquire specific skills and competences for a certain job in the field of the study programmes;
- ✦ **a Publishing House** approved by CNCS and a Printing House;
- ✦ **a healthcare facility** staffed by two physicians, one of the positions mentioned being vacant at present.

Moreover, students of the University of Petroșani benefit from the services of **the Student Culture House**, which hosts music bands and dance clubs, art and painting workshops, climbing, caving, and ecotourism classes.

In accordance with the legal provisions in force, **the University grants financial assistance** to students with low incomes. The conditions for granting scholarships shall be determined on the basis of *the Regulation on scholarship granting* approved by the Senate of the University of Petroșani in 04.11.2014, which also covers a special category of scholarships and scholarships for athletic performance. At the same time, the University grants tuition fee discounts, as well as other forms of support for students, Master’s Degree students and PhD students staying in dormitories.

In order **to encourage students’ research activity** and to provide them with the necessary environment for revealing the results of their research, faculties organize the annual sessions of student scientific communications where, under the guidance of teachers, students from the University of Petroșani and from other universities may present their works, the most valuable being awarded. Moreover, students of the University of Petroșani attend scientific events organized in different universities: Land Forces Military Academy "Nicolae Bălcescu" Sibiu, the Military Technical Academy, "Lucian Blaga" University of Sibiu, "Oil and Gas" University of Ploiești, Politechnical University of Timișoara, Oradea University, University "1 Decembrie 1918" of Alba Iulia, "Constantin Brâncuși" University of Târgu-Jiu, the Academy of Economic Studies etc.

**High-performing students can be rewarded in other ways, as well:** substantial high performance scholarships, merit scholarships, scholarships offered by

economic agents, foreign exchange programs in universities and partner institutions within the European Union.

**The following three students organizations are present in the University - the League of Students of the University of Petroșani, University of Petroșani Students' Union and Bessarabian Students' Association.** The University management collaborates with students in making decisions involving: their didactic and scientific activity; the organization and functioning of dormitories and other services for students; promotion of the University and other such activities, students' representatives being active in all structures of administration, at both the University level and the Faculty level.

In 2009, the Association ALUMNI of the Graduates of the University of Petroșani was formed and aims at initiating activities for the support and guidance of young graduates as well as for the development of a legal framework through which to encourage relations among University graduates.

## 6. CONCLUSIONS

### 6.1. SWOT Analysis

The findings of the diagnosis of the quality of educational services offered by the University of Petroșani are summarized in the form of a SWOT diagram, which allows characterization of the evolution of University resources, in conjunction with dynamic external environment.

#### **Strengths:**

- ✘ Periodic review of the study programs allowed the transformation of the Mining Institute, based on departments related to the mining industry into a comprehensive University, adapted to the needs of the society, by making the curricula compatible with national and European reference practices;
- ✘ The University organizes doctoral programs in the fields of: *Mines, Oil and Gases; Industrial Engineering; Electrical Engineering and System Engineering*, with topics relating to sustainable development;
- ✘ The University has a valuable teaching staff, with qualifications in their field of activity, able to provide a modern education, with emphasis on the student;
- ✘ Information – research resources, publications and subscriptions to specialized magazines provided by the University Library, which can be permanently renewed and are accessible to the entire academic community;
- ✘ Most of the academic programs include in their curricula practical activities, which are conducted out in modern laboratories, and the fact that some students carry out a direct productive activity represents an important base for assimilating theoretical knowledge and their fast integration on the labour market;
- ✘ The e-Learning platform of the University is a free portal for the teaching staff and for students, supported by e-Learning instruments and data bases;
- ✘ A consolidated infrastructure of the University, privately owned in a share of 100%, was continuously developed and updated ensuring good learning conditions and social services for the;

- ✗ The university campus has permanent connection to the Internet, both in learning facilities and in dormitories;
- ✗ Accommodation facilities, canteens and cultural activities and high performance sports facilities, can be found within the University campus.

**Weaknesses:**

- ✗ The university offers some academic programs without a complete cycle of training (Bachelor-Master-Doctoral studies), situation which is determined by the reduced number of thesis advisors who activate within the Doctoral School;
- ✗ Limited information regarding the requirements on the labour market and the professional trajectory of graduates;
- ✗ The relatively high drop-out rate of students, resulting from a set of personal, social and economic factors;
- ✗ Insufficient interactions of the University with entities from the economic-social environment and the minimum support from local and county authorities;
- ✗ Insufficient international promotion of the University resulting in fewer possibilities to attract students from abroad in the academic programs of the University;
- ✗ The modern equipment in some of the learning laboratories, mostly in the research ones, is incomplete.

**Opportunities:**

- ✗ The existence of European programs for higher education and qualification in relevance fields for the University of Petroșani;
- ✗ The emergence of European research programs and priorities including sustainable development as a major priority;
- ✗ Ready access of students to literature and other information in the field of their degree, due to the development of the Internet network and of *open access* electronic platforms;
- ✗ The possibility of the University, in collaboration with local authorities, to engage itself in elaborating and implementing the strategy for the development of the Jiu Valley;
- ✗ The involvement of the University in the development of academic and scientific cooperation at international level, in traditional fields related to the capitalization of mineral resources;
- ✗ Progressive increase in the number of students, teaching staff and administrative personnel who have benefited and will benefit from mobility in programs like *LLP Erasmus* and *Erasmus+*, with positive influences upon individual career development, and also the increase of fame of the University within the European Area of Higher Education.

**Threats:**

- ✗ Decreasing government funding in recent years for higher education and research;
- ✗ Demographic evolution during the years to come that highlight the significant reduction in the number of high school graduates;
- ✗ Considerable restriction of the recruitment of potential students due to competition from other higher educational institutions, but also on account of the region's population pauperization in terms of disappearance of traditional economic activities
- ✗ Lack of interest of valuable youngsters for a University career considering the more

attractive opportunities from an economic and institutional environment, in conjunction with the low level of wages in higher education;

- ✘ Limited access of graduates on the labour market, on account of the economic crisis and the lack of national support schemes and the actual hiring incentive for young graduates;
- ✘ Delaying the adoption of an economic development strategy of mono-industrial areas (such as those in Hunedoara County and surrounding areas), which burdens the vacancy and attractiveness of jobs for graduates.

## 6.2. Measurements for Quality Enhancement

Considering the content of this diagnosis, but mostly the main weaknesses highlighted in the SWOT analysis, we propose the following measures to improve the quality at University level:

- ✘ Increase the fame of the University through the dissemination in the mass media of all the activities that would create a favourable image and a permanent involvement of *the Centre for Career Information, Guidance and Counselling*;
- ✘ Perfecting the evaluation process of academic activities by students, involving a large number of students in this action and making them aware of the impact it has on the quality of their professional training;
- ✘ Continuous improvement in the quality of teaching, by promoting a participatory and active learning centred on the student and identifying new methods for encouraging students to learn;
- ✘ Continuous development and updating of databases relating to the quality of study programmes for better monitoring and quality assessment of University study programs;
- ✘ Strengthening relationships with graduates using the mechanisms created in the University (ALUMNI);
- ✘ Performing of studies concerning the employability of graduates of the University, with support from *the Centre for Career Information, Guidance and Counselling* and from *the Alumni Association*. For the same purpose, we recommend the introduction of a new procedure for monitoring the evolution of our graduates in the first three years after graduation, and reviewing the *Graduate's Sheet for the Assessment of the Satisfaction Level*;
- ✘ Intensifying feedback between the University and the labour market through analysis and readjustment of the educational processes content of bachelor's and master's programs according to the requirements of employers with respect to the skills and performance of graduates in exercising a profession for which they have been trained in the University;
- ✘ Attenuating the trend of increasing the rate of dropping out of students, through the intensification of the tutorial program at the level of study programmes and the improvement of communication with students. At the same time, the University aims at further development of relations with the pre-university environment for increasing the quality of training of young people when applying for the University

and their correct guidance towards appropriate academic areas depending on their preferences and their level of training;

- ✘ Exploiting the advantages provided by the transferable credits in order to mitigate the tendency of reduction in the number of students: student mobility, the extension of schooling, re-attending the courses where students failed to pass the exam, interrupting and resuming studies etc.;
- ✘ Collecting more accurate information about the level of satisfaction of students in relation to the learning environment offered by the University. In this respect, we propose to the Senate, based on past experiences, that they draft and apply a unique questionnaire (form) only at the level of the University to measure the satisfaction of students in relation to the conditions of study and to the prospects offered by the University.
- ✘ Improving communication between students and the secretariats of faculties;
- ✘ Continuously assisting the University Library in the permanent renewal of the book holding and in its involvement in organizing socio-cultural events of great impact on the Jiu Valley cultural environment;
- ✘ Continuing the strategy for extending the patrimony, modernizing the learning and research equipment within the campus;
- ✘ Amplifying the development of social services for students and teaching staff.

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