An aerial, stylized illustration of a city with a large, multi-story university building in the center. The building has a grid of windows and is surrounded by other smaller buildings and streets. The text is overlaid on the image.

REPUBLIC OF ARMENIA
THE MINISTRY OF EDUCATION AND SCIENCE
NATIONAL POLYTECHNIC UNIVERSITY OF ARMENIA
(FOUNDATION)

**TEACHING STAFF DEVELOPMENT CENTRE'S
(TSDC)
OPERATIONAL PLAN
FOR**

2019 - 2021

YEREVAN 2018



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1. INTRODUCTION

National Polytechnic University of Armenia has traditionally attributed a great importance to professional development of teaching staff. It has been considered as a crucial factor for success in the fields of teaching and scientific research.

In 2006 when the concept of digital education was included in the agenda of higher education, the University established classrooms equipped with new technological facilities, developed new teaching curricula and organized new courses for lecturers. From 2006 to 2012 more than 150 lecturers attended these courses and acquired necessary qualifications for teaching in accordance with the new methods of digital education.

Meanwhile, recent developments and challenges call for implementation of newer principles in the field of higher education, most particularly application of information technologies and credit system of evaluation that would enable shaping the process of teaching in accordance with individual interests and needs of students as well as new demands of corresponding professional fields.

By its decision of 27 December 2012, the Scientific Council of the University has endorsed a fundamentally new concept of teaching staff professional development where advancement of professional qualifications of lecturers is considered to be an integral part of continuing education.

At present, more than 400 lecturers are attending the courses of the Centre. For the proper organization of the development process for the teaching staff the special system has been developed, from the information resource of which the relevant information is reflected on the Center's website <http://www.itacademy.am/tempus/printel/index.html>, and through the appropriate link, also on the university's website <https://polytech.am>.

The Centre provides educational services to the general public as well. In particular, professional development courses are offered to civil (public) servants who work in the field of information technologies, to private companies, partner organizations, etc. Since 2012 about 2000 participants have attended the courses of the Centre. It has succeeded in widening the range of offered courses and trainings, contributing to the improvement of the quality of education, active engagement and participation of students, establishment of cooperation with different state and private organizations in the country and abroad.

2. CONTENT STRUCTURE OF THE TEACHING STAFF DEVELOPMENT SYSTEM.

The content structure of the system is based on the following three main components.

- ❖ Vocational component.
- ❖ Component of proficiency of education technology tools.
- ❖ Component of the general readiness and educational reforms.

2.1. Vocational component:

This component includes a number of special vocational disciplines; the opportunity to get acquainted with the latest achievements and tools in the leading profiling enterprises, including the creation of necessary new study programs for teaching activities; knowledge of technologies and, taking into account the requirements for the quality of the implementation of study programs, the proficiency in the certain technologies.

Special vocational trainings can be conducted by both the teachers of the centre and the invited instructors, in some cases through the distance courses offered by other centres of continuing education.

The internship at the advanced enterprises of the branch is aimed at providing an opportunity

for the university teaching staff through joint discussions and working with relevant specialists to study this industry and get acquainted with the latest achievements.

The technologies for creating new study programs include acquaintance with the methodology of "Tuning", which will be necessary for the teaching staff to create new programs or to revise the educational tasks of existing programs in accordance with up-to date European requirements.

The section on the implementation of study programs provides for monitoring and evaluation of the learning outcomes, as well as the study and summarizing of the methodological and technological bases for the regular reviews of study programs that are necessary to ensure the quality of study programs in terms of ENQA standards.

2.2. Component of proficiency in the use of teaching technology tools.

The mentioned component of the content structure of the system is aimed at acquaintance with the modern technological tools of the teaching and learning. The component consists of three logically interrelated stages.

- ❖ Familiarization with modern IT tools.
- ❖ The choice of appropriate technological tools, depending on the specific areas of specialization of the teachers, as well as review of the taught disciplines on the basis of these tools.

❖ Editing materials created by the teachers and their further implementation in accordance with established procedures.

2.3. Component of the general preparation and educational reforms.

It includes the components of two subgroups.

1. General preparation

2. Educational reforms

The subgroup "General preparation" necessarily includes the study of the pedagogical and psychological issues, as well as the improvement of skills in a foreign language.

In addition to the above noted two sub-items, in this subgroup teachers are also given the opportunity to get acquainted with the historical, cultural and socio-political aspects of the country.

The introduction of the "Educational reforms" subgroup is conditioned by the requirements of the Bologna Process and includes the following major components:

❖ Strategic planning, the knowledge of which is necessary for the teacher to be able to properly participate in the work on development of the strategic tasks of the department, faculty, university and their further implementation.

❖ Quality assurance; It is planned to get acquainted with the peculiarities of the functioning of the university's quality assurance system which at present is one of the most important requirements for the higher education system.

❖ The credit system, to get acquainted with the ECTS introduced in the NPUA, study of the possibilities of its further improvement, in particular, identification and implementation of its unused capabilities.

❖ National qualification framework, which makes it possible to draw a clear view of the requirements for the study programs of different levels and their characteristics, to formulate the corresponding learning outcomes, to compare them with similar qualification descriptors of other countries, promoting the mobility of students and teachers in the European higher education area.

3. ORGANIZATIONAL STRUCTURE OF THE SYSTEM.

The organizational structure of the system consists of two main components.

1. Mechanisms for registration of the results.
2. Schemes for the timing of the process.

3.1. Mechanisms for registration of the results.

The mechanisms for registration of the results are based on the principles of the functioning of the credit system. This means that the knowledge, skills or abilities obtained under any component of the program will be valued by the appropriate number of the credits. The credits gained from various components will accumulate and show at what stage the process of the teacher's development is located. Accumulated credits are gained on the three above noted components, which have certain quantitative indicators.

The condition for completion of development is the accumulation of 30 credits in total. This indicator is conditioned by the standards of the ECTS, approved by the decree of the Government of the Republic of Armenia, according to which 30 credits are a full load for one academic semester (20 weeks).

These credits must necessarily include credits for all components. This implies components for vocational, technical instruments of teaching, general preparation and educational reforms.

3.2. The schemes for timing of the process have the following peculiarities.

1. The teacher is at the initial stage of the contract executing.
2. The teacher is in the process of executing of the contract.

In the first case, the teacher needs to organize a schedule of the development process in such a way so that up to the next contracting period accumulates the necessary 30 credits. At the same time, the process of accumulating of the credits should be evenly distributed for at least three years.

This will allow the teacher, in parallel with his teaching activities, without special overloads to undergo the process of development and acquire the right to five-year contracting.

The above mentioned evenly distribution of development over the years is also necessary for the continuing education centre in order to avoid overloading when planning the process of the staff development.

It should be noted that the above described scheme after a few transitional years will be the main scheme for the timing of organizing the development process.

During the next transitional years, for the teachers being in the status of executing of the

contract, the schemes for timing of organization of the development process will be applied.

- a. Before re-contracting, there are less than two years left.
- b. Before re-contracting, there are more than two years left.

In the first case, it is proposed to conditionally extend the expiration of the teacher's contract for one year, giving the opportunity during this time to supplement the necessary total number of credits, bringing them to 30 credits.

In the second case, when there are more than two years left before the expiration of the contract, there is no need for any additional actions, since within this time it is possible to accumulate the necessary 30 credits. This means that there is a special case of the basic scheme, where, instead of three years, the process of accumulating of the credits is distributed, at worst case, for two years.

4. THE ACTION PLAN AND IMMEDIATE TASKS OF THE NPUA TSDC UNTIL 2021.

In accordance with the objectives of the strategic plan NPUA for 2016-2020 years and the results of the activities of the working group of the NPUA within the framework of the PRINTeL project on acquaintance with the best practices of European partner universities the primary strategic task of the Continuing Education and Faculty Development Centre is the formation of a modern highly qualified teacher. It involves formation of a professional who possesses and introduces new perspective pedagogical technologies into the educational process, and also, through proper organization and updating of the content of advanced training courses, increasing the motivation of the teaching staff towards continuous improvement of professionalism and personal growth.

The Centre (TSDC NPUA) has also been assigned the task of building an efficient and cost-effective system of additional and continuing education, initiating and encouraging the mastering and implementation of new educational technologies, and making full use of the potential of the NPUA branches.

According to the decision of the Academic Council of the NPUA of 2015, the Centre is subordinate to the university's rector, however, the vice-rector for international affairs is responsible

for the process of the faculty development, external educational programmes and communications.

The staff of the Centre consists of the director, who carries out general management and is responsible for all the activities of the centre, the deputy director, who supervises the activity of the centre for the training of the teachers, and two senior specialists.

The service functions of the senior specialists of the centre include:

- ❖ ensuring uninterrupted operation of the hardware & software and network of the Centre,
- ❖ introduction of a new equipment, implementation of works related to the development and support of the Internet portal, the databases of teachers and students,
- ❖ monitoring the processes of training and retraining of the teaching staff, recording and archiving examination and final works, abstracts and internships,
- ❖ giving recommendations on improving educational processes and eliminating identified deficiencies, concluding agreements with students and visiting teachers, preparing necessary financial documents and keeping their records etc.

In the organizational structure of the NPUA the quality control of specialist retraining is carried out by a special unit.

Based on the above strategic objectives, the immediate tasks of the NPUA TSDC are:

- ❖ ensuring necessary conditions for university teachers to constantly update and improve their knowledge, take care of professional growth, develop individual style of pedagogical activity,
- ❖ improving of theoretical and practical knowledge of the teaching staff in connection with the continuous increase in requirements for the level of qualification and the need to master modern methods of solving professional problems,
- ❖ deepening professional knowledge taking into account the achievements of modern science, mastering new efficient technologies in professional activities,
- ❖ overcoming professional stereotypes, developing creative activities and eliminating gaps in the professional training of teachers,
- ❖ identifying “deficiencies” of the professional competencies of the teaching staff, necessary for the organization of the educational process, ensuring expected quality of student preparation,
- ❖ enabling the use of the modern technological tools in the educational process, such as telecommunications and computer technologies,
- ❖ developing professional competencies necessary for effective work in a changing socio-economic and cultural environment,
- ❖ contributing to the formation of a methodological culture due to obtaining additional knowledge, both basic and in the field of educational philosophy,

❖ contributing to the development of abilities to anticipate future problems of professional activities and developing advanced constructive models for their resolution.

It is fundamentally important to increase the level of openness and availability of various sources of information; meet and maintain specific information needs of all participants of the educational process.

Special attention should be paid to the responsibility of the trained teaching staff for the introduction of knowledge and technologies obtained during the training into the practice in the framework of their work. The University faculty development system should include permanent, including remote, tracking of the teaching staff activities.

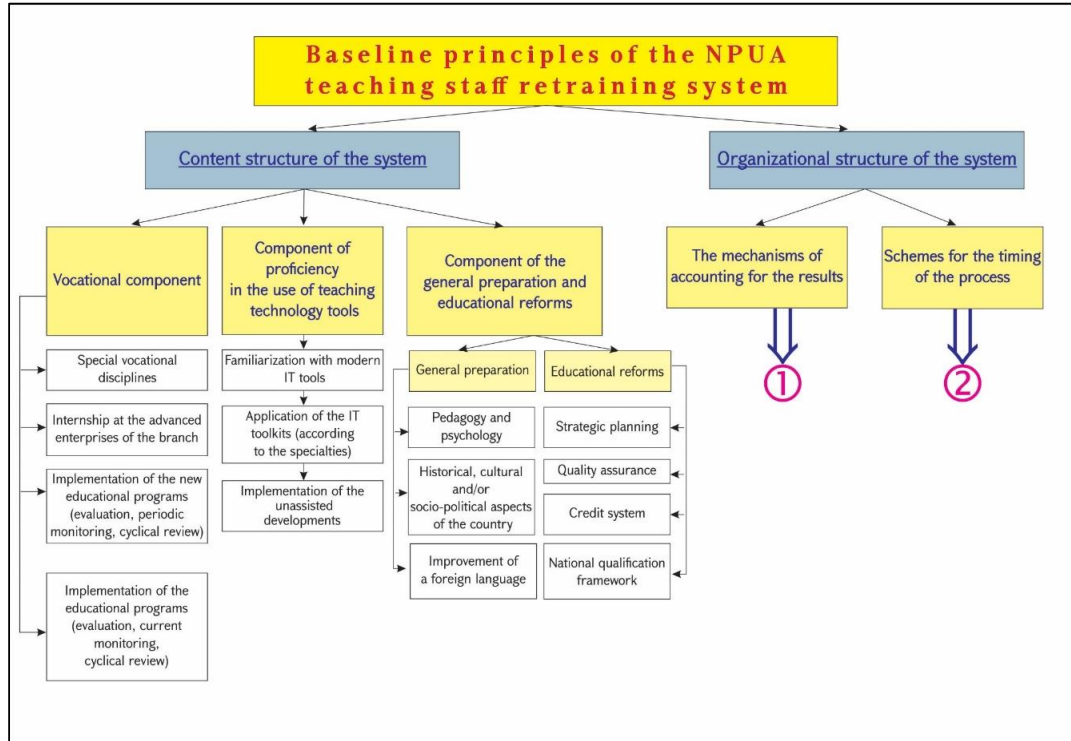
In order to overcome the centre's isolation and increase the effectiveness of training, an inter-university network and inter-university educational community platform should be organized, and an online learning environment should be formed based on the latest advances in the field of information technology.

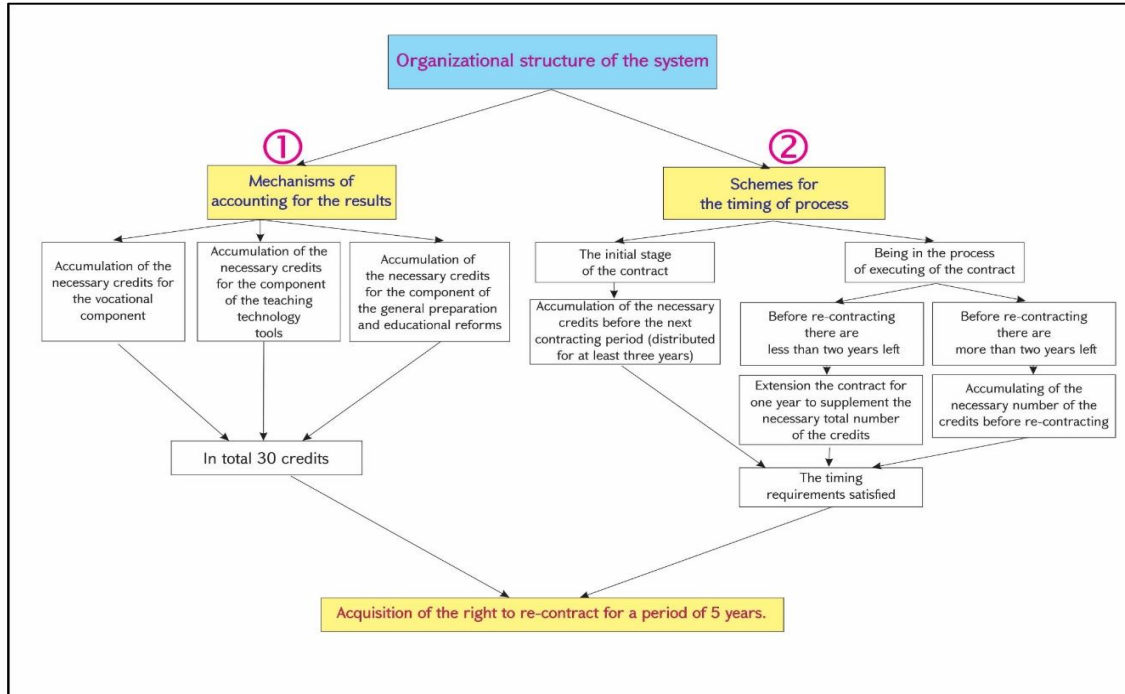
5. CONCLUSION

Summarizing the presented mechanisms and principles of organization of periodic development of teachers in the NPUA, the following points should be fixed as the fundamental factor:

1. The process of development, as a necessary condition for re-contacting, is an obligatory attribute for all teachers of the NPUA.
2. Development precedes the process of re-contracting.
3. As the basis for the organization of the development process lies the ECTS, which enables the teacher to distribute the entire development process at his own discretion, taking into account its individual components.
4. The final indicator of the end of the development process is the availability of a total of 30 credits accumulated by the results of a development program that includes all the content/structural components.
5. Published scientific papers and manuals prepared on the basis of research and teaching or methodological activities, as well as speeches at scientific conferences, defence of a scientific thesis and any other similar actions cannot be considered as components of development and therefore

cannot be credited. In addition to the foregoing, for the most convenient perception of the principles of the organization of development of the teachers in the NPUA on the basis of the credit system, two schemes are attached below (Fig. 1 and 2).





6.APPENDIX

6.1. List of Disciplines

1. The problems of population protection in cases of nuclear and radioactive accidents at the nuclear power stations.
2. The alternative energy sources and the energy-saving technologies.
3. The newest design methods, problems, features and order of application of the unhindered environment.
4. The modern methods of translation.
5. The digital television.
6. The modern cellular communication.
7. Applied software for solving engineering problems (LabView).
8. Applied software for solving engineering problems (Matlab, Simulink).
9. Modeling of the engineering problems.
10. The modern approaches and objects of teaching of the languages.
11. The newest technologies of production of the composite materials.
12. The third republic of Armenia in the Middle East political upgrowth.
13. The role and place of the Republic of Armenia in the context of regional upgrowth.
14. Algebra and Geometry.

15. The problems of industrial evaluation of the deposits.
16. Psychology.
17. Fundamentals of Entrepreneurship.
18. Technologies of computer engineering design (AUTOCAD, 3D st. MAX, ...).
19. Mathematical analysis.
20. Mathematical methods and models in the economics.
21. Pedagogy.
22. New technologies of teaching and their methods.
23. The modern methods of research of the technological processes.
24. Modeling of the technological processes in the LabView environment.
25. Analysis and statistics of economic activity.
26. Databases.
27. Political forecast and strategic objectives.
28. Object-Oriented Programming (C++).
29. Special course in physics 1 (Mechanics and Thermodynamics).
30. Special course in physics 2 (Optics and Electrodynamics).
31. The latest achievements in the application of physicochemical methods of analysis.

6.2. Number of teachers participating in the professional development process

Row Labels	2016-1	2016-2	2017-1	2017-2	2018-1	Grand Total
The problems of population protection in cases of nuclear and radioactive accidents at the nuclear power stations.		24				24
The alternative energy sources and the energy-saving technologies.	21	20	12	6	6	65
The newest design methods, problems, features and order of application of the unhindered environment.		5				5
The modern methods of translation.			17	8		25
The digital television.			30			30
The modern cellular communication.		17				17
Applied software for solving engineering problems (LabView).	34	24		14	19	91
Applied software for solving engineering problems (Matlab, Simulink).	35	14	31	7	12	99
Modeling of the engineering problems.		18	14			32
The modern approaches and objects of teaching of the languages.	28			16		44
The newest technologies of production of the composite materials.	29					29
The third republic of Armenia in the Middle East political upgrowth.		37				37
The role and place of the Republic of Armenia in the context of regional upgrowth.			35			35
Algebra and Geometry.	17			8		25
The problems of industrial evaluation of the deposits.	12					12
Psychology.	92	155	37	48	25	357
Fundamentals of Entrepreneurship.			45			45
Technologies of computer engineering design (AUTOCAD, 3D st. MAX,...).	34		15	9		58
Mathematical analysis.	16			9		25
Mathematical methods and models in the economics.	14				7	21
Pedagogy.	98	150	40	35	46	369
New technologies of teaching and their methods.		40	17	12	20	89
The modern methods of research of the technological processes.			13			13
Modeling of the technological processes in the LabView environment.	22					22
Analysis and statistics of economic activity.	19					19
Databases.	29					29
Political forecast and strategic objectives.	34		16		35	85
Object-Oriented Programming (C++).	26					26
Special course in physics 1 (Mechanics and Thermodynamics).			13			13
Special course in physics 2 (Optics and Electrodynamics).		8			13	21
The latest achievements in the application of physicochemical methods of analysis.		17				17
Grand Total	560	529	335	172	183	1779

6.3. Credits of teachers participating in the process of retraining in 2016-2018 (in total of 416 teachers)

