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Erasmus+

**“Promoting internationalization of research through
establishment and operationalization of Cycle 3 Quality
Assurance System in line with the European Integration”
(C3QA) project**

REPUBLIC OF ARMENIA

COUNTRY REPORT

on

Quality Assurance

of Cycle 3 (doctoral) programmes in Higher Education



Ministry of Education and
Science of the
Republic of Armenia



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National Center For Professional
Education Quality Assurance
Foundation

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Introduction

The report is produced in the framework of the Erasmus+ “Promoting internationalization of research through establishment and operationalization of Cycle 3 Quality Assurance System in line with the European Integration” (C3QA) project.

The findings in this report are derived from the fact-finding analyses which has been carried out by 3 partner higher education institutions (HEIs) functioning in Armenia

The fact-finding on the current situation of doctoral education in the Republic of Armenia (RA) is a good platform to identify the major issues in this field.

The awareness of the state of arts in the RA on the doctoral education gives us a holistic view, which in the future might be helpful in reconstructing doctoral education at the Armenian HEIs and formulating models of PhD education that best fit the Armenian context and meet societal needs.

This report is a collaborative work implemented by all the partner institutions (French University in Armenia; Ministry of Education and Science of the Republic of Armenia; National Centre for Professional Education Quality Assurance, Foundation; State Academy of Fine Arts of Armenia; Yerevan State University) and has been summarized by the National Centre for Professional Education Quality Assurance, Foundation.

1. Armenian Higher Education (HE) system

The history of higher education system of the Republic of Armenia goes back to the 14th century. The basis of the contemporary higher education was laid during the two-year existence of the first Republic of Armenia/1918-1920/ which was further developed during the 70 years of the Soviet Union and the 25 years of independence of the Republic of Armenia.

Republic of Armenia is a country with 29.743 sq. km area and with population of about 3 million (according to 2011 census – 3.019.000). After independence from the Soviet Union, the number of higher education institutions has continuously grown, reaching its peak in 1997 with 107 HEIs. Currently there are 23 state Higher education institutions with their 14 branches, 31 private HEIs, 5 HEIs with intergovernmental agreements, 7 branches of foreign public and private HEIs.

About 80 % of the Armenian HEIs are located in Yerevan, the capital of Armenia. The overall number of HEI students in all 3 cycles is approximately 100 thousands.

The types of Higher Education institutions (HEIs) functioning in the Republic of Armenia (RA) are the following: Universities, Institutes, Academies, Conservatory.

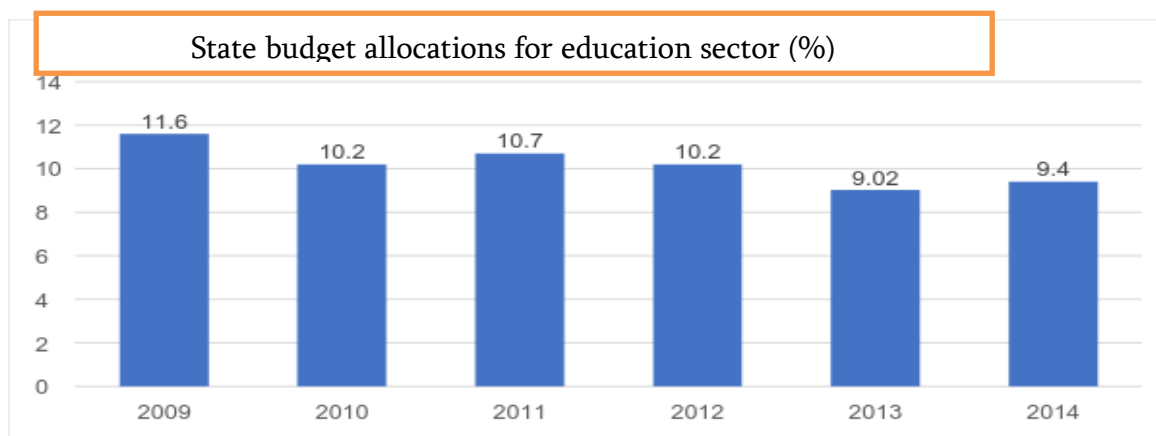
- **University:** HEI providing higher, postgraduate and supplementary education in different branches of natural and sociological fields, science, technology, and culture, as well as providing opportunities for scientific research and studies.
- **Institute:** HEI conducting specialized and postgraduate academic programs and scientific research in a number of scientific, economic and cultural branches.
- **Academy (educational):** HEI, the activity of which is aimed at the development of education, science, technology and culture in an individual sphere; it conducts programs preparing and re-training highly qualified specialists in an individual field, as well as postgraduate academic programs.
- **Conservatory:** HEI preparing specialists in the field of music, providing qualification development and postgraduate academic programs.

The state HEIs in Armenia are autonomous, non -profit legal state entities which possess, utilize and manage the property allocated to them according to their mission

and policies developed by the founder (the government). The HEI independently defines its budget and the usage of the funds received from other non-state sources, including the size and amount of salaries and remunerations to be paid to the faculty and staff. The funds received from the state budget constitute only part of the HEI's overall budget and can be used for a specified purpose according to the regulations assigned by the legislation. The HEIs are also free in forming their internal organizational structure.

Tuition fee levels for both domestic and international students can be set freely by the institutions and money is retained without affecting the budget allocation from the government.

The state budgeting of HEIs in Armenia is around 15-25 percent. In recent years, about 10 percent of state budget expenditure has been allocated to education in Armenia.



The Government expenditure on education as percentage of GDP is 2.4%.

Missions of the Armenian HEIs mainly refer to the implementation of high quality education programs and scientific research on socio-economic, humanities, science, medicine, engineering, culture, fine arts, armenology and other disciplines. Innovation, student-centred teaching and learning are other mission components for some universities in Armenia.

Prior to the 1999-2004 reforms, the Armenian higher education qualification was a one-tier: Specialist Diploma (five-year programme). The content for this

qualification was based on a state educational standard for the given discipline or professional sector. At the postgraduate level, there were two research degrees: the Candidate of Sciences (3 years of full-time studies) and Doctor of Sciences degrees. The Doctor of Sciences degree programme did not have a set duration.

The Armenian Law on Education (1999), Law on Higher and Postgraduate Professional Education (2004) (HPPE) which is currently under revision, as well as Law on Scientific and Scientific-Technical Activities (2000) constituted the legal framework for transition from a one-tier structure to multi-tier (three-tier) higher education qualifications.

The three-cycle higher education system with its bachelor's, master's, and research programs has been implemented in Armenian state and non-state educational institutions. This system provides both full-time and part-time learning and operates based on tuition-free and paid models. The educational institution is granted the opportunity to decide on the amount of tuition fees in accordance with the RA Government decision N163 "The maximum amount of tuition fees per academic degree and in accordance with accreditation results" adopted on February 19, 2015. The student's full annual workload is equivalent to 60 credits (ECTS). In order to be awarded the bachelor's degree students must meet the requirements of 240 credits for the whole programme (4 years of full-time studies), for police specializations minimum 180 credits (minimum 3 years), and for medical education-300 credits (5 years). To be awarded the master's degree students must meet the requirements of 60-120 credits, and 240 credits for medical education. Whenever part-time education is concerned, one academic year is added to the overall duration of courses. The postgraduate education is conducted through two scientific degree systems: aspirantura (candidate of science) and doctorantura (doctor of science), three to five years for fulltime and distance studies respectively.

Since 2005 under the Law on HPPE, admission to the five-year education programme of Diploma Specialist has been phased out and those awarded before 2011 have been deemed equivalent to a Master's degree.

To improve international compatibility and recognition of qualifications awarded in Armenia, the new list of Armenian higher education specializations and

qualifications, harmonized with the International Standard Classifications of Education, was developed and

approved by the Government in 2014. Currently there are 50 qualifications in 100 specialties on the Bachelor’s level and 60 qualifications in 110 specialties on the Master’s level. On the third level, there are 20 qualifications in 190 specialties.

The breakdown of students by degree level is as follows: Bachelor studies involve about 82.5% of total student population, Master’s studies –16.3%, and Postgraduate (Doctoral) studies-1.2%.

Over the last 5 years, on average 67% of the graduates with secondary education were admitted to the HEIs. During the same period, on average, 28% of Bachelor’s graduates went on to Master’s programmes, while 7% of Master's graduates continued to Doctoral studies. Although the Bachelor’s degree is mainly sufficient to enter into the labour market in Armenia, the Master’s degree is in growing demand.

Number of postgraduate students admitted to doctoral programmes (Aspirantura, Cycle 3) in 2016 with full state funding and without state funding (persons)¹

	Admitted		Including			
	T o t a l	O u t o f w h i c h	Full state funding		No state funding	
			T o t a l	O u t o f w h i c h	T o t a l	O u t o f w h i c h

¹ National Statistical Service of the Republic of Armenia, *Socio-Economic State of RA*, January-March 2017 (in Armenian), 5. Sociodemographic Sector 5.20, Post-graduate education in 2016, p. 235, available at http://www.armstat.am/file/article/sv_03_17r_5200.pdf

		h f e m a l e		c h f e m a l e		c h f e m a l e
At the scientific organisations	8 0	2 6	7 7	2 5	3	1
Out of which studying full-time	4 2	3	4 1	3	1	-
At the higher education institutions	3 1 6	1 6 4	3 0 2	1 5 1	1 4	1 3
Out of which studying	1 2 4	1 9	1 1 8	1 3	6	6

full - tim e						
Do ctor al stu den ts (as pira nts) , tota l	3 9 6	1 9 0	3 7 9	1 7 6	1 7 7	1 4
Out of whi ch stu dyi ng full - tim e	1 6 6	2 2	1 5 9	1 6	7	6

Number of postgraduate students enrolled in doctoral programmes (Aspirantura, Cycle 3) in 2016 with full state funding and without state funding (persons)²

	Enrolled		Including			
	T o t a l	O u t o f	Full state funding		No state funding	
			T o t a	O u t o	T o t a	O u t o

² National Statistical Service of the Republic of Armenia, *Socio-Economic State of RA*, January-March 2017 (in Armenian), 5. Sociodemographic Sector 5.20, Post-graduate education in 2016, p. 235, available at http://www.armstat.am/file/article/sv_03_17r_5200.pdf

		w h i c h f e m a l e	l	f w h i c h f e m a l e	l	f w h i c h f e m a l e
At the scientific organisations	2 4 6	7 1	2 3 7	6 8	9	3
Out of which studying full-time	1 2 6	8	1 2 3	6	3	2
At the higher education institutions	9 5 6	5 4 2	9 1 2	5 1 2	4 4	3 0
Out of	3 3	4 2	3 2	3 6	7	6

whi ch stu dyi ng full - tim e	0		3			
Do ctor al stu den ts (as pira nts) , tota l	1 2 0 2	6 1 3	1 1 4 9	5 8 0	5 3	3 3
Out of whi ch stu dyi ng full - tim e	4 5 6	5 0	4 4 6	4 2	1 0	8

	2012	2013	2014	
Nb of students starting a doctorate	373	395	321	
% of students coming directly after a Master of the same university				
% of Male starting doctorate	61.93%	49.62%	55.14%	60
% of Female starting doctorate	38.07%	50.38%	44.86%	39

Nb of graduates	368	239	314	
% of Male graduates	71.19%	69.46%	63.69%	62
% of Female graduates	28.80%	30.54%	45.86%	37
Nb of thesis in co-direction or bi-national direction				
Nb of students (starting a doctorate) having fundings	368	373	304	
Nb of students becoming teacher at the end of Cycle 3				
Nb of students becoming professors at the end of Cycle 3				

Number of postgraduate students graduated from doctoral programmes (Aspirantura, Cycle 3) in 2016 with full state funding and without state funding (persons)³

	Graduated		Including			
	T o t a l	O u t o f w h i c h f e	Full state funding		No state funding	
			T o t a l	O u t o f w h i c h f	T o t a l	O u t o f w h i c h f

³ National Statistical Service of the Republic of Armenia, *Socio-Economic State of RA*, January-March 2017 (in Armenian), 5. Sociodemographic Sector 5.20, Post-graduate education in 2016, p. 236, available at http://www.armstat.am/file/article/sv_03_17r_5200.pdf

		m a l e		e m a l e		e m a l e
At the scientific organisations	7 1	1 9	7 1	1 9	-	-
Out of which studying full-time	4 0	1	4 0	1	-	-
At the higher education institutions	2 6 3	1 2 8	2 5 4	1 2 1	9	7
Out of which studying full-time	1 1 6	1 6	1 1 5	1 6	1	-

Do ctor al stu den ts (as pira nts) , tota l	3 3 4	1 4 7	3 2 5	1 4 0	9	7
Out of whi ch stu dyi ng full - tim e	1 5 6	1 7	1 5 5	1 7	1	-

Enrolment, Admission and Graduation of Postgraduates by Science Fields (persons)⁴			
2012	2013	2014	2015
Number of postgraduates, total			
1 104	1 241	1 223	1 178
of which by science fields:			
physics and mathematics			
160	13 8	152	134
chemistry			
8	18	16	13

⁴ National Statistical Service of the Republic of Armenia, Statistical Yearbook of Armenia (2016), *Science*, Enrolment, Admission and Graduation of Postgraduates by Science Fields, pp. 150-151, available at <http://www.armstat.am/file/doc/99499403.pdf>

biology			
54	57	57	43
geology			
21	16	18	24
technical			
190	20 0	165	178
agriculture			
10	20	23	13
history			
39	65	68	70
economics			
218	27 1	269	256
philosophy			
34	26	24	20
philology			
69	10 1	96	86
geography			
1	-	-	-
law			
89	11 2	107	103
pedagogics			
15	19	22	39
medicine			
34	40	37	26
pharmacy			

2	3	1	2
veterinary			
4	4	4	1
art			
25	24	24	23
architecture			
38	17	17	24
psychology			
21	37	43	42
sociology			
11	12	14	13
political science			
61	61	66	68
Number of doctoral students (Cycle 3) graduating per year, total			
368	23 9	314	324
of which by science fields:			
physics and mathematics			
53	34	42	39
chemistry			
1	1	6	4
biology			
16	15	11	11
geology			
5	3	6	3
technical			
67	41	55	55

agriculture			
2	4	5	5
history			
14	5	11	11
economics			
97	60	73	83
philosophy			
4	3	5	11
philology			
30	16	18	15
geography			
2	-	-	-
law			
25	23	25	29
pedagogics			
4	6	6	7
medicine			
8	5	11	9
pharmacy			
-	-	2	-
veterinary			
-	-	-	3
art			
7	5	6	6
architecture			
11	3	3	6

psychology			
2	4	6	6
sociology			
1	-	5	4
political science			
19	11	18	17

Number of HEIs:

Number of higher educational institutions (Cycle 1) as of 2015/2016 ⁵	60
Number of higher educational institutions (Cycle 2) as of 2015/2016 ⁶	45
Number of institutions providing postgraduate education (Cycle 3) as of 2016 ⁷	58
of which	
Higher Education Institutions	20
Institutes under the RA National Academy of Sciences	31
Other Scientific Organisation	7

⁵ National Statistical Service of the Republic of Armenia, Statistical Yearbook of Armenia (2016), *Education and Culture*, Education, Higher Educational Institutions by Types of Training (the first stage), p. 124, available at <http://www.armstat.am/file/doc/99499398.pdf>

⁶ National Statistical Service of the Republic of Armenia, Statistical Yearbook of Armenia (2016), *Education and Culture*, Education, Organizations Provided Second Stage Educational Program of Higher Education, p. 138, available at <http://www.armstat.am/file/doc/99499398.pdf>

⁷ National Statistical Service of the Republic of Armenia, *Socio-Economic State of RA*, January-March 2017 (in Armenian), 5. Sociodemographic Sector 5.20, Post-graduate education in 2016, p. 235, available at http://www.armstat.am/file/article/sv_03_17r_5200.pdf

Research institutions regardless of their branch identity are engaged in research activities including fundamental and applied researches and developments in all branches of science, and also in rendering scientific and technical services.

An important step in setting up the qualifications system was 2011 Government degree on adoption of the National Qualifications Framework of Armenian (NQFA) with eight education levels. However, the first NQFA has little implications on the higher education system of Armenia. During the self-certification process of the NQFA, a range of drawbacks were identified and the most essential was incompatibility with the Qualifications Framework of the European Higher Education Area (QF-EHEA). Hence, in 2014, a draft of the new NQFA was developed, which was completely in line not only with QF-EHEA, but also with the European qualifications framework for lifelong learning (QF-LLL). The new draft of the NQFA has been discussed with the key stakeholders (universities, student bodies, employers and other social partners). Finally, in July 2016 the RA Government approved the new NQFA. The 6-8th levels of the NQFA contain HE qualifications, namely, Bachelor, Master and Candidate of Science degrees with appropriate ECTS credit ranges that has already been described above. The main change is introduced in the title of Cycle 3 qualification falling under the 8th level of the framework that previously was called a “Researcher (Scientific Degree of Candidate of Science). The qualification of researcher did not sound coherent with international standard definitions. As such the term and concept of a researcher is defined as a person who is engaged in research activities, hence the term cannot stand for a title of qualification. Therefore the definition was changed into the qualification of Candidate of Sciences who will receive a Diploma of the Candidate of Sciences. More changes occurred in the descriptors of Knowledge, Skills, and Competencies of the framework of qualifications. The final version provides more precise and in-depth understanding of descriptors within the framework. It divides the Skills section into three parts specifying “Skills to Apply Knowledge”, “Communication skills, ICT skills and Skills to Work with Data”, and “Generic Cognitive Skills”. The section on Competences shows a descriptor in the framework of “Autonomy and Responsibility”. It is contemplated that additionally higher education sectorial

qualifications frameworks (SQFs) will be developed for individual specialty areas, consistent with general descriptors of the NQFA.

**LEVELS (QUALIFICATIONS) DESCRIPTORS
OF THE NATIONAL QUALIFICATIONS FRAMEWORK OF THE
REPUBLIC OF ARMENIA FOR THE DOCTORAL DEGREE**

EDUCATIONAL LEVEL (QUALIFICATION)		3RD (CANDIDATE OF SCIENCE / DOCTORE)
General description (characteristic) of the Qualification		<ul style="list-style-type: none"> The third level degree qualifies individuals who have systematic and critical understanding and specialized research skills in one or more complex fields of scholarship or professional practice for advancing and/or creating new knowledge.
KNOWLEDGE	1. Knowledge and understanding	<ul style="list-style-type: none"> Demonstrates advanced knowledge specific to the specialty area and related intersecting fields, which applies in scientific research and professional work. Demonstrates comprehensive and deep understanding of state-of-the-art theories, approaches, new hypotheses and scientific-research methods specific to the specialty area and related intersecting fields.
	2. Applying knowledge and understanding	<ul style="list-style-type: none"> Can apply acquired knowledge and understanding, conceptual principles and advanced methods of the field to plan and conduct scientific-research activities and to give innovative solutions to the complex theoretical and practical problems.
SKILLS	3. Communication, ICT and numeracy skills	<ul style="list-style-type: none"> Can use advanced principles and methods to communicate and interpret, from multiple perspectives, new and complex theoretical and practical problems and the research results to the scholarly community and wider society. Can apply ICTs in a proficient way to implement scientific research and create new knowledge. Can evaluate and transform a wide range of quantitative and qualitative data from different interrelated fields to generate complex ideas and create new knowledge.
	4. Generic cognitive	<ul style="list-style-type: none"> Can generate new, complex and abstract ideas, offer and/or present new and original insights on current information and issues based on the evaluation of

	e skills (including making judgments)	<p>scientific-research results.</p> <ul style="list-style-type: none"> • Can design and implement original research, theorize the results of the latter, which make contribution to the scientific field and/or professional practice and are published in national and international peer-reviewed journals.
COMPETENCE	5. Autonomy and responsibility (including learning skills)	<ul style="list-style-type: none"> • Can initiate and manage complex innovative processes at the forefront of the scientific-research, academic and professional fields by demonstrating scholarly and professional integrity and autonomy. • Can create and lead a scientific-research or professional team and promote the research advancement of its members. • Is able to promote the scientific, technological, social or cultural progress of the society within academic and professional contexts. • Is able to promote the sustainable development of science, the nation and the State by protecting national and common human values.
	Workload in ECTS credits	180

The following statistics are provided by the National Statistical Service of the Republic of Armenia (Statistical Yearbook of Armenia, 2016, Chapter – “Science”):

1. DOMESTIC COSTS FOR RESEARCH AND DEVELOPMENT (in million AM Drams)

Year	2011	2012	2013	2014	2015
Domestic costs, total	926	971	956	1092	1199
of which at the expense of budg	606	675	671	825	934

etary funds					
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2. NUMBER OF ORGANIZATIONS ENGAGED IN RESEARCH AND DEVELOPMENT

Year	2010	2011	2012	2013	2014	2015
Scientific organizations, total	72	72	72	62	66	70

3. NUMBER OF EMPLOYEES OF ORGANIZATIONS ENGAGED IN SCIENTIFIC RESEARCHES AND DEVELOPMENTS

Year	Persons, total	of which:		
		researchers and technicians	support personnel	other
2011	5 718	4 748	566	404
2012	5 598	4 421	556	621
2013	5 230	4 234	605	391
2014	5 624	4 514	673	440
2015	5 044	4 164	503	377

Volume of Scientific and Technical Works (mln. grams)									
	Total				of which conducted with ones' own powers				
	2010	2011	2012	2013	2010	2011	2012	2013	2014
Volume	9	10	11	12	5	0	1	1	2
o	7	2	5	6	1	2	3	3	5
	3	3	2	3	0	3	8	8	3
	1	6	0	4	4	6	8	8	2

f s c i e n t i f i c a n d t e c h n i c a l w o r k s	· 9	· 6	· 7	· 2	· 1	· 6	· 0	· 7
R e s e a r c h a n d d e v e l o	9 4 0 9 · 5	9 9 4 3 · 9	1 1 1 7 6 · 4	1 2 3 2 1 · 0	4 9 6 6 · 4	9 9 4 3 · 9	1 1 1 0 0 · 0	1 2 2 6 0 · 3

P m e n t									
S c i e n t i f i c a n d t e c h n i c a l s e r v i c e s	3 2 2 · 4	2 9 2 · 7	3 4 4 · 3	3 1 3 · 2	1 3 7 · 7	2 9 2 · 7	2 8 8 · 0	2 7 2 · 4	

Performance of Scientific and Technical Works (mln. drams)								
	At cost of work				At cost price			
	2	2	2	2	2	2	2	2
	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1
	2	3	4	5	2	3	4	5
A c t u								

al v o l u m e o f c o m p l e t e d w o r k a n d w o r k a c c e p t e d b y c u s t o m e r	1 1 7 4 0 · 2	7 4 2 1 · 3	8 9 7 7 · 3	1 0 6 9 · 3	1 0 3 9 6 · 9	7 1 8 6 · 9	8 8 5 2 · 5	9 7 8 6 · 3
V o l u m e o f w o r k	1 0 0 7 7 ·	1 0 6 3 1 ·	1 2 0 3 3 ·	1 3 0 5 9 ·	8 1 0 0 ·	1 0 3 5 2 ·	1 1 8 4 7 ·	1 2 7 5 3 ·

k s p e r f o r m e d f r o m t h e b e g i n n i n g o f t h e y e a r	6	6	2	5	1	9	7	6
o f w h i c h: v o l u m e o f s c i e n t i f i c a n d	9 7 3 1 · 9	1 0 2 3 6 · 6	1 1 5 2 0 · 7	1 2 6 3 4 · 2	8 0 0 · 5	9 9 9 1 · 3	1 1 3 7 6 · 7	1 2 3 3 7 · 1

te c h n i c a l w o r k s (p r o d u c t i o n)								
in c l u d i n g: r e s e a r c h w o r k s	7 5 1 0 : 0	8 5 5 5 : 8	1 0 2 7 8 : 2	1 0 4 5 2 : 6	6 1 1 1 : 4	8 5 0 2 : 1	1 0 2 6 0 : 2	1 0 4 1 9 : 1
o f w h i c h: f u n d a m e	1 3 0 8 : 8	1 6 3 0 : 7	1 7 4 9 : 4	1 9 9 3 : 5	1 1 0 0 : 6	1 6 4 2 : 9	1 7 6 6 : 7	1 9 9 8 : 1

nt al re s e ar c h								
D e s i g n - e n g i n e er in g a n d te c h n ol o gi c al w o r k s	1 5 7 5 · 6	1 0 5 8 · 2	5 3 1 · 7	1 4 3 3 · 7	1 4 5 5 · 4	9 2 5 · 9	4 8 0 · 3	1 2 5 8 · 2
P re p ar at io n o f e x p	2 3 4 · 7	2 9 2 · 2	2 6 9 · 2	2 4 1 · 6	1 9 0 · 9	2 4 3 · 1	2 3 9 · 5	2 1 1 · 5

er i m e n t a l s a m p l e s (l o t s) o f p r o d u c t i o n								
D e s i g n w o r k f o r c o n s t r u c t i o n	8 9 · 2	3 7 · 7	9 7 · 3	1 9 3 · 1	2 9 · 2	5 7 · 0	5 0 · 6	1 3 1 · 9
S c i e n t i f	3 2 2	2 9 2	3 4 4	3 1 3	2 1 3	2 6 3	3 4 6	3 1 6

ic a n d te c h n ol o gi c al s er vi c e s	4	7	3	2	6	2	1	4
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The cooperation between HEIs, research institutes and private sector or state enterprises in Armenia is still rare. Participation of HE and research institutes in the transfer of modern technology to businesses is minimal. There are at least 3 main reasons for this:

- A legal system regulating cooperative activities between businesses and HEIs is needed, so that both partners could benefit from reciprocal advantages.
- HEIs do not have marketing specialists (including fundraising specialists) in their staffs knowing how to reach to the business and other stakeholders that might be willing to cooperate.
- Most HEIs and research centres are not able to conduct research on innovative technologies because they have neither access to up-to-date laboratories nor to modern equipment due to the lack of external funding.

Another major aspect is a lack of industrial demand for the services that research institutes can offer. However, some enterprises are starting to collaborate with universities or to buy-in the services of individual researchers. Some others are building up in-house research capacity or turning to emerging players that offer knowledge intensive services.

In sum, cooperation between HEIs, research institutes and businesses faces both organizational and objective/corporeal problems and is very limited in scope.

Presently, the main mechanisms for technology transfer in Armenia are mostly indirect such as:

- The inward transfer of “hard” (product, process) or “soft” (management) technology, mainly by foreign direct investment;
- The integration of local firms into the international production chain by subcontracting, outsourced assembly processes, provision of distribution services, reverse engineering of products and/or customized production and design;
- Forging co-operative industrial alliances with foreign partners and learning-by-trading.

Generally, bottom-up activities are driving domestic innovation in Armenia. This involves collaboration of industry with engineers and scientists or groups of researchers, and networking of enterprises. However, the crucial issue for the further development of applied research in Armenia is to wire-up the innovation system by encouraging interaction between business, educational and research institutions. This requires flexible configurations and direct engagement of industrialists in the process of application of new technologies. On the other hand, legislative changes targeted to stimulating integration of science and HE systems are necessary.

1.1 Doctoral education in Armenia

The Armenian higher education institutions have been conducting postgraduate programmes since Soviet times. However, after joining Bologna process in 2005, Ministry of Education and Science in cooperation with higher education institutions has launched a series of reforms in the field of higher education, including PhD programme. Currently, as it was mentioned above, all the Armenian HEIs have already adopted the 3-tiered system. During the 2010 /2011 academic year the qualification of the Researcher on the third-level was also introduced at the Armenian HEIs. The PhD programs are typically 3 years full-time, 4 years for part-time and 5 years for research applicants. For all the cases, the overall student workload is 180 ECTS credits.

The effectiveness and the quality of Doctoral programs in Armenia are influenced by several factors. Scarce research funding is a major drawback. The technical level of the infrastructure and the databases available for research are also critical factors. Although the situation has been changing for the better recent years, many universities and research organizations offering PhD programs are still having serious problems such as limited access to the electronic databases of scientific literature and information, lack of modern research laboratories and research equipment etc..

As it was stated above, the major issue for the Armenian HEIs is the lack of appropriate financing. Universities use it as a main reference point while deriving other sizeable problems such as the design and implementation of PhD programmes in accordance to the Salzburg principles as well as the development of the internal quality assurance for PhD programs, which will increase the transparency, visibility, autonomy and accountability of PhD education in Armenia.

Admission

Government of Armenia approves the number of PhD program seats represented by the Ministry of Education and Science at least 6 months prior each academic year. The admission requirements to the PhD programs are mainly regulated by the RA Governmental decrees. However, each university can set forth its own requirements in line with the doctoral program.

Applicant can be accepted in PhD program on a basis of master degree or specialized diploma. For medical professions, on a basis of doctor's certificate, case-oriented clinical medical specialties. Applicants are admitted on a competitive basis. Usually the requirements for admission involve tests in foreign languages and ICT literacy, exam in a discipline of specialization, submission of a paper on the proposed area of the thesis, a list of publications etc.

Full-time students receive scholarship from the beginning of acceptance date. According to the Government Decision of 25 February 2016 N 238-N on “Procedures for Admissions and Study in Doctoral Programmes, and Registration in Post-Doctoral Programmes and External Researcher Programmes in the Republic of

Armenia”⁸ the period of study in full-time doctoral programmes is added to the person’s formal scientific-pedagogical experience.

Supervision

According to the RA legislation, academic supervisors should have Doctor of Science degree (second level PhD degree) in the field or, in exceptional cases, Candidate of Science degree (first level PhD degree) who should obtain the Supreme Certifying Commission's authorization. For the permission a set of established performance criteria are concerned, mainly number of publication within the last 5 years (at least 30 published scientific works in the field of research). The maximum number of simultaneously supervised theses is set by each university and usually limited to five. Co-supervision is not allowed according to the regulatory framework but the universities usually informally apply the practice of co-supervision. Academic supervisors of doctoral students receive their wages calculated based on hourly rate and the number of doctoral students they supervise where for each student they are assigned to work for 50 hours annually. The HEIs may add extra remuneration from their off-budget funds according to their internal procedures. Also, the HEIs may assign hourly rate remunerations for up to 30 hours annually for academic supervisors of external researchers.

PhD awarding

The Supreme Certifying Commission sets the requirements for the content and design of the dissertation and for the procedures of its submission and defence. The compulsory exams are as follows: ITC, a foreign language and the discipline of specialization. These requirements are in contradiction with the admission requirements as PhD students have to pass the same exams twice.

For the defence of PhD theses, a PhD student must have at least six scientific articles, two of them without co-authors, or three articles, including at least one article in the Web of Science or Scopus databases of scientific publications and an article without co-authors.

⁸ Government Decision of 25 February 2016 N 238-N on “*Procedures for Admissions and Study in Doctoral Programmes, and Registration in Post-Doctoral Programmes and External Researcher Programmes in the Republic of Armenia*”, and Annulling the Government Decision of 20 July 2001 N 662

Specialized Councils are established and operated at the universities and research institutions

in accordance with the regulatory framework set by the Supreme Certifying Commission. The Councils should have at least three doctors of sciences in the corresponding field. The Councils are approved by the three-year period after which the period of its activities may be extended. Council appoints two opponents for dissertation thesis defence. The decisions of the Councils are positive if three-quarters of the members present at the meeting voted in favor.

Councils send the necessary documents to the Supreme Certifying Commission for validation of Councils' decision. The results of the focus group meetings organized and implemented by the ANQA with the relevant stakeholders demonstrated that the HEIs would like to have more autonomy in this field.

Recognition

Recognition of foreign doctoral degrees is performed either by the National Information Center for Academic Recognition and Mobility (ARMENIC), when it is undertaken for academic or professional purposes, or by the Supreme Certifying Commission of RA when the equivalent Armenian degree/diploma is sought by applicants. In the first case the recognition is performed according to the "Recommendation on Criteria and Procedures for the Assessment of Foreign Qualifications and Periods of Study" adopted by the Lisbon Recognition Convention Committee at its second meeting (Riga, 6 June 2001). In the second case the Supreme Certifying Commission evaluates foreign credentials to determine whether or not they are equivalent to the Armenian doctoral (candidate of science) degree. This procedure applies to all foreign degrees independently whether they were issued in countries that have equivalence agreements with Armenia or not. The holder of the document or his/her organization must apply to the Supreme Certifying Commission according to the respective procedure.

2. Nature and characteristics of doctorate studies

2.1 Information on Doctorate program design

In Armenia Doctoral education has traditionally been part of the postgraduate

education system and consisted of two successive scientific (research) degrees: the Candidate of Sciences and Doctor of Sciences. The Candidate of Sciences qualification is typically a three-year full-time programme consisting of coursework and a publicly defended thesis. The Doctor of Sciences qualification has two tracks: doctoral coursework or independent peer-reviewed research followed in either case by a public dissertation defence.

Both of these doctoral qualifications have by tradition been considered as paths to academic careers. Through the course of decades the main purpose of research education has been the creation of new knowledge; moreover, it gave bigger importance to the results of scholarship rather than formation of scholars with specific knowledge, capacities, and skills, including teaching skills for higher education.

In modern post-industrial societies, knowledge becomes outdated very quickly, making the training of versatile, innovative doctoral candidates a high priority. In the modern economy, their future career and employment opportunities are not limited to scholarly endeavors or teaching activities in traditional academic environment. They should also be equipped to work in the knowledge-based economy, including manufacturing, business, public and private entities, R&D centers and highly specialized services. The new generation of researchers should be competent not only in their professional area, but also have general broad preparedness, including communication, management and entrepreneurial skills. With its emphasis on narrow professional research, the traditional model of doctoral education did not foster the formation of such knowledge, skills, and capacities. Thus, it was necessary to introduce more structured, formal doctoral programs alongside, and in contrast to the traditional, informal “mentor-student” model.

The structured scientific educational programs were first piloted in Armenia in 1992 at State Engineering University of Armenia. A general (transferable) skills component was introduced across the curriculum in the three-year postgraduate program for Candidate of Sciences. The postgraduate students that completed this program, but had not yet defended the candidate’s thesis, were awarded the intermediary qualification of Researcher, as set forth in the Law on Higher

Education.

The Researcher's programme with the embedded general skills component was introduced on a nationwide basis during the 2010-2011 academic year. Currently, the majority of Armenian universities offer structured scientific-educational programmes for the qualification of Researcher, consisted of 180 credits as it is mentioned above.

The curriculum design is implemented according to internal document specific for each HEI, which regulates the structure and content of the doctoral programmes at the given university.

Introduction of a new credit system in Cycle 3 since 2017.⁹ The modules to be taken and credits they constitute are shown in the table below:

SECTIONS AND COURSE TITLES		CREDITS
LEARNING COMPONENT		50
CC.00	Compulsory Courses and Examinations	30
CC.01	Speciality (major) course that contains the code of the dissertation topic	8
CC.02	Scientific Research Methodology	4
CC.03	Professional English Language	4
CC.04	New Communications and Educational Technologies	4
I.00	Internship ¹⁰	10
OC.00	Optional Courses and Tests ¹¹	20
RESEARCH COMPONENT		130
PW.00	Required minimum number of published works on the dissertation	30

⁹ Decree of the RA Minister of Education and Science of 21 July 2010 N 1167-N on "Introduction of a Credit System in Postgraduate Professional Educational Programmes (Aspirantura and External Researcher)"

¹⁰ Those doctoral students who have 6 month of work experience may skip the internship and accumulate credits based on a letter of reference presented from the workplace.

¹¹ Doctoral student's selection of optional courses is made from the list of courses approved by the scientific council of a division the person is enrolled at (faculty, institute, centre).

	topic ¹²	
AA.00	Annual attestations	20
DPF.00	Positive feedback on the topic by the institution that approved the dissertation and its topic	80
TOTAL		180

2.2 Characteristics of the Cycle 3 study:

Case of YSU

Requirements for the content and design of the dissertation as well as for the procedures for its submission and defense are established by the Supreme Certifying Commission. Only persons holding a Master’s degree or a Diploma of Specialist qualification are allowed to apply for admission to the doctoral (postgraduate) studies on a competitive basis. In most cases, doctoral study is the continuation of the professional education in the same field. Only applicants in the Law, Medicine and Veterinary must possess an undergraduate degree/diploma in the respective field of the intended study. If the areas studied in undergraduate education and the areas of a prospective graduate thesis are different, an additional examination in this new field can be assigned to the applicant. The abilities of applicants to undertake research are also taken into account. This ability can be confirmed by writing and submission of a research paper on the proposed area of the thesis, a list of applicant’s publications, or recommendations by professors from previous studies. Prospective doctoral students are interviewed by a future supervisor who informs the admissions board of the results. Based on the results of an analysis of an applicant’s documents and interviews with the supervisor, the admissions board takes a decision on allowing the candidate to take the entrance examinations. The entrance examinations for doctoral studies include tests in foreign languages (English, French or German) and ICT literacy, and written exam in a discipline of specialization. Based on the results of the

¹² Defined in the section 10 of the Government Decision on “*Procedures for Awarding Scientific Degrees in the Republic of Armenia*”

entrance examinations, the admissions board of university takes a decision on each candidate so as to provide for the competitive enrollment of people best prepared for research and education.

Doctoral programme requires independent work on dissertation by performing an individual original research and imply a high degree of self-motivation on the part of the doctoral student. There is an annual attestation of the student by the department (laboratory). The PhD student must present an annual report describing the progress being made in preparing the dissertation as well as in preparing for the candidate examinations. The research supervisor monitors the progress of the doctoral student in fulfilling his or her individual plan.

The preparation for and the taking of examinations for the Doctoral degree are integral parts of doctoral programmes and are required of all persons seeking this degree. The following candidate examinations are always given: the discipline of specialization, a foreign language and ITC. Students seeking the doctoral degree and holding a diploma of higher education in a different scientific area than the prospective dissertation must take an additional examination in a relevant discipline. Requirements for the content and design of the dissertation (including the length of the thesis, which is set to max 150 pages) as well as for the procedures for its submission and defense are established and regulated by the Supreme Certifying Commission.

Thesis defense has several steps: first, the thesis is submitted for preliminary evaluation to the department at the doctoral student's HEI (the preliminary defense). Experts evaluate the quality and the relevance of the dissertation subject. They examine its scientific orientation, the degree of the author's personal participation in obtaining research results, and the degree of validity of the scientific findings, propositions and conclusions. Additionally, they examine the scientific value of the author's research publications, the practical value of the dissertation, the possible uses of its results and the relevance of the dissertation content to the discipline. If satisfied, the experts will recommend the dissertation for defense and submit it to the Specialized Council for preliminary consideration and further defense. Second, Specialized Council evaluates the dissertation (the preliminary evaluation). After

consideration of the dissertation, the Council reaches a conclusion as to its quality. The members of the Council also evaluate the completeness of presentation of the dissertation materials in the author's publications. A further conclusion results in the assignment of an expert (leading) organization and two official opponents, and, if necessary, the enlargement of the Specialized Council. The leading organization provides a reference. The reference must demonstrate the importance of the results obtained and provide recommendations on the application of the results and the conclusions. Official opponents are appointed by the Specialized Council from among competent professors in the discipline. The official opponent is an official reviewer who must write the reference on the dissertation, participate in person in the defense process, and present the reference orally. Third, the defense of the dissertation is undertaken in public, in the form of a scientific debate. No fewer than half of the members of the Specialized Council and both official opponents must be present at the defense. Upon completion of the defense procedure, the members of the Specialized Council vote by secret ballot on whether or not to award the Candidate of Science degree (PhD). In the case of a positive decision, the Dissertation Council must submit the applicant's documents to the Supreme Certifying Commission.

The Doctoral degree (the Candidate of Science) can be awarded in the following ways:

- through a formal full- or part-time Doctoral programmes (Aspirantura);
- through independent postgraduate studies (Degree Seeker).

The second route was rather popular in Armenia during the Soviet times when the country was very industrialized and many industry (work) based specialists were doing their researcher at work. For instance, currently there are 115 independent degree seekers registered at the Yerevan State University compared to the 450 doctoral students enrolled in the formal doctoral programmes (in 2012 there were 326 degree seekers and 440 PhD students). The defense of theses follows the regular rule, as is the case for the formal Doctoral programme.

Yerevan State University has 40 foreign doctoral students out of 450 totals (8.9%).

2.3 Positioning of Cycle 3

There are no Doctoral or Graduate schools at the Armenian HEIs in the sense as they are common in the United States and in several European countries. The first attempt to establish and run a Graduate Schools, as an organizational unit responsible for all aspects of doctoral programmes' implementation, was in State Engineering University of Armenian in the beginning of 1990s. But this successfully started pilot didn't get continuation after almost 1.5 decade of implementation due to the internal political debates between university faculties, central administration and the Graduate school.

Nowadays, a special centralized university division called "Division of Aspirantura" coordinates the work with doctoral students. This division organizes admission and enrollment processes, keeps the track of academic records of doctoral students and carries out other technical tasks. The scientific supervisors and dissertation/thesis themes are suggested by professional departments and research units/centers in line with their research capacities and priorities and then approved by respective faculties. The Division of Aspirantura provides doctoral students with information on features of their research training, as well as consultancy on different matters. At the end of each academic year the Division checks the individual study plans of students, the accumulation of ECTS credits, etc.

There are several regulations at the Armenian HEIs and research according which persons holding a doctoral degree and involved in the state funded research projects receive an extra allowance for having scientific degree. Also, in addition to the system of scientific degrees, there is a system of academic or research titles, such as a (full) Professor, Associate Professor (Docent), Lead Researcher and Researcher. The academic/research title of Docent or Researcher is conferred on the staff having 1st doctoral degree (Candidate of Science) and the academic/research title of Professor or Lead Researcher is conferred on the staff having 2nd Doctoral degree (Doctor of Science).

The order of the Ministry of Education and Science from 21 July 2010 on "Introduction of the ECTS credit system in the 3rd cycle of higher education of Armenia" sets a ground for development and adoption of so called "structured" Doctoral programmes with a compulsory educational component.

Different HEIs in Armenia adopted structured doctoral programmes containing different ratios of education to research, depending on their mission, peculiarities and/or academic disciplines. For instance, the two largest universities in Armenia, the Yerevan State University (YSU) and National Polytechnic University of Armenia (NPUA) have included in their doctoral programmes a coursework which consists of 50 ECTS credits out of 180 assigned for the Doctorate. From these 50 credits the 30 intend for courses on developing the transferable/generic skills and 20 credits assigned for the courses developing professional competences of Doctoral students. The preparation for and taking of Candidate examinations are the integral parts of all Doctoral programmes and are required of all students (and independent degree seekers) seeking a Doctoral degree.

Currently many Armenian HEIs have developed a model of tripartite agreements, which regulate mutual obligations and responsibilities, as well as duties and liabilities between a given HEI, Doctoral student and a supervisor.

Majority of the Armenian HEIs with considerable number of doctoral students have their internal rules regulating doctoral studies within the university. These rules are published in the most cases are made available for doctoral students and supervisors. Some internal regulations/rules that are typical for major Armenian universities are in the documents presented below:

- Regulation on Admission to Doctoral Studies;
- Regulation on Structure and Content of Doctoral Programmes;
- Regulation on Organization of Doctoral Studies;
- Regulation on Final Attestation and Conferring Researcher Qualification;
- Template of the Individual Work-Plan of Doctoral Student, etc.

These regulations are applied on the central level of a HEI and are mandatory for all faculties and research units/centers. Rare HEIs have special regulations against the plagiarism in doctoral studies, since this aspect is under the control of student supervisor and the Specialized Councils of the Supreme Certifying Commission operating at the given HEI. The Supreme Certifying Commission has strict rules against plagiarism, according to which a doctoral thesis could not be defended

anymore if the act of plagiarism is discovered before or during the defense stage. The Supreme Certifying Commission applies its own software against the plagiarism after submission of thesis by Specialized Councils and does not uphold a decision of the latter if any plagiarism is determined.

Doctoral programmes require independent work of students on thesis and imply a high degree of self-study on the part of doctoral students. There is, first of all, an annual evaluation of doctoral student's research activities by the department (laboratory, research unit, etc.) concerned. Student must present a report describing the progress being made in preparing the thesis as well as in taking the Candidate examinations. Research supervisor monitors a progress of a Doctoral student in fulfilling his or her individual study and research plan and gives recommendations to the department concerned on the progress made by a student. There are no other special measures preventing or reducing dropouts except the annual progress reports (presenting the research results and/or thesis chapters) made by student at his or her department.

No special trainings are provided to Doctoral students by HEIs to integrate them into the society. Instead, there are several courses/modules in the educational component of Doctoral programmes, which develop and enhance some transferable skills. Different HEIs include different courses/modules in the programmes and some commonly used modules are presented below:

- Foreign Language;
- Philosophy & Methodology of Science;
- Pedagogy & Psychology;
- Scientific Ethics;
- Academic & Scientific Writing in English;
- Business Writing & Communication;
- New Teaching & Learning Technologies;
- Information Technologies;
- Methodology & Tools of Scientific Research;
- Project Development & Management;

- Research Management;
- Analysis Methods & Problem Solving;
- Time and Career Management;
- Human & Material Resources Management;
- Intellectual Property Rights and Patenting.

Almost all full-time Doctoral students enrolled at state HEIs are studying free of charge and receive small state stipend (allowance) but not a full-fledged scholarship which could support their research activities (this is not applied to the majority of part-time Doctoral students and to the Degree seekers). Majority of Doctoral students have jobs outside of universities to support education and some of them have teaching duties within HEIs.

The cases of financing of Doctoral theses by the industry (private or state sector) are very rare. There are several cases in the field of Microelectronics and ICT Technology which are supported by the private sector (such as “Synopsis Armenia”, etc.).

There are no special alumni associations of Doctoral students. Traditionally students in Armenia continue their postgraduate studies at the same university where they received undergraduate education. Therefore, they are members of student alumni associations.

3. Internal quality assurance mechanisms

CASE of YSU

YSU QA policy was developed and approved by the YSU Academic Council (AC) in 2012 and fully complies with ESGs requirements. It defines a notion of quality at the YSU and main principles of QA, as well as goals and objectives of YSU QA system, main areas of QA, the organizational structure of QA system, QA processes and procedures as well as ongoing mechanisms of quality enhancement. In particular, the policy defines that the main goals of YSU QA system are continual improvement of quality of education and development of the quality culture. Self-assessment and improvement, expanded participation of teaching staff, students and external stakeholders as well as interconnection between internal and external QA processes

are defined as one of the main principles of YSU QA. Academic standards, programmes and courses, teaching staff, teaching & learning, student assessment, academic resources, support services and infrastructure, scientific-research activities are defined as the main areas for the YSU QA policy. Corresponding processes and procedures as well as the main players are defined for every QA sphere. Moreover, the role of the students and external stakeholders (alumni, employers and external evaluators) is clearly defined in every QA process. The policy also defines the organizational structure of YSU QA system dividing up the responsibilities between the main structural units and players involved in QA processes.

Establishment of the YSU QA system in line with ESGs requirements started in 2008. It is worth mentioning that separate mechanisms and procedures of QA had existed at the YSU prior to that, such as student surveys (since 2002), teaching staff development programmes (since 2002), public information system (since 2006), graduate satisfaction surveys (since 2008), etc. However, a number of essential mechanisms and procedures of QA were missing, and the existing ones were not integrated in a common QA system. Thus targeted activities have been carried out at the YSU during the recent years aiming at establishing a QA system meeting the ESGs requirements. Currently a number of QA mechanisms and procedures are exercised at the YSU aiming at continuous improvement of the quality of academic programmes, teaching staff and learning resources. They are as follows:

1. Student surveys on efficiency and quality of teaching (since 2002), due to which the professional and pedagogical qualities of the teaching staff as well as the quality of delivery of individual courses and study modules are evaluated. The results are used to develop and implement improving measures as well as in the tenured teaching staff re-election, promotion and rewarding processes (“Regulation of YSU Student Surveys on Teaching Quality & Effectiveness”, approved by YSU AC in 2002, amended and revised in 2003, 2004, 2010, 2016).
2. Teaching staff development programmes (since 2002) aiming at improving the professional and pedagogical skills of the teaching staff. The results are taken into account when promoting and rewarding the lecturers (“Regulation on YSU Teaching Staff Development Programme”, approved by YSU AC in 2002, amended and

revised in 2007, 2011 and 2015).

3. Graduate satisfaction surveys on the education received at the YSU (since 2008), through which the rate of YSU student satisfaction from the content of academic programmes and teaching methods, educational resources and student support services, organization of educational process and overall learning environment are assessed. The results are used for continuous improvement of the appropriate areas (“Regulation on Graduate Satisfaction Surveys from the Education Received in YSU”, approved by YSU AC in 2010, amended and revised in 2017).
4. Validation, internal peer-review and official approval of academic programmes (since 2012). These processes target QA of YSU academic programmes in the stage of their development. The justification of the newly created programmes (social need, resource provision), their compliance with the requirements of the National Qualifications Framework and educational standard as well as the development quality of the programme are evaluated by these procedures. The procedures are implemented and applied for assessment of newly developed academic programmes (“Regulation on Approval of Academic Programmes”, approved by YSU AC in 2011, amended and revised in 2013).
5. The annual monitoring and periodic review of academic programmes aims at evaluating the quality of the delivered programmes and their conformity with the set programmes goals as well as their continuous currency and relevance. The aim of this procedure is enhancement of the quality of programme implementation. (Regulation on Current Monitoring and Periodic Review of Academic Programmes, approved by YSU AC in 2011).

YSU has internal Quality Assurance Centre (QAC) since 2012. The main aim of the QAC is to promote implementation of internal QA mechanisms and procedures in line with ESGs requirements as well as continuous development of the quality culture. The QAC together with other administrative and educational units and bodies organizes, implements and monitors QA mechanisms and procedures defined by YSU QA policy.

YSU Academic Council (AC) also plays an essential role in IQA processes. It approves legal acts on QA and new educational programmes. Each semester AC

hears the reports on the results of student surveys and annual reports on graduate satisfaction survey results and makes appropriate decisions (if necessary) to improve those processes. There is also YSU AC Permanent QA Committee (QAPC), which was established in 2012 to form the regulatory and methodological basis of YSU QA processes. AC representatives of administrative and teaching staffs and student body are involved in the committee. The main functions of the QAPC are as follows:

- Development of the drafts of QA legal acts,
- Providing recommendations and suggestions on implementation of QA standards, processes and procedures as well as on approval of new and reviewed academic programmes,
- Cooperation with other YSU QA structures and units.

YSU QA policy defines centralized regulation of QA processes and their decentralized implementation. Therefore, Faculty Academic Council Permanent Quality Assurance Committees (FQAC) were established in all 19 Faculties in 2012 to effectively carry out QA processes in academic units (faculties, centers, and departments). The main functions of FQACs are:

- Providing recommendations to the faculty AC on QA issues,
- Conforming the academic programmes and courses to the requirements of YSU academic standards,
- Discussion of student survey results and suggestion of improving measures, etc.

In 2012 YSU introduced a process of institutional self-assessment and a pilot self-assessment was launched in Faculty of Biology to provide adequate basis for external quality evaluation and accreditation.

On the Doctoral level main QA processes are carried out by Specialized Councils at each university and the Higher Certification Commission of RA as described above in 2.2. The Specialized Council is responsible for the quality and objectivity of the evaluation of the thesis and the Supreme Certifying Commission supervises the activity of the Specialized Councils and even can dissolve them if the quality of their work is low. Internal QA mechanisms are mainly laid down with Doctoral student supervisor and the respective professional department through implementing an annual evaluation of student research activities (work on the thesis).

ESG PART 1	YES	NO	EXPLAIN
Does HEI have a policy to guarantee internally quality of the Degrees delivered?	YES		YSU IQA policy foresees IQA standards, mechanisms and procedures to ensure quality of Bachelor's and Master's programmes. It doesn't have reflection on the Doctoral programmes (research education).
If yes, is it made public and part of its strategic management ?	YES		It is widely disseminated and discussed among internal stakeholders and made available on YSU website. It has served as a main guiding document during development of IQA strategy of the new YSU Strategic Development Plan for 2016-2020.
If yes, do they have appropriate structure and processes?	YES		There are several central and faculty-level structures/bodies responsible for the IQA at YSU. These structures are: YSU QA Centre, QA Commission of YSU Academic Council and 19 QA Commissions of Faculty Academic

			Councils. There are also appropriate IQA procedures, which are in line with ESGs.
Are the pedagogical methods and methods of delivery assessed?	YES		Students enrolled in Bachelor's and Master's programmes upon completion of each semester evaluate the courses (effectiveness of teaching) they took part.
Does the university assess the supervision of the director of thesis		NO	Effectiveness of supervision of Doctoral theses is assessed only according to the integral criteria - the ratio of students defended their theses to the total number of students supervised by a certain supervisor.
Does the PhD student assess the supervision of his/her director during his/her thesis?		NO	There is no such kind of assessment/feedback procedures for Doctoral students but Bachelor's and Master's programme students do evaluate teaching effectiveness of their teachers.
Does the university	YES		The success (completion) rate of the Doctorate at

<p>assess the success rates at the doctorate?</p>			<p>YSU is monitored on a yearly basis and defined as a ratio of students defended theses in a given cohort of students to the total number of students enrolled in that cohort.</p>
<p>Are the criteria for the assessment made public?</p>	<p>YES</p>		<p>These criteria are included in the YSU Research KPIs (Key Performance Indicators), which is published periodically and made available on the YSU website.</p>
<p>Is assessment carried out by an external examiner?</p>		<p>NO</p>	<p>These criteria are calculated by the staff of the YSU Doctoral Education Department (Aspirantura).</p>
<p>Is there a procedure for students appeals?</p>	<p>YES</p>		<p>Doctoral students can appeal to the head of the Department, dean of the Faculty and then to the Vice-rector for Scientific Affairs on different issues related to their education, research or defense of the Doctoral</p>

			thesis.
Are there regulations for student admission?	YES		Admission criteria and procedures for Doctoral students are regulated on the national/system level (i.e. for all HEIs in Armenia) by the Higher Certification Commission (HCC) of the Republic of Armenia.
Are there regulations for student progression?	YES		Doctoral student progression is assessed on an annual basis by the specialization department based on the oral report of the student about his or her research results (work done on the thesis, published research articles, presentations in scientific conferences, etc.) as well as coursework completed.
How is the competence of teachers assessed?	YES		Supervision of Doctoral students is regulated by Supreme Certifying Commission, which has an ultimate privilege to give the right for supervision, based on the level of supervisor's qualification (only

			Doctor or Candidate of Science degrees), research field and the number and focus of the recent publications in scientific journals.
Are there fair and transparent procedures for the recruitment of staff?	YES		YSU academic staff is recruited according to the formal criteria and procedures, which are stated in the appropriate regulation adopted by YSU Academic Council in 2013. Recruitment of the academic staff is carried out on the competitive basis based on the qualification/scientific degree, research accomplishments and pedagogical experience.
Does the HEI collect analyses and use relevant information for the management of Cycle 3?	YES		The following quantitative and qualitative data are collected and used by Doctoral Studies Department: number of students admitted per specialty, number of total doctoral students, number of defended theses per specialty per year,

			<p>students</p> <p>attestation/progression results per semester and per year, number of published scientific papers, number of collected credits from coursework, number of defended theses, information on thesis supervisors, etc.</p>
<p>Does the HEI publish clear, accurate and objective information on Cycle 3?</p>	<p>YES</p>		<p>A detailed information related to the terms and conditions of: (i) Doctoral student admission (e.g. number of places per specialty and mode of study, list of entrance examinations, criteria and procedures for enrollment competition, etc.); (ii) Study in Doctoral programmes (i.e. brief description of the programmes, requirements for coursework/credits and candidate examinations, etc.); (iii) Graduation and defense. Brief abstracts of the theses to be defended and other</p>

			relevant information are made available on the YSU Web-site.
Are the Cycle 3 programs well monitored?		NO	There is no monitoring system for Doctoral programmes at YSU yet.
Are the Cycle 3 programs reviewed and modified?		NO	There are no adopted ongoing monitoring and periodic review criteria and procedures at YSU yet.
Can the PhD students make their own evaluation of skills acquired throughout their thesis?		NO	Bachelor's and Master's programme students can evaluate the knowledge and skills acquired during study in YSU through the graduate satisfaction surveys, which is conducted in YSU already 9 years. But this survey is not conducted for Doctoral students.

CASE of SAFAA

SAFAA's QA center was established in 2012 in the frames of TEMPUS DIUSAS project, and SAFAA started to develop quality culture at the institution referring to the ESG requirements. The Quality Assurance Center is an independent structural unit of the institution reporting directly to the Rector. The independence of the Center guarantees the objectivity of the self-evaluation. The Center's activities are

regulated by the Provisions of the “QA Center Regulation” adopted by the Rector. The functions of the Center are as follows:

- Coordinate QA internal processes;
- Interpret external quality assurance requirements and make them available to all stakeholders and staff involved in QA processes;
- Implement annual preparation processes for institutional and programme self-assessment reports;
- Train the staff about quality assurance approaches;
- Increase stakeholders’ awareness about the processes in SAFAA;
- Organize and elaborate on issues related to external quality assurance processes;
- Develop monitoring mechanisms that will enable to make improvements through PDCA principle;
- Promote continuous improvement of all processes in the institution and establishment of quality culture;
- Monitor the review process of Academic Programmes carried out by the Chairs to make the programmes in line with the European educational standards;
- Develop mechanisms that will enable to evaluate:
 1. teaching methodology (“Course efficiency evaluation” conducted among students),
 2. student assessment system (Survey among students and teachers),
 3. current resources in SAFAA and provided services (Survey among students and teachers),
 4. work done by teaching and administrative staff,
 5. admissions (Survey among fresh students),
 6. awareness of applicants (Survey among applicants),
 7. level of employer satisfaction with alumni (Survey among employers),
 8. level of alumni satisfaction with the education they received in SAFAA (Survey among alumni).

The survey results are available on SAFAA’s official website and represented to the management for the decision making. The survey results are discussed with the

stakeholders as well. The results reflect on the long-term and short-term plans of SAFAA as well.

Since 2012 SAFAA undertook the development of QA policy, tools and mechanisms. The main goal of SAFAA QA policy is the continuous improvement of SAFAA activities. In its functioning SAFAA values the following:

- Involvement of internal and external stakeholders in quality management system, thus making them part of SAFAA's decision making and administrative processes, development and redevelopment of Academic Programmes and a number of other processes;
- Ensuring transparency through providing information and reports on different processes to internal and external stakeholders.

SAFAA's quality policy is reflected in a number of documents that successfully coordinate current processes:

- Regulation on Department Annual Planning, Monitoring, Evaluation and Improvement
- Quality Assurance Manual ,
- Guide for Academic Programme Development and Review ,
- SAFAA's Code of Conduct, etc.

Defense of doctoral theses of SAFAA doctoral students is held by Specialized Council of National Academy of Sciences of Armenia.

For the effective functioning of the institution SAFAA takes into account the current requirements in higher education area from the perspective of internal quality assurance, SAFAA performs based on PDCA cycle.

At 3rd level there is still a need for the development of tools and mechanisms for doctoral Programme and research quality assurance taking into consideration ESG, Salzburg Principles and external QA standards.

In recent years, YSAFA attached particular importance to the development of research and revision of the research Programme in line with the international and national standards. The first and one of the most crucial steps was the involvement in the EU funded TEMPUS "VERITAS – Structural Development of the Third Cycle Based on Salzburg Principles" project (www.tempusveritas.am). Within the project

the doctoral Programme was totally revised and redesigned in line with National Qualification Framework, Salzburg Principles and national newly developed QA standards. The cooperation with national, EU partners in general and with RA Supreme Certifying Commission opens new possibilities to respond to the contemporary demands with regard to research.

For the first time, SAFAA conducted self-evaluation of the revised programme outlining the current gaps and conducting SWOT analysis. The report was externally evaluated and the recommendations are taken into account for the further improvements of the 3rd cycle at SAFAA.

ESG PART 1	YES	NO	EXPLAIN
Does HEI have a policy to guarantee internally quality of the Degrees delivered?	YES		The university has a quality assurance policy, which includes institution's all activity areas.
If yes, is it made public and part of its strategic management?	YES		Quality assurance policy is presented in YSAFA Quality assurance Handbook which is available on official website.
If yes, do they have appropriate structure and processes?	YES		They do have well structure and processes.
Are the pedagogical methods and methods of delivery assessed?		NO	In Cycle 3 the pedagogical methods and methods of delivery are not

			assessed but the university has that experience for bachelor's and master's degrees.
Does the university assess the supervision of the director of thesis		NO	The university does not have that experience yet as the cycle 3 Programme is under review. Respectively it is planned to develop tools to assess the supervision of the thesis.
Does the PhD student assess the supervision of his/her director during his/her thesis?		NO	The university does not have that experience yet as the cycle 3 Programme is under review. Respectively it is planned to develop tools for PHD students to assess the supervision of his/her director during his/her thesis.
Does the university assess		NO	The university does not have that

the success rates at the doctorate?			experience yet as the cycle 3 Programme is under review. So the university plans to assess the rates at the doctorate.
Are the criteria for the assessment made public?	YES		The assessment criteria are available on website.
Is assessment carried out by an external examiner?		NO	PHD students are assessed based on RA Supreme Certifying Commission's regulation. That is following: PHD students write a report on the work done in a year. The report also includes supervisor's opinion. The report is discussed in the chair or Scientific council session, where a decision is made on a student.
Is there a procedure for	YES		The appeal procedure is

students appeals?			carried out based on regulation adopted by RA Supreme Certifying commission.
Are there regulations for student admission?	YES		YSAFA has its admission procedure based on RA Supreme Certifying Commission's regulation. However, YSAFA is currently developing the internal admission criteria that will be additional to the general requirements.
Are there regulations for student progression?	YES		The successful and approved scientific articles of YSAFA all students are published free in YSAFA's journal for scientific articles, "Taregirq". The PHD students are to write 6 scientific articles

			<p>while they are learning. The articles should be published in journals/periodicals that are accepted by RA Supreme Certifying Comission. Besides students have the right to publish their articles in international scientific journals/periodicals like Scopus etc.</p>
<p>How is the competence of teachers assessed?</p>			<p>The university does not have that experience yet as the cycle 3 Programme is under review. Respectively it is planned to develop tools for assessing the teachers competences.</p>
<p>Are there fair and transparent procedures for the recruitment of staff?</p>	<p>YES</p>		<p>The university has fair and transparent procedures for the recruitment of</p>

			teaching, administrative and support staff also for supervisors.
Deso the HEI collect analyses and use relevant information for the management of Cycle 3?		NO	The relevant information on PHD students is kept in Research Center.
Deso the HEI publish clear, accurate and objective information on Cycle 3?	YES		Relevant information on the Cycle 3 is available on YSAFA official website.
Are the Cycle 3 Programmes well monitored?		NO	YSAFA reviewed and monitored for the first time Cycle 3 Programme within the framework of TEMPUS VERITAS (Developing of the third cycle based on Salzburg principles) project.To ensure continuous improvement and development of cycle 3 Programme, the

			<p>university plans to develop quality assurance mechanisms that are set in the Strategic plan (2017-2021) and in the Annual plan for QA Center.</p>
<p>Are the Cycle 3 Programmes reviewed and modified?</p>	<p>YES</p>		<p>The university reviewed Cycle 3 Programme within TEMPUS VERITAS project. The recommendation received in May 2017 will be embedded in the research Programme before the official launch of the new Programme.</p>
<p>Can the PhD students make their own evaluation of skills acquired throughout their thesis?</p>	<p>YES</p>		

CASE of UFAR

ESG PART 1			
	YES	NO	EXPLAIN
<p>Does HEI have a policy to guarantee internally quality of the Degrees delivered?</p>			<p>Since the term “Internal Quality” is mostly viewed within the first and second cycles of education, taking into account the fact that these cycles are the ones undergoing accreditation and subsequently an external review process, IQA is mostly guaranteed throughout undergraduate and graduate degrees and is neglected on the third cycle.</p> <p>Some HEIs might have separate regulations and/or policies on IQA, but this is not a common practice.</p>
<p>If yes, is it made public and part of its strategic management?</p>	N/A		
<p>If yes, do they have appropriate structure and processes?</p>	N/A		
<p>Are the pedagogical methods and</p>			

methods of delivery assessed?			
Does the university assess the supervision of the director of thesis			
Does the PhD student assess the supervision of his/her director during his/her thesis?		NO	There is no common practice of assessing the work of the supervisor.
Does the university assess the success rates at the doctorate?	Yes		Universities have statistic data, since the Ministry of Education and Science of the RA requests analytical data once or twice per annum.
Are the criteria for the assessment made public?	Yes		
Is assessment carried out by an external examiner?	Yes		
Is there a procedure for students appeals?		No	The student who has been rejected the being granted the degree can appeal the decision of both the Scientific Committee and the Supreme Certifying Commission.

Are there regulations for student admission?		No	
Are there regulations for student progression?	Yes		The University has regulation governing the progression of the students. In particular, student have to take different certification exams throughout their full-time study. What is more, the students have to be accredited each year in front of the Chair they are attached to, to make sure their work is in progress and to trace any divergence that may emerge.
How is the competence of teachers assessed?	Yes		Each HEI has its own regulation and/or procedure. Mostly, the competence is assessed by means of questionnaires.
Are there fair and transparent procedures for the recruitment of staff?	Yes		Staff recruitment usually follows the set principles like the ones governing recruitment at BA and MA levels. In

			particular, announcement are posted in certain newspapers, via different sites and on the website of the university highlighting the requirements and the procedure.
Does the HEI collect analyses and use relevant information for the management of Cycle 3?	Yes		
Do the HEI publish clear, accurate and objective information on Cycle 3?	Yes		
Are the Cycle 3 programs well monitored?	Yes		
Are the Cycle 3 programs reviewed and modified?	Yes		Some HEIs review and monitor their Cycle 3 programmes; however, there are no regulations and a policy governing the said procedure.
Can the PhD students make their own evaluation of skills acquired	Yes		The Universities have regulation governing the progression of the students. In

<p>throughout their thesis?</p>			<p>particular, student have to take different certification exams throughout their full-time study. What is more, the students have to be accredited each year in front of the Chair they are attached to, to make sure their work is in progress and to trace any divergence that may emerge.</p>
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4.External Quality Assurance system

Following its ratification of Bergen (Bergen Communiqué) by the RA National Assembly in 2005 steps have been undertaken to actively implement the Bologna action lines to integrate into European Higher Education Area. RA HEIs adopted internal quality assurance mechanisms based on ESG to ensure the successful implementation of their processes. Nevertheless, the delivery of doctoral programmes in line with the Salzburg Principles has been left unattended.

“The statute on state accreditation of institutions and their academic programs in the Republic of Armenia” approved by the RA Government on 30 June, 2011 N 978-Ն decree, decision of RA Government on “Standards of Accreditation of Professional Education of the RA” decree N 959-Ն (30 June, 2011) are the main documents governing the quality assurance of HEIs but these documents mainly refer to the first and the second cycles of education.

In Armenia, the external quality assurance is carried out through accreditation. The accreditation process is being performed by the ANQA.

ANQA strives to promote public trust, social cohesion, equity, responsibility and competitiveness through periodic enhancement of the quality of educational services.

ANQA carries out its mission by:

- being receptive to the needs of national stakeholders through its mandatory institutional and voluntary programme accreditation;
- aligning its QA criteria and standards with international standards and guidelines;
- ensuring international recognition, thereby assisting to strengthen the position of Armenian professional education in EHEA;
- attaching importance to close cooperation with stakeholders in the process of developing the quality assurance system.

In the RA, the external quality assurance is in line with the institution's internal quality assurance processes, and it maintains the institution's autonomy. In addition, the external quality assurance is based on the information revealed by the internal quality assurance system. The Armenian external quality assurance entails two types of accreditation: • institutional, • programme. Institutional Accreditation is the state recognition of academic and QA procedures of the TLI. Institutional accreditation is a regular mandatory process both for state and non-state institutions operating in the territory of the RA. Institutional Accreditation allows to evaluate the effectiveness of TLI operations, as well as to find out whether the TLI is in compliance with its mission, whether it follows the policy of continuous improvement and enhances the development of implemented academic programmes. Institutional accreditation is a prerequisite for Programme Accreditation. Programme Accreditation is the recognition of academic programmes and the correspondence of quality with state accreditation standards and programme accreditation criteria. Programme Accreditation is targeted at separate academic programmes. This procedure allows to periodically evaluate the effectiveness of academic programmes as well as to monitor whether it thoroughly ensures the acquisition of intended learning outcomes. The Programme Accreditation is currently carried out on the initiative of the TLI, based on voluntary basis, with the exception of medical academic programmes, the accreditation of which is compulsory. However, with the adoption of the new Law on Higher and Postgraduate Professional Education the program accreditation for all the

3 cycles will also become mandatory. As an outcome of accreditation process, the TLI or its separate academic programmes are positioned as accredited with a certain validity date.

State Accreditation Criteria and Standards serve as a foundation and framework to guide institutions in self-evaluation as a basis for assessing institutional and programme performance and to identify needed areas of improvement. The criteria, standards and performance indicators promulgated by the RA Government are reviewed and modified periodically to ensure they are up-to date, valid, relevant and consistent with the emerging trends and recent developments in the field of quality assurance and accreditation. However the cycle 3 is not yet concerned.

As an external quality assurance provider in HE, ANQA’s core activities are based on external QA principles and correspond to the standards of ESG (Part 2).

ESG standards’ reflection in ANQA activities

ESG standard	ANQA activity
2.1. Consideration of internal quality assurance	Accreditation criteria and standards of ANQA are the basis of the whole external QA process in Armenia.
2.2. Designing methodologies fit for purpose	ANQA regularly evaluates the efficiency of external QA methods with the involvement of stakeholders and makes necessary revisions.
2.3. Implementing processes	The procedure for external QA established by ANQA includes the core elements of self-assessment analysis, site visit, report and follow-up plan
2.4. Peer-review experts	Experts’ recruitment, selection, training, expert panel formation, working and monitoring procedures are established on the principles of inclusiveness,

	participation, transparency, independence and avoidance of conflicts of interest.
2.5. Criteria for outcomes	The final outcomes of an external QA process are decisions of the Accreditation Committee
2.6. Reporting	ANQA requires the expert panels to provide reports in accordance to the pre-defined template, which includes findings, considerations, conclusions and recommendations. The expert panel reports together with the Accreditation Committee conclusions and decisions are published on the ANQA web-site.
2.7. Complaints and appeals	Though new regulations are in the development phase, appeal opportunity is being considered and the corresponding procedure is established.

Mapping of ANQA criteria and Standards towards ESG

ESG Part 1 standards	ANQA criteria and standards for institutional accreditation	ANQA criteria and standards for academic program accreditation
1.1. Policy for quality assurance	1 (1.1; 1.2; 1.3), 2 (2.1; 2.2; 2.3; 2.5); 4 (4.8); 5 (5.7); 10 (10.1; 10.2; 10.3; 10.4)	7 (7.1; 7.2; 7.4)
The assessment is highly concentrated on the programme management issues, as well		

as the development of institutional capacities in general to guarantee the culture of QA within the academic environment. The efficiency of internal QA system of institutions is also in focus.

1.2. Design and approval of programmes

3 (3.1; 3.2; 3.3; 3.4)

1 (1.1; 1.2; 1.3; 1.4); 3 (3.1; 3.2); 5 (5.1; 5.2; 5.3; 5.4)

The outcome-based approach is of vital importance during assessment. The procedure of formation of an academic programme must be based on objective outcomes outlined with the involvement of internal and external stakeholders. Both formal and informal parts of creating and developing processes are assessed. All the components of academic programmes are assessed from the perspective of their accordance with the goals of the programme.

1.3. Student-centred learning, teaching and assessment

3 (3.2; 3.3); 4 (4.2; 4.6)

3 (3.1; 3.2); 4 (4.1; 4.2; 4.3; 4.4; 4.5)

Learning, teaching and assessment methods are observed to ensure that all of them are based on learning outcomes, and students' active involvement in learning and fair assessment are appreciated. The transformation to student-centered approaches was one of the main challenges during the first cycle of institutional accreditation.

1.4. Student admission, progression, recognition and certification

4 (4.1; 4.2; 4.5)

1 (1.2)

Though being mostly addressed indirectly, these processes are discussed during site-visit with alumni and students. During the assessment, expert panels give importance especially to the recognition of students, observing it under different criteria.

1.5. Teaching staff

5 (5.1; 5.2; 5.3;

2 (2.1; 2.2;

	5.4; 5.5; 5.6)	2.3; 2.4)
<p>Having a separate criterion, the teaching staff is assessed by the means of its fitness to academic programmes or their capacity to execute the programmes. Issues of qualification, professional development, motivation and research are also taken into account.</p>		
1.6. Learning resources and student support	2 (2.1); 4 (4.2; 4.3; 4.4; 4.5; 4.7); 7 (7.1; 7.2; 7.3; 7.4; 7.6)	6 (6.1; 6.2; 6.3)
<p>Learning and infrastructural resources are assessed through their accordance to requirements for conducive academic environment. Financial capacities of an institution are observed to ensure its stability and abilities to overcome challenges. The availability of learning for students with limited abilities is also assessed and thus encouraged.</p>		
1.7. Information management	2 (2.4; 2.5; 2.6; 2.7); 4 (4.2; 4.8); 5 (5.3); 7 (7.5; 7.7); 8 (8.3)	2 (2.2); 3 (3.3); 7 (7.3)
<p>Through information management the assessment is focused on the efficiency of documentation and its digitalization, the surveys to measure the level of satisfaction among students and other stakeholders, as well as other methods of collecting information and its use for improvements.</p>		
1.8. Public information	8 (8.1; 8.2; 8.3; 8.4); 10 (10.6)	
<p>The publicity and transparency of qualitative and quantitative information on all the activities of the institution are assessed keeping focus on the permanent availability of full and reliable information for the stakeholders.</p>		
1.9. On-going monitoring	3 (3.4; 3.5); 4	1 (1.5; 1.6;

and periodic review of programmes	(4.2; 4.8)	1.7); 3 (3.3); 7 (7.3; 7.5)
The properly and regularly carried out benchmarking is of a high importance for the expert panels during their assessment. Internal QA system must have working procedures for the efficient review of programmes.		
1.10. Cyclical external quality assurance	10 (10.5)	
The institutions are either currently implementing or have just passed the first cycle of external QA, and that is why there is not much reference to the cyclicity of external QA during the assessment. Still, one of the standards requires that the IQA system should provide valid and sufficient background for the success of external QA processes.		

As it was stated above cycle 3 is not yet concerned by the ANQA. However, within the frames of EU TEMPUS “VERITAS” grant project (<http://tempusveritas.am/>) ANQA has developed QA criteria and standards for the 3rd Cycle.

QA criteria/standards for doctoral education:

<p>1. Institutional strategies</p> <p><i>The Higher Education Institution’s (hereinafter HEI) research strategy is in concord with its mission and goals.</i></p>
<p>1.1 HEI has a research strategy that is adopted at the institutional level of the HEI, represents the institution’s mission and its goals for research.</p>
<p>1.2 Research strategy reflects the needs of the internal and external stakeholders and includes ethical concepts.</p>
<p>1.3 HEI has formal mechanisms and procedures to evaluate the effectiveness of research strategy and to further improve it.</p>

2. The doctoral program's ambitions are in concord with the institution's research strategy, forms part of institutional planning and resource allocation, is designed to meet new challenges and needs of global labour market.

2.1 Doctoral program is thoroughly formulated, according to the intended outcomes, is flexible, meets the needs of doctoral candidates and is in line with the institution's research strategy.

2.2 Doctoral program is contextually coherent with other relevant doctoral programs.

2.3 Doctoral program is functioning in the context of a strong research environment ensuring critical mass of researchers and relevant resources promoting interdisciplinary approach.

2.4 Doctoral program provides training in core discipline areas and transferable skills and ensures an active involvement of doctoral candidates in research activities.

2.5 Doctoral program has set criteria on the assessment of the quality of research results against achieved outcomes and mechanisms for the evaluation of the research results' social impact.

2.6 There are set mechanisms and procedures in place to ensure development, approval, monitoring and periodic review of doctoral program with an active involvement of internal and external stakeholders.

3. Admission Policy

HEI's admission policy on doctoral program is transparent, is in line with doctoral program's ambitions.

3.1 HEI has set mechanisms for promoting equitable recruitment, selection and admission procedures.

<p>3.2 Selection criteria of doctoral candidates are transparent, publicly available and are in line with the explicit outcomes of doctoral program.</p>
<p>3.3 HEI periodically analyses the effectiveness of applicants' assessment system.</p>
<p>4. Supervisor <i>HEI provides highly qualified supervisors/well-structured supervisory team to achieve doctoral program's ambitions.</i></p>
<p>4.1 Supervisors/supervisory team responsibilities, qualifications, workload, recognition criteria are comprehensively stated and described and are in line with doctoral program's ambitions.</p>
<p>4.2 HEI has supervisor/ supervisory team appointment procedures.</p>
<p>4.3 HEI has motivation mechanisms for supervisors to be involved in active researching and be part of relevant scientific network.</p>
<p>4.4 There is well-established system for periodic evaluation of supervision that foster to review existing policies and procedures for supervision and to reveal the professional needs of supervisors.</p>
<p>4.5 HEI fosters the development and professional progress of supervisors.</p>
<p>5. Research Environment <i>HEI promotes the quality research provisions by creating an environment conducive to research.</i></p>
<p>5.1 There are necessary resources for the implementation of doctoral program in accordance with its content, which effectively support the implementation of program's ambitions and create an environment conducive to research.</p>
<p>5.2 HEI monitors the scientific progress of the individual doctoral candidates by achieved scientific results and provides career development opportunities. Supervisors have primary responsibility in doctoral candidate's scientific progress.</p>

<p>5.3 HEI ensures that all doctoral candidates receive useful and regular information and advice to promote research and to have opportunity to work in research teams and different research environments.</p>
<p>5.4 HEI has sound financial distribution policy and capacity to sustain and ensure the integrity and continuity of doctoral programs at the institution.</p>
<p>5.5 HEI has mechanisms in place for the evaluation of the effectiveness, applicability and availability of resources.</p>
<p>6. Doctoral Candidates <i>Doctoral candidates are recognized as professionals with commensurate rights.</i></p>
<p>6.1 HEI has formal mechanisms to regulate relations between candidate, supervisors and institution where the rights and responsibilities of doctoral candidates are clearly formulated.</p>
<p>6.2 Doctoral candidates are engaged in governance at the university and participate in decision-making.</p>
<p>6.3 HEI has set mechanisms that ensure quality of the student services and doctoral candidates are involved in the quality assurance practices.</p>
<p>7. Internationalization <i>Internationalization is coherent with institution's research strategy and the individual needs of the doctoral candidates.</i></p>
<p>7.1 HEI promotes fruitful and effective collaboration with local and international counterparts aiming to create critical mass and networking as well as to implement joint research and doctoral programs.</p>
<p>7.2 The mobility of doctoral candidates is driven by the candidates' research projects.</p>
<p>7.3 HEI allocates sufficient financial resources for internationalization.</p>

<p>8. PhD awarding</p> <p><i>HEI has clear mechanisms for monitoring and assessment of the research results (applicable to the institutions having Specialized Councils).</i></p>
<p>8.1 Specialized Council has PhD awarding criteria that are applied and periodically reviewed.</p>
<p>8.2 HEI has set criteria for the nomination of the members of Specialized Council/s.</p>
<p>8.3 HEI periodically implements quality assurance of Specialized Council/s' activities.</p>
<p>8.4 Specialized Council/s periodically publishes reports on the development of the relevant fields.</p>
<p>9. Internal quality assurance</p> <p><i>HEI has an internal quality assurance system, which promotes continual improvement of all the processes of doctoral education.</i></p>
<p>9.1 There are well-established and publicly available policies and procedures for internal quality assurance of doctoral education.</p>
<p>9.2 The internal and external stakeholders of doctoral education are involved in the quality assurance processes.</p>
<p>9.3 HEI collects reliable information on the implemented processes through feedback mechanisms, which is evaluated for the improvement of the goals and processes of doctoral education.</p>
<p>9.4 The internal quality assurance system of doctoral education is periodically reviewed.</p>

The QA criteria and standards for PhD education have undergone a pilot during the external visits at the Armenian 11 HEIs. The “VERITAS” partner institutions have assessed criteria and standards as enhancement-led and applicable with the exception

of the criterion on PhD awarding as it touches upon the activities of Specialized Councils because it is seen as body of Supreme Certifying Commission and not of the HEI.

The criteria and standards will be presented for the approval to the RA Ministry of Education and Science after the adoption of the new Law on Higher and Postgraduate Professional Education.

The ANQA staff members have also studied the state of arts of Armenian PhD education against the Salzburg principles the results of which can be found by the following link (<http://www.anqa.am/en/publications/salzburg-principles-state-of-arts-in-the-republic-of-armenia/>).