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"Development of a flexible, innovative and practical framework for Work-based Learning in higher education of Armenia and Russia" (FlexWBL)

REPORT

On «073201.09.7 — Construction and Maintenance of Transport Ways" Curriculum Analysis

Table of Contents

Introduction

"073201.09.7- Construction and Maintenance of Transport Ways" Curriculum analysis was carried out by the NUACA Educational programs staff and Head of "Highways and Bridges" Chair Hakob Gyulzadyan within the framework of FlexWBL Erasmus+ project. The analysis allowed to reveal, within the project mentioned, the appropriate possibilities that would enable the functioning curriculum turn into an integrated curriculum (i.e. using work-based learning principles).

1. Curriculum analysis methodology and results

"073201.09.7- Construction and Maintenance of Transport Ways" Master Degree curriculum analysis has been carried out with the use of a number of indicators which have been developed, discussed and confirmed within the FlexWBL Erasmus+ project WP2.2 working package framework on the initiative of Klaipeda University. The results of the analysis are presented in Table 1 below.

Table 1. «073201.09.7 — Construction and Maintenance of Transport Ways » Curriculum analysis

NN	Indicators	Description
1	Study program code	073201.09.7
2	Study program title	073201.09.7- Construction and Maintenance of Transport Ways
3	Qualification	Master
4	Students	
4.1	Total number of the students involved in the study program	9 students
4.2	Number of working students	9 students
4.3	Number of the students working in profession	7 students
5	Curriculum development process	
5.1	Curriculum developers (name of the department)	Educational Programs Department, Specializing Chair
6	Curriculum approval process	Coordinated by the Educational Programs Department the Specializing Chair forms a working group. The curriculum draft is developed and discussed by the stakeholders. The final version of the curriculum is recommended for approval by the decision of the Chair which is presented to the Educational Programs Department. The Educational Programs Department, with accompanying report, presents it to the Scientific Council's forthcoming meeting to be discussed and approved.
6.1	The curriculum approving body	Scientific Council
6.2	Stages of Approval	1. Curriculum draft development. 2. Discussion among the stakeholders. 3. Preparation of the final version recommended by the chair. 4. Discussion and approval by the Scientific Council.
7	Study program goal and learning outcomes	The goal of the study program is to pass contemporary theoretical and practical knowledge and skills related to the field of construction, maintenance and management of transport ways, scientific and technological advance, their peculiarities and further development problems in the Republic of Armenia in such a volume and content that corresponds to the RA Quality National Framework requirements for the students to receive a Master Degree and which will ensure their effective professional activity in the future and/or during the next stage of learning.

8	Assessment of knowledge and competences	Examination, tests, course project or/ paper presentations, practical work, internship and Master's Thesis.
9	Possibilities for the students to find a job *(note the field, state or private sector enterprise, organization, company, office, etc)*	State and private organizations, companies, enterprises that deal with design, construction, maintenance and management of transport ways.
10	What percentage of the study program graduates start work immediately (average data)?	90%
11	Study program duration (note how many years/months/terms)	1,5 years / 3 semesters
12	Study program workload	
12.1	Student's work volume in hours	2700
12.2	Sum total of credits (ECTS)	90
12.3	Classroom hours	760
12.4	Individual work	1940
12.5	Number of lectures (percentage in the total)	58%
12.6	Number of practical classes (% within the total hours)	42%
13	Duration of the internship within the study program /credits acquirable	10 weeks / 10 credits
13.1	Period of the internship	May-July
14	Curriculum structure	See in Annex 1
14.1	The ratio of specializing subjects in total (in %)	75% (out of 12 subjects 9 are of narrow specialization)
14.2	The important subjects for the students who work in their profession	All the subjects included from point 4 to 12 in Annex 1
15	Syllabus elaboration *(Describe in concise the process of syllabus development process. Does it contain special academic hours envisaged for learning at the student's workplace off the University?)*	The Syllabus of specializing subjects is developed in accordance with the learning outcomes of these subjects which, in their turn, accord with the study program learning outcomes. Currently during the semester no classes are foreseen in the workplace of enterprises / organizations.
16	Strategy implemented under the study program *(Mention the students' and lecturers' norms of behavior within the study program, particularly the student's attendance, teaching methods (lectures, interactive discussions, slide shows and other methods, etc.)*	The students' attendance at the lessons, task completions and delivery in due time planned by the university is compulsory. The faculty's and students' responsibilities and rights are regulated by a number of relevant regulations.
17	Student's work load per week (note: how many hours per week on average does the student spend at the university? What percentage of these hours provide theoretical and practical	Student's work load per week makes 22 academic hours on average.

	classes?)	

2. How to make the curriculum integrated (based on WBL principles)

As a result of FlexWBL Erasmus+ Project realization it is envisaged to make some structural amendments in the Syllabus of some subjects in "073201.09.7- Construction and Maintenance of Transport Ways" curriculum, including the hours to be spent in the workplace of the companies. The specialized subjects will be identified during the project.

Annex 1. «073201.09.7 — Construction and Maintenance of Transport Ways» Master Degree Curriculum Structure

##	Subjects	Credits	Student's work volume in hours		
			Total	Lectures	Individual work
	Compulsory Disciplines				
1	Special Mathematics Course	5	150	52	98
2	Theory of Elasticity and Plasticity	3	90	36	54
3	Special Course in Material Science	4	120	44	76
4	Highway Materials and Technologies (CP)	12	360	110	250
5	Special Course in Design of Highways and Urban Streets (CP)	10	300	88	212
6	Special Course in Design of Bridges and Tunnels	3	90	36	54
7	Geotechnics	3	90	36	54
8	Modern Methods of Bridge and Tunnel Construction	3	90	30	60
9	Modern Methods of Road Pavement Design	4	120	40	80
10	Modern Methods of Pavement Management	4	120	40	80
11	Application of Modern Geodetic Surveying Devices in Road Construction	5	150	60	90
12	Construction Project Management	4	120	50	70
	Total	60			
	Research Disciplines				
13	Theory of Science and Research Work Methodology	2	60	12	48
14	Internship	8	240	0	240
15	Master's Individual Classes with Diploma Supervisor **(CW, CP)** Master's Thesis Development and Defence	20	600	126	474
	Total	30			
	Sum of Hours		**2700**	**760**	**1940**
	Sum of Credits	**90**			