



The Project:

## Modernizing geodesy education in Western Balkan with focus on competences and learning outcomes - GEOWEB

### Activity 2.1

#### A geodesy educational database report

Belgrade, July 2<sup>nd</sup>

Under the WP2, University of Belgrade with other partners and the project coordinator created the database. The database consists of:

- 1) geodesy educational institutions,
- 2) geodesy programs that actually exist in several countries around in the region and
- 3) basic information about stakeholders.

First two are described on this report while the third will be explained in separate report, under the Project activity 5.1. Interesting information was collected by online questionnaire prepared and put at the UB webserver <http://osgl.grf.bg.ac.rs/survey/accounts/login/> (Figure 1).

The screenshot shows a web browser window with the URL <http://osgl.grf.bg.ac.rs/survey/accounts/login/>. The page header includes the European Union logo and the text 'Co-funded by the Erasmus+ Programme of the European Union'. The main title is 'Modernizing geodesy education in Western Balkan with focus on competences and learning outcomes - GEOWEB'. The page is divided into several sections: 'About project' (with project objectives, coordinator, and partner institutions), 'Western Balkan Geodesy Educational Database' (with three categories: 'Institutions for Higher Education in Geodesy (15)', 'Geodesy Educational Programmes (31)', and 'Geodesy Stakeholders (45)'), and 'Leave your comments or suggestions: Forum' (with a list of recent posts and a 'Log in to participate in the survey' button).

Figure 1. Login page for the questionnaire for the geodesy stakeholders and survey regarding higher education institutions and programmes in geodesy

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## Geodesy educational institutions

The 15 educational institutions from 6 countries took part and filled the data into the database:

<i>Country</i>	
<i>Bosnia and Herzegovina</i>	7
<i>Serbia</i>	3
<i>Albania</i>	2
<i>Croatia</i>	1
<i>Slovenia</i>	1
<i>Macedonia</i>	1

Table 1: Number of higher educational institutions participating in the survey

Educational institutions, country, type of study levels and type of institutions referring to their ownership are showed in Table 2. All institutions, except one, are public. One is private, but it does not inform any educational activity, so far.

Summary

Questionnaire survey for Western Balkan geodesy education database - Read

Programmes list

Geodesy education programmes offered by this HEI.

PHD - Geodesy and geoinformatics  
B.Sc - Geodesy and geoinformatics  
M.Sc - Geodesy and geoinformatics

**Name of the higher education institution (HEI)**

Faculty of Civil Engineering

**Complete address**

**Country**

Serbia

**Place**

Belgrade

**Postal/zip code**

11000

**Street address**

Bulevar kralja Aleksandra 73

**Web site of the HEI**

http://www.grf.bg.ac.rs/

**Type of the HEI**

Public/state  
 Private/state  
 Private

**Contact person**

**Name**

Branislav Bajat

**Position**

Head of Department

**Department / Unit**

Department for geodesy and geoinformatics

**Contact email**

bajat@grf.bg.ac.rs

**Telephone**

+381641177232

Figure 2. Form for entering basic information on higher geodesy education institution

The content of the Institution's database includes the next information:

- 1) name of the higher education institution (HEI),
- 2) complete address (country, place, zip code and street address),
- 3) web site of HEI,
- 4) type of HEI (public/state, private/state, private),
- 5) contact person (name, position, department/unit, email and telephone) (Figure 2).

From 15 institutions, 11 described their study programs while three had just filled the information about the institution, without detailed explanation of geodetic courses. Probable, they have some geodetic courses, but not the whole program, at this moment. The Faculty of Mining, Geology and Civil Engineering - University of Tuzla (Table 2, row 6) described three BSc study programs but two BSc are of the same name *Geodesy and mine surveying* with different number of students applied. Third BSc study program (*Geodesy*) and both previously mentioned have unclear number of ECTS and should be supervised and corrected. Serbian educational institutions offer study programs at all HEA. Bosnian institutions have different study contents at various places and under the different study programs. The Faculty of Civil Engineering, Department of Geodesy - University of Sarajevo, has the most complete offer at all three HEA levels. At the Construction engineering Faculty Polytechnic University of Tirana (Albania) has four study programs two at professional level (BEng and MEng, row 11, Table 2) and two at academic level (MSc and PhD). Slovenian and Croatian universities described all their study programs while Macedonian only one master program.

	INSTITUTION	Country	B.Eng	BSc	M.Eng	MSc	Spec.	PhD	Type of HEI
1	<a href="#">Faculty of Civil Engineering, University of Belgrade</a>	SER		1		1		1	Public
2	<a href="#">University College of Professional Studies for Civil Engineering and Geodesy, Belgrade</a>	SER	1			1			Public
3	<a href="#">Faculty of Technical Sciences, University of Novi Sad</a>	SER		1		1	1	1	Public
4	<a href="#">Faculty of Civil Engineering, University of Sarajevo</a>	BiH	Not yet						Public
5	<a href="#">Faculty of Natural Sciences and Mathematics University of Tuzla</a>	BiH		1*					Public
6	<a href="#">Faculty of Mining, Geology and Civil Engineering, University of Tuzla</a>	BiH		3					Public
7	<a href="#">Center for Geospatial Research Sarajevo (GIS Center)</a>	BiH	Not yet						Private
8	<a href="#">Faculty of Science, University of Banja Luka</a>	BiH	Not yet						Public
9	<a href="#">Faculty of Civil Engineering, Department of Geodesy University of Sarajevo</a>	BiH	1		1		1	1	Public
10	<a href="#">Faculty of Architecture, Civil Engineering and Geodesy, University of Banja Luka, Republic of Srpska</a>	BiH		1		1			Public
11	<a href="#">Construction Engineering Faculty, Polytechnic University of Tirana</a>	ALB	1		1	1		1	Public
12	<a href="#">Faculty of Geology and Mining, Tirana</a>	ALB	1						Public
13	<a href="#">Faculty of Civil Engineering, Ss. Cyril and Methodius University, Skopje</a>	MAK				1			Public
14	<a href="#">Faculty of Geodesy, University of Zagreb</a>	CRO		1	1			1	Public
15	<a href="#">Faculty of Civil and Geodetic, Engineering University of Ljubljana</a>	SLO		2		1		1	Public

Table 2: The educational institutions

## **Geodesy programs**

The content of the study program database includes the next information:

- 1) name of the program,
- 2) program level (B.Eng,B.Sc, High School Specialization),
- 3) number of study years,
- 4) credit system used,
- 5) total number of credits,
- 6) language of study,
- 7) number of admitted students in 2015/16,
- 8) courses included.

Nine study areas were included into the questionnaire:

- 1) photogrammetry,
- 2) remote sensing,
- 3) GIS,
- 4) Geoinformatics,
- 5) Land cadaster,
- 6) Land/real economics,
- 7) Land/real estate law,
- 8) Global navigation satellite system,
- 9) Project management

Participant can also specify number of modules at the existing study program. All information collected is presented at the Table 3.

## **Conclusions and remarks**

Having in mind the information obtained and the expected project results we can conclude that:

- 1) Database with information about school institutions and their study programs from six regional countries was created and filled,
  - 2) Fourteen educational institutions filled the database from six regional countries, three from partner's countries and three outside (Macedonia, Croatia and Slovenia),
  - 3) 28 study programs in databasewere included,
  - 4) Database was published at the Project website and will continue to collect and inform the stakeholders and others who are interesting to see what the geodetic education institutions offer in the region,
  - 5) There are some errors that need to be corrected,
  - 6) Three geodesy HEI gave no information on study programs (probably, they have some geodetic courses, but not the whole program),
  - 7) All institutions accepted ECTS policy of the student effort validation,
  - 8) Bachelor degree lasts three or four years, but mostly three,
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- 9) Small number of study programs was offered in English, mainly at the PhD level,
- 10) There are a few programs that the students can choose different options to study (MSc in Belgrade and MEng in Zagreb,
- 11) As far as the subject area, Belgrade, Zagreb and Ljubljana offer all above mentioned study areas,
- 12) GIS, Geoinformatics, GNSS and Land cadaster are more or less implemented in all educational institutions.

	INSTITUTION	Study program	Years	ECTS	No. Credits	Language	Students 2015/16	Courses	Modules
1	Faculty of Civil Engineering, University of Belgrade - SER	PhD	3	Yes	180	ENG+SER	5	3+4+8+9	1
		MSc	2	Yes	120	SER	60	1+2+3+4+5+6+7+8+9	3
		BSc	3	Yes	180	SER	60	1+4+5+8	1
2	University College of Professional Studies for Civil Engineering and Geodesy, Belgrade - SER	B.Eng	3	Yes	180	SER	130	1+2+3+4+5+7+8	1
		Spec.	1	Yes	60	SER	32	1+2+3+4+5+6+7+9	1
3	Faculty of Technical Sciences, University of Novi Sad - SER	BSc	4	Yes	240	ENG+SER	74	1+2+3+4+5+8+9	1
		MSc	1	Yes	60	ENG+SER	50	1+2+3+4+5+8+9	1
		PhD	3	Yes	180	ENG+SER	5	1+2+3+4+5+8+9	1
5	Faculty of Natural Sciences and Mathematics University of Tuzla - BIH	BSc	4	Yes	240	BOS	50	3	1
6	Faculty of Mining, Geology and Civil Engineering, University of Tuzla - BIH	BSc	1?	Yes	5?	BOS	54	1+4+5	1
		BSc	1?	Yes	5?	BOS	99	1+4+5	1
9	Faculty of Civil Engineering, Department of Geodesy - BIH	B.Eng	3	Yes	180	BOS	200	1+3+4+5+8	1
		M.Eng	2	Yes	120	BOS	100	1+2+3+4+8	1
		PhD	3	Yes	180	BOS	5	2+4+5+8	1
		BSc	1?	Yes	5?	BOS	99	1+4+5	1
10	Faculty of Architecture, Civil Engineering and Geodesy, University of Banja Luka -BIH, Republic of Srpska	BSc	4	Yes	240	SER	45	1+2+3+4+5+6+7+8+9	1
		MSc	1	Yes	60	SER	23	1+3+4+5+8	1
11	Construction Engineering Faculty, Polytechnic University of Tirana - ALB	B.Eng	3	Yes	180	ALB	55	1+2+3+4+5+6+8+9	1
		MEng	2	Yes	90	ALB	30	1+2+3+4+5+6+8+9	1
		MSc	2	Yes	120	ALB	0	1+2+3+4+5+6+8+9	1
		PhD	1	Yes	60	ALB	0	1+2+3+8	1
12	Faculty of Geology and Mining, Tirana	B.Eng	3	Yes	180	ALB	25	1+2+3+4	1
13	Faculty of Civil Engineering, Ss. Cyril and Methodius University, Skopje - MAC	MSc	2	Yes	120	MAC	18	3+4+5+6+7+9	1
14	Faculty of Geodesy, University of Zagreb - CRO	BSc	3	Yes	180	CRO	90	1+2+3+4+5+6+7+8+9	1

		M.Eng	2	Yes	120	ENG+CRO	80	1+2+3+4+5+6+7+8+9	2
		PhD	3	Yes	180	ENG+CRO	1	1+2+3+4+5+6+7+8+9	1
15	Faculty of Civil and Geodetic Engineering University of Ljubljana - SLO	BSc	3	Yes	180	SLO	30	1+2+3+4+5+6+7+8+9	1
		MSc	2	Yes	120	ENG+SLO	30	1+2+3+4+5+6+7+8+9	1
		PhD	3	Yes	180	ENG+SLO	5	1+2+3+4+5+6+7+8	1

Table 2: The institutions and basic information about their study programs and courses at the area of geodetic surveying and GIS

Local coordinator  
Branko Bozic, PhD