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Modernizing geodesy education in Western Balkan with focus on competences and learning outcomes (GEOWEB)

Belgrade workshop, 17-21.October 2016

From the 17th to 21th of October, group of GEOWEB project partners had several meetings with very intensive and ambitious tasks to discuss the future work on the development of BSc and MSc geodesy curricula at the regional level having in mind the experiences from EU partners from Sweden, Austria and Spain.

Fig. 1: Meeting at the Rector's office, 17.10.2016

In order to organize a lot of activities Workshop agenda was prepared in advance. According to the agenda the first meeting was held at the Rector's office (University of Belgrade - UB) where Vice-rector Prof. Ivanka Popovic welcomed the project partners and talked about the history of UB. She also explained organization of UB and its main activities (Fig. 1).

After the meeting at Rector's office, all other activities were organized at the Faculty of Civil Engineering (FCE), UB. At the first session Project coordinator Huaan Fan from KTH (Stockholm, Sweden) opened the Workshop and presented framework for curricular development focusing on competences and learning outcomes. Prof. Robert Weber from TUW (Wien, Austria) continued with presentation about core Geodesy curricula according to the TUW experiences. Flor Alvarez Taboada from University of Leon (Ponferada, Spain) presented a new approach of teaching and learning in geodesy education.

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The afternoon session started with three presentations of study programs at UB, UNSA and UPT where the presenters showed the content of BSc, MSc and PhD study programs and explained the program structure, the main area of interests and study fields under these study programs. At the end of the first day partners were divided into three groups and started work on the development of the core curriculum for geodesy according to the framework that have been given by Project coordinator.The emphasis was on the matrix of competences and Bloom taxonomy as a foundation providing good and reasonable learning outcomes for a good study program at the level of the curricula, course or subject.

The work of the groups resulted with the proposals of the BSc and MSc curricula. These were drafted according to the agreement of all participants on basic, core and elective courses that were proposed. As for the BSc curriculum in Geodesy, nine basic (supporting) courses with 55 ETCS in total were recognized as introductory courses of fundamental value (mathematics, physics, programming, database, law, economics, geosciences, construction engineering and spatial planning). In addition to these basic courses, 13 core courses (including bachelor diploma project) were proposed with 110 ECTS in total and six elective courses, where student have to select some courses worth 15 ECTS from offered 28 ECTS. For each course one responsible person was assigned and the project partners proposed their representatives to participate as the working group members. A working group responsible for syllabus preparation is established for each of the courses of the proposed BSc curriculum. November 30, 2016 is established as the deadline for all the syllabuses to be prepared. Similar to BSc curricula, MSc level curricula was proposed, too. Nine core (45 ECTS) and 16 elective courses (80 ECTS, courses worth at least 45 ECTS have to be selected) including MSc diploma thesis(30 ECTS) were proposed. For each of these MSc courses a responsible person and working group members were proposed in the same way as for the courses of the BSc curriculum.

Fig. 2: Project coordinator talks how important is the role of IAB to the Project success

During the workshop, PMB meeting was organized on October 19. The topics of interest to be discussed at this meeting were prepared in advance. At the beginning, Project coordinator presented the results of the Erasmus+ officers' visits and the progress on equipment procurement. Next steps in the project progress were pointed out including expectations regarding lab opening ceremony, curricular development time table, training courses on GIS and modern geodetic concepts, PMB meeting in Stockholm, external evaluation and financial issues.

Fig. 3: IAB members

Fig. 4. Discussion at the WBGF

IAB meeting was also organized on 19th October. IAB members, two from each partner's country participated at the meeting. Project coordinator explained the basic project requirements and the project objectives. He also explained what is expected from the IAB. IAB appointed Jovana Radovic from Novi Sad to be coordinator of IAB activities on supervising the curricula development process.

Fig. 5: Sightseeing across the Danube

Fig. 6: Unofficial talking during the sightseeing

The Belgrade workshop was also an opportunity for the project participants to visit Belgrade and to learn something about its rich history. Within the two-hour boat sightseeing participants had the opportunity to see how Belgrade looks from the rivers Sava and Danube.

Fig. 7: Visiting the Geodesy Department and discussion with the staff of the Department

Within the workshop, the meeting was also organised with the teachers from the Department of Geodesy and Geoinformatics (DGG), FCE, UB. Head of the DGG presented the department, its activities, most significant results and some plans for the future.

Fig. 8: PC Lab and study exercises content inside GIS study field

During the visit to the DGG project participants visited the computer classrooms where they were informed on the approach for teaching process and how exercises are organised in these classrooms. It was stressed that at DGG exercises from all the courses that are somehow connected to geoinformatics are exclusively held in computer classrooms applying principle one student – one computer.

Fig. 9: Laboratory for metrology

Fig. 10: Laboratory for surveying with new GPS equipment purchased

On the occasion of finishing the procedure of procurement of the surveying equipment, there was the ceremony of geodetic equipment acceptance at the Laboratory for surveying. The role and importance of the procured equipment for students training is explained to the project participants. Two GNSS receivers were purchased and it is expected that they will have a great importance in providing specific skills for students at DGG.

Fig. 11: New GPS receivers were promoted as the result of the Project

Fig. 12: Project and Local coordinators announced the introduction of the new GPS equipment into every day teaching of students.

In addition to geodetic equipment, some IT equipment was purchased for DGG within the Erasmus+ project also. One server, five desktop computers with monitors, a desktop computer for the implementation of the digital photogrammetric workstation, two desktop replacement notebooks and one 3D projector were purchased. In addition to IT equipment that has been already acquired, the acquisition of some specialized equipment (unmanned aerial system with camera for aerial photogrammetry and equipment for implementation of 3D digital photogrammetric workstation)has been already in process. Some of the equipment will be located in the Laboratory for Photogrammetry and Remote Sensing and some of it in the Laboratory for Geoinformatics.

Fig. 13: Laboratory for photogrammetry and remote sensing where IT part of the equipment purchased under the project will be located

During the Belgrade workshop participants of the project have visited the Laboratory for Photogrammetry and Remote Sensing where they received information regarding the planned use of the equipment that has already arrived in the laboratory.

Last day of the workshop, the partners visited the University of Technical Sciences in Novi Sad where a opening ceremony of a new lab, equipped by the project, was organized.

Local coordinator
Prof. Branko Bozic