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MENVIPRO

Modernization of Environment Protection Studies

Programmes for Armenia and Georgia

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IV Meeting

7-8 October 2019

Tbilisi

Meeting dates: 7-8 October 2019

Location: Ilia State University (ISU)

The University of Georgia (UG)

Attendance: according to the signed attendance sheet

Day I: October 7th, 2019

Welcome speech by the local host Vice Rector on Technology, Professor Nana Dikhaminjia.

Prof. Dikhaminjia welcomed guests and introduced them to new School of Technology recently created in ISU. Spoke about international connections of the university especially with San Diego State University and international grant projects. She invited guests to make short tour in the new building of the University and see new laboratories of electrical and computer engineering.

Welcome speech by the project Coordinator Professor Nicolò Merendino and Dr. Angela Fattoretti

Georgia National Erasmus office head Dr. Lika Glonti made presentation “Essential characteristics of project management in Georgia”.

Dr. Glonti spoke about Erasmus projects which will end up soon and new type of projects will take on. She overviewed Erasmus and previous Tempus projects, spoke about differences and emphasized the sustainability of projects. In her opinion increasing sustainability of Project outcomes becomes most important goal for Georgia. She offered to participate in Erasmus+ Jean Monnet grant projects.

Ilia State University Project Coordinator Prof. Avtandil Tavkheldze made presentation “Environmental sensors learning module design”

Prof. Tavkheldze presented the results of SWOT analysis, overviewed introductory visits made in Erevan, Viterbo, Lisbon and Halle. Main result is that more experimental skills are necessary for ISU students to be competitive in finding Environmental Protection related jobs. They need to become familiar with environmental sensors operational principles and design. Students need to become familiar with modern apparatus used for measurements in the field of Environmental Protection. To fill this gap ISU will design two learning modules. One module for laboratory study of environmental sensors and another for study of modern apparatus such as SEM, TEM, MS and XRDA. First module will be made on the basis of learning apparatus ELVIS designed by National Instruments (NI) together with NI Quancer sensor board and NI LabVIEW software. New board with additional environmental sensors will be designed on the basis of NI Elvis proto board. Another module will include description of Physical and operational principles of SEM, TEM, MS and XRDA and introduction to electrical engineering, computer engineering and vacuum techniques. Next, Prof. Tavkheldze spoke about his experience in program design and Accreditation.

Designed modules will be used for modernization of three existing magister courses of ISU. Finally, possible scientific collaboration with Tuscia University and student exchange has been discussed.

Prof. Cornelia Glaesser made positive reply to ISU module design plans, made related comments and stressed that these modules should be reflected in the Project documentation.

Prof. Fernando Carvalho made positive reply to the ISU modules design.

Ilia State University Engineer David Chkhaidze presented “Environment protection system installed in Uplistsikhe caves”.

David spoke about sensor data collection system on the basis of Internet of Things technology. This technology allows fast and efficient collection of data and is very flexible. Internet of Things allows fast and efficient modernization of the sensor network. Internet of Things network is very popular among Students and they will be involved in design of Uplistsikhe sensor network and other networks. Learning outcomes will be student skills in Electrical Engineering and Computer Engineering.

Internet of Things based sensor network was discussed by all members.

Short introductory tour to ISU-SDSU Electrical Engineering and Computer Engineering laboratories.

Project meeting participants were introduced to NI-ELVIS learning apparatus and corresponding protoboards as well as with modern measurement devices (multimeter, oscilloscope, signal generator, electrical load, power source) connected through GPIB interface with the computer. ISU-SDSU laboratories have 40 sets of described apparatus. All above apparatus is run by NI LabVIEW software. New Hi-Tech blackboards and other learning resources have been demonstrated.

Financial Management session, Dr. Angela Fattoretti

Dr. Fattoretti spoke about project budget, the speed of fund spending. Presented and discussed future travels, number of people travelling and travel funding. Presented plans Summer school funding in Armenia and Georgia. These plans were discussed and agreed.

Nomination of Summer School responsible for Armenia and Georgia and to Collect the original MENVIPRO documents, Dr. Angela Fattoretti

Summer school in Armenia has been discussed with participation of all meeting members. School agenda was presented and discussed in details.

Dr. Fattoretti collected required documents, such as timesheets, joined declarations, travel reports and purchased apparatus lists.

SWOT Analysis from Armenia, Arusyak Harutunyan

Dr. Harutunyn presented SWOT analysis for Armenia. Spoke about modernization quality control and accreditation of Environment Protection Master coeres in Armenia.

Quality control criteria, Nicolò Merendino

Q&A Team discussion

Closing remarks, Nicolò Merendino and Angela Fattoretti

Day II: October 8th, 2019

Welcome speech by the local host Rector of UG Mr Konstantine Topuria

Presentation of **Mr Giorgi Imedashvili**, Head of international PR office. The presentation overviewed UG activities in International Academic Projects particularly funded by Erasmus+.

Presentation of **Prof. Kakhaber Tavzarashvili**, Dean of School of Science and Technology.

Prof. Tavzarashvili presented the mission and academic activities of the School of Science and Technology. He spoke about the undergraduate and graduate programs provided by the School. He talked about the innovative teaching methods in UG. The information on various training centres operating at the School has been delivered. The training courses cover both the IT and the Electrical Engineering directions. Experience gained in the mentioned training centres will be important for establishing new training centre in Environmental Protection. The curriculum of the EP training would consist of the courses already taught in UG as well as the new ones elaborated within the MENVIPRO project.

Chief of Party of USAID WMTR Program, **Ms Nino Shavgulidze** overviewed the problematics of Waste Management technologies and particularly activities of CENN, a non-governmental organisation working to protect environment by fostering sustainable development throughout the South Caucasus. In order to develop a progressive society that values and protects environment it is extremely important to foster modern and sustainable development values, building bridges between communities and their surroundings.

CENN specializes in a number of areas including combating climate change, sustainable resource management, waste management, building and developing healthy and prosperous climate-resilient communities, and empowering women and youth to create innovative and inclusive solutions. Among the types of activities of CENN is raising of public awareness on EP issues and launching the appropriate educational programs e.g. Winter or Summer Schools.

Prof. Marina Tediashvili, UG, “Opportunities for Development of Master Course Curricula and Related Research Activities in Environmental Microbiology & Food Safety at the University of Georgia”.

Recently established Biology and Chemistry direction within the Department of Natural Sciences, School of Science and Technology at the University of Georgia (UG) currently provides more than 20 basic teaching courses to students of Public health and Medical Sciences of UG. Ambitions to develop a number of PhD- and Master courses in selected fields of Biology and Chemistry, also integrated courses in Environmental science.

Team of highly qualified microbiologists affiliated with G. Eliava Institute of Bacteriophages, Microbiology and Virology can be readily involved in the elaboration of the course “Ecological risk assessment - Environmental toxicology.

Prof. Tediashvili spoke about the tentative topics of course “Environmental Microbiology”. Based on the best practice of EU curricula she also characterized main subjects to be discussed in Summer School on Food safety & Security management.

Prof. Sergo Tsiramua, UG, Geo-Information Systems in University of Georgia

At UG GIS has been taught since 2005 as a core subject at Bachelor, Master and PhD levels as well as in the format of short training courses.

School of Science and Technology

Founded in 2016 the UG GIS center aims at the development of GIS study program and increase of awareness about importance of GIS in different fields of study and business. The main GIS directions in UG are: Geo-Informatics – Main Course based on MapInfo Professional; Geo-Information System ArcGIS – selective course; Geo-Information System ArcGIS – selective course.

Prof. Tsiramua talked about UG partner Non-profit Organization – “TravelGIS” was created in 2011 as a tourism geo-information center. Then he presented purposes and results of various GEO-touristic projects implemented at the UG School of Science and Technology.

Givi Beridze, UG, Environment Protection Related Projects at UG

Mr G.Beridze, CEO of UG-Edison Training Center, talked about educational activities of the Center as well as main goals and the personnel. He presented electronic devices, assembled by UG Edison, that have been used in environmental monitoring projects. Givi spoke about obtained orders from US and EU companies. They demand the automatic systems for indoor air cleaning devices. M.Tediashvili has positive respond on such systems, in particular regarding monitoring various bacteria in air in hospitals.

Angela Fattoretti overviewed Summer School tasks and possible approaches of recruiting both participants and lecturers.

Kakhaber Tavzarashvili told attendees the sad news about the death of an Armenian colleague, Prof. Armen Saghatelyan, Director of Center for Ecological - Noosphere Studies (CENS). Attendees honoured his memory with a minute of silence.

Q&A Team discussion

Closing remarks, Prof. Nicolò Merendino and Dr. Angela Fattoretti

Annex 1 – Agenda of the meeting

Annex 2 – Signed Attendance Sheet