Announcement letter for application of vocational technical schools teachers for the participation in Training for teachers of Secondary Vocational Schools for the usage of remote experiments within NeRela project

Project Description

Tempus Project NeReLa, titled “Building Network of Remote Labs for strengthening university-secondary vocational schools collaboration”, is aimed to improve engineering studies in Serbia by introducing innovative teaching methods of engineering education through remote experiment implementation and strengthening the collaboration between universities and vocational technical schools (through trainings of secondary vocational schools teachers for the usage of remote experiments in teaching). Thus, the attractiveness of engineering studies among vocational school students increases as well as their interest in enrolling in these study programmes in Serbia. The realization of the project lasting three years started on 1/12/2013. The project coordinator is University of Kragujevac, and the project is directed by Dr. Radojka Krmeta, professor at Faculty of Technical Sciences in Cacak.

Besides University of Kragujevac, project partners are the following universities from Serbia: University of Belgrade, University of Novi Sad and University of Nis. Non-university partners from Serbia are: Network of Regional centers for vocational schools teacher professional development „RC and CSU Network“, Association of Electrotechnical Schools of Serbia, Association of Mechanical Schools of Serbia and Balkan Distance Education Network (Baden).

Partners of the project are the following European universities: University of Maribor, Slovenia; University of Deusto, Bilbao, Spain; University of Porto, Portugal; European University Cyprus. Non-university EU partner of the project is a company Best Cybernetics, Patras, Greece.

The project will provide procurement of the most up-to-date equipment for the laboratories of the four largest universities in Serbia. The equipment will facilitate the realization of the remote experiments in the fields of electrical engineering, computing engineering and mechatronics. In cooperation with European partner institutions, which are highly experienced in the implementation of remote experiments at engineering studies and networking of remote laboratories, a web platform – Library of Remote Experiments – LiReX will be established within the project. The web platform will enable students to approach a network of remote laboratories via Internet and conduct experiments from these remote laboratories. The project includes a set of trainings for approximately 180 teachers of secondary vocational schools. The trainings will enable the teachers of secondary vocational schools to use the remote experiments within the realization of their teaching activities.
Trainings for teachers of Secondary Vocational Schools for the usage of remote experiments

■ Prerequisites for successful realization of the trainings and the usage of acquired knowledge and skills:
  - Technical prerequisites: computers with Internet connection, which enables continuous video streaming in a computer classroom or a laboratory of the vocational technical school where the training participant works
  - Readiness of the teachers – participants of the trainings:
    • required computer skills: active knowledge and usage of MS Office, Internet and different communication tools (e-mail, Skype, Facebook ...);
    • readiness of secondary vocational schools teachers to implement remote experiments in teaching of vocational subjects in vocational technical schools in the fields of electrical engineering, computer engineering and mechatronics.

■ Method of trainings realization:
  • Winter school (January, 2014) covers one-day training at the faculties of four partner universities from Kragujevac, Belgrade, Nis and Novi Sad for 4 groups X 20 (max 45) teachers
  • Summer school (July, 2014) covers two-day on-line training at four selected regional centers for vocational schools teacher professional development for the same 4 groups X 20 (max 45) teachers

■ Method of group selections for the trainings:
  • Regional distance: groups will be selected according to the least possible distance between the place where the participants are employed and University centers where Winter School will take place; therefore Regional centers in which Summer School will take place are bound to be near University centers in which the Winter School trainings will take place

■ Realizators of the trainings:
  • Winter School is realized by:
    - Partner universities from Serbia
    - EU partner universities
    - Balkan Distance Education Network (BADEN)
• Summer School is realized by:
  - Partner universities from Serbia
  - Balkan Distance Education Network (BADEN)

**Educational fields within which remote experiments are realized at partner universities:**

- **Electrical engineering:** electrical measuring, electronics, power engineering, electric drives and machines, automatic control systems...

- **Computer engineering:** signals and systems, digital signal processing, digital control systems,...

- **Mechanical engineering:** mechatronics

**Responsibilities of the participants:**

1. The participants are required to:
   - attend the trainings regularly: one-day training programme – 8 classes (Winter School) in one of the four university centers (Cacak, Belgrade, Nis and Novi Sad) in second (or third) week of 2015, and
   - participate in the activities in two-day training – 16 classes (Summer School) in one of the 4 regional centers for vocational schools teacher professional development during summer holiday in 2015 (beginning of July)

2. The participants should be ready to actively participate in creation and completion of remote experiments library by giving their suggestions and recommendation

3. The participants are required to fill out online evaluation questionnaire at the end of Winter and Summer School

4. After completion of Summer School where the participants will conduct a specific remote experiment(s), the participants will have to write a short report on the Moodle platform regarding the conducted remote experiment(s) and give their suggestions and observations. Thus, the quality of the remote experiments will be improved.

5. The participants are recommended to mandatorily apply remote experiments into teaching of vocational subjects after completion of the training in 2016/2017.
Content of the application form for trainings for teachers of Secondary Vocational Schools for the usage of remote experiments:

1. Short CV

2. List of the attended trainings, seminars, workshops, which are related to the curriculum of the subject as well as to the trainings for computer usage: full title, institution – coordinator (sometimes authors), time of attending, number of hours, venue.

3. Description of the specific professional activities: setting up a laboratory and new laboratory exercises, participation in designing curriculum, course books, student manuals and guides, teaching material and aids, etc.

4. Participation in competitions, technical meetings and fairs, the achieved results.

5. Contact information: personal contact (mobile phone), e-mail, school address.

The training program within Winter School (January, 2015) and Summer School (July, 2015) is free of charge for the planned number of participants (max 180); travel expenses are covered by NeReLa project. From each school, maximum three teachers who fulfill the conditions can apply for the planned training which lasts 3 days in total (Winter and Summer school) in 2015. It is recommended that the teachers of subjects from 3 different engineering fields apply from one school. The engineering fields are the following:

- Electrical engineering: electrical measuring, electronics, telecommunications, power engineering, electric machines, electric drives, automated control systems...

- Computer engineering: signals and systems, digital signal processing, digital control systems...

- Mechanical engineering: Mechatronics