BENEFICIARIES from the HUTON project

1. The immediate target beneficiaries are professionals employed by the clinical partners in the project involved in the delivery of rehabilitation services that will enter onto the HUTON curriculum, gain skills how to use state of the art technologies and gain skills how to optimize the treatment of humans with special needs.
2. The extended group of beneficiaries include professionals employed in other rehabilitation centers and private rehabilitation practice in Republic of Serbia. The education will directly enable them to improve the delivery of services to humans with special needs. The curriculum is planned to be delivered in Serbian and English.
3. The plan is to integrate the new curriculum with the European MS program being part of the current COST 1006. The MS program within COST is planned to result with the EU joint MS curriculum (link). This integration is facilitated by the fact that some members of the HUTON consortium participate in the COST 1006 project.

Significance of the HUTON curriculum

The HUTON curriculum is envisioned to have major significance in improving skills and knowledge of students who finish successfully the program.

The curriculum is being designed to accommodate students who have 240 ECTS with the BS degree in the field of engineering, life sciences and/or sport. The 240 ECTS is equivalent to four years of the university education.

The HUTON will develop new courses (maximum 10), but it will also include the courses that are already offered to students at participating universities. The HUTON will offer to students a small selection of courses that are taught at the consortium partners from Europe.

Students with the BS who accumulated only 180 ECTS will be required to collect 60 ECTS from the courses that are already part of the accredited programs of partner's institutions. The list of courses that are suggested is being prepared in parallel with the HUTON curriculum.

The envisioned teaching is based on hands-on approach and will maximize active participation of students. The equipment, that is part of HUTON, will be available permanently to students and staff during the educational program. The plan is to use practical assignments that are performed in clinical applications. This approach requires that students also develop ethics standards for possible future research and collaboration with university partners.

The HUTON curriculum is envisioned to be also the basis for continuation of education within the PhD programs offered at partner universities.

The HUTON will follow so called "project centered teaching" and individual mentoring of students (the number of students in Year 2014/15 is planned to be limited to 20). This approach requires that the university and clinical staff are prepared for the one-to-one teaching in addition to e-teaching and tutoring before the enrollment of the first generation of students. The training of the new teachers will be provided by the experienced staff from the participating universities.

In summary, the HUTON graduates will be prepared for effective use of technologies that are becoming standards for rehabilitation and assistance of elderly in Europe and worldwide. The envisioned technological systems include haptic robot systems for treating upper extremities, robot based assistants for standing and walking, electrical stimulation for both upper and lower extremities, and assessment methods that are suitable for the prediction of outcomes and planning of the most appropriate treatments of humans with special needs.

The value of the HUTON for the Republic of Serbia

The major value of the joint development of the curriculum by the three universities in Serbia and three international partners coming from the integrated expertise and experience in the development of modern technologies in the domain of human oriented mechatronics and its applications in real life.

Rationale

The technological developments, especially in the domain of health, in parallel with the growth and integration of information and communication technologies in the life play today an important role in the restructuring of the whole area of the Southeast Europe.

This curriculum development project aims at providing educational background, dedicated to the following two aspects being of a general importance for the Republic of Serbia (RS):

1. Development of a modern and efficient evidence based rehabilitation services integrated into an improved health-care system based on up-to-date medical technologies; and
2. Provision of know-how to professionals for the optimized use of new technologies in rehabilitation and assistance to elderly population communication technologies.

The educational system in RS is in the position to develop, as soon as possible, new forms of life-long curricula in accordance with:

1) the expected integration into the European family, and

2) the general trends identified and tested in the developed European countries.

With this in mind we are developing an educational network of three Serbian universities. The specifics of the new curriculum is an interdisciplinary approach to education of professionals who have an important role in the improved quality of life of humans with special needs (physical disability caused by central nervous system lesion like stroke, peripheral injury (e.g., amputation), and aging population that is growing very fast).

The curriculum addresses the topics of personal robotics, mechatronics, rehabilitation assistive technologies, integration of web communication as the part of daily life in using new technologies (data storing and data sharing).

The HUman-TOol interaction training Network (HUTON) will be the long-term standing basis for continuous, effective and problem centered education that is a milestone for providing better employment, more effective work and integration into the European market.

The facts guarantying the success of the new curriculum

Contacts of the partner countries consortium members with the consortium members from EU are also well established and fruitful for many years, and concern the following domains:

Biomedical engineering, Neuroscience, Assistive Technologies (University of Patras, Greece); Robotics and Biomedical Engineering, Data analysis (University of Ljubljana, Slovenia); and Robotics, Rehabilitation, Control (University of Genoa, Italy). All consortium members have substantial experiences with Tempus and other EU-funded projects.