



Tempus

Development of Embedded System Courses with implementation
of Innovative Virtual approaches for integration of Research,
Education and Production in UA, GE, AM



**TEMPUS-project 544091-TEMPUS-1-2013-1-BE-
TEMPUS-JPCR**

P11-TSU Final Meeting

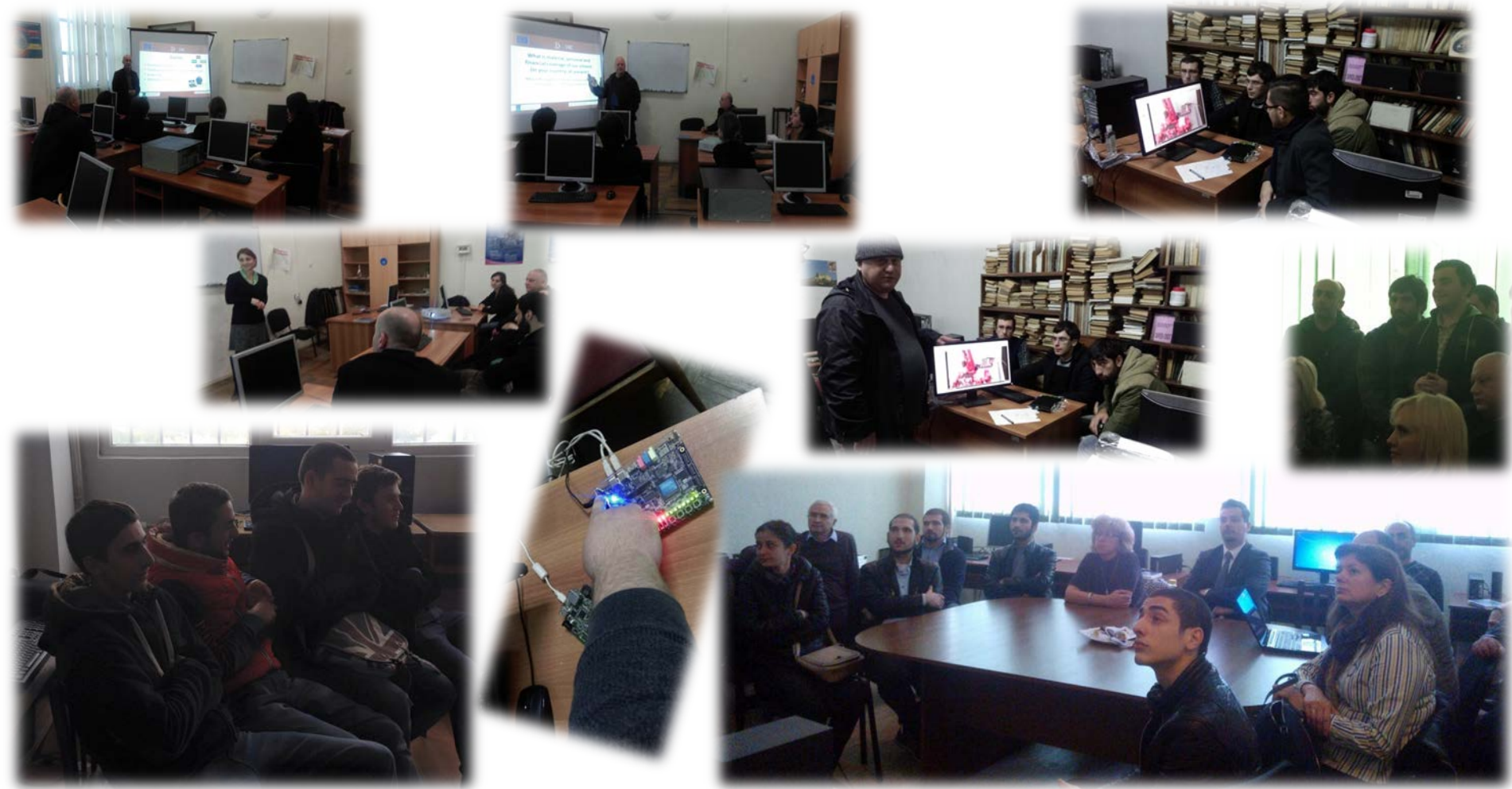


Courses development & pilot teaching:

Courses	Pilot Teaching
<ol style="list-style-type: none">1. Module “Hardware for Embedded Systems”(150h (5 ECTS) + 120h (4 ECTS) practical exercises with new equipment)2. Module „CAD/CAM/CAE for Embedded Systems“ (80h (3 ECTS) + 80h (3 ECTS) practical exercises with new equipment)3. Module “Software for Embedded Systems” (180h (6 ECTS) + 150h (5 ECTS) practical exercises with new equipment)4. Digital Signal Processing 60h (2 ECTS) – additional module	<p>Training courses:</p> <ul style="list-style-type: none">• Summer school - UKF, Slovakia• Master classes - in National Polytechnic University of Armenia, Yerevan• Spring School - Ilmenau University of Technology, Germany• Summer School - Thomas More University College, Belgium• Master Classes in Georgia• FPGA training - UKF, Slovakia <p>4 training courses at TSU for TSU teachers and students</p>
Amount of students participated in pilot teaching, trainings, Master Classes	20 students



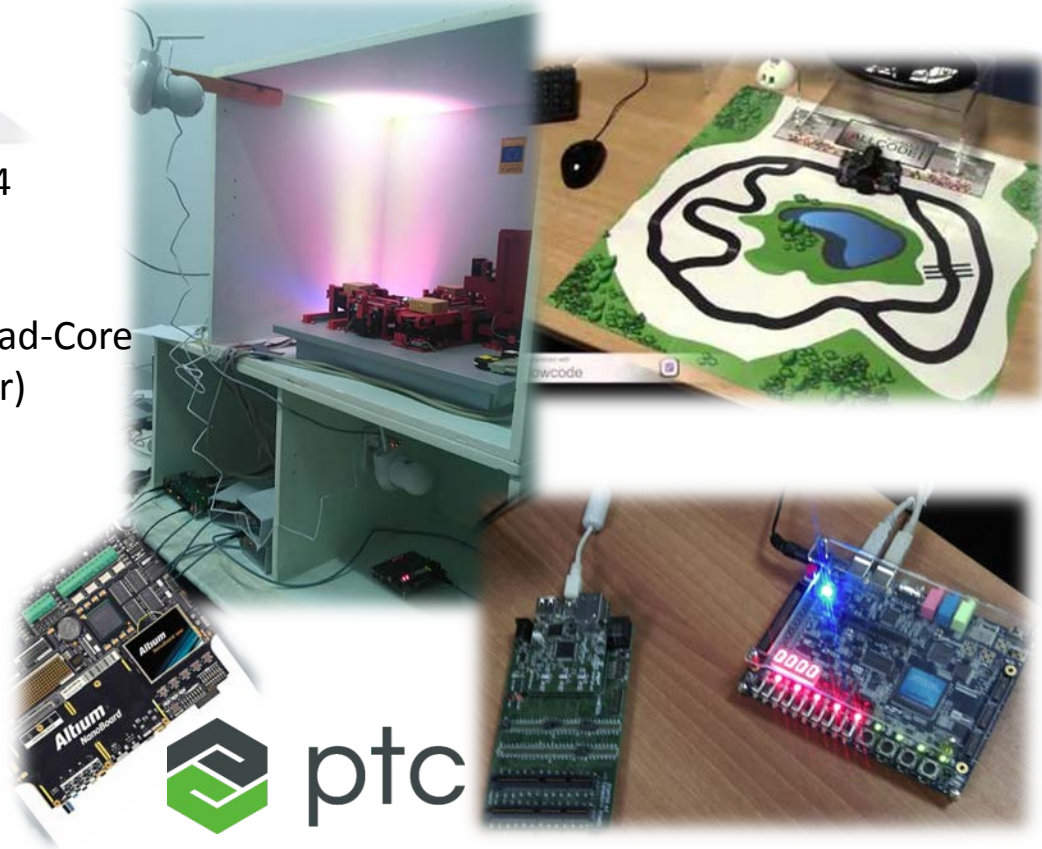
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Equipment & learning tools

- GOLDi remote lab: Process Cell; Digital Demo Board
- Arduino Mega 2560 R3
- Danger-Shield Bausatz (SparkFun)
- mSD-Shield v2 (Datenlogger Shield)
- Drehencoder mit Taster PEC12R-4225F-S0024
- GLCD-Shield mit Display
- Ethernet-Shield R3 (Arduino)
- Raspberry Pi 2 Modell B - ARM Cortex-A7 Quad-Core
- Shield-Bridge (Raspberry Pi - Arduino Adapter)
- STM32F4-Discovery
- MI0283QT Adapter v2 (inkl. LCD)
- Cyclone V GX Starter Kit
- **Formula AllCode Deluxe Class Set** (+ license)
- **3D printer**
- 5 PCs and 1 server for remote lab
- Altium nano-board
- PTC software; Altium software





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JOINT PROJECT UNDER
THE EUROPEAN UNION TEMPUS PROGRAM

DesIRE



Development of Embedded System Courses
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approaches for integration of Research,
Education and Production in UA, GE, AM

2013 – 2016

Dissemination

- Dissemination via web-resources (TSU research-portal)
- Posters, Flyers

IVANE JAVAKHISHVILI TBILISI STATE UNIVERSITY



თსუ-ს საშემსწავლო პორტალი
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February 2017
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DESIRE

17/02/2014



Funded by the European Union

Ivane Javakhishvili Tbilisi State University is involved in the TEMPUS

DESIRE 544091-TEMPUS-1-2013-1-BE-TEMPUS-JPCR (Development of Embedded System courses with implementation of Innovative virtual approaches for integration of Education, Research and Production in UA, GE, AM - DesIRE 2013) 12 research centers from Universities from 6 countries are participated in the project. TSU is a partner University. Project Coordinator is Thomas More Mechelen (Belgium).

For more information about the project please visit the DESIRE web-page: <http://tempus-desire.thomasmore.be/>



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DesIRE



Grant Holder:
Thomas More University College (BE)

Partners:

Imenau University of Technology (GE)
Constantine the Philosopher University in Nitra (SK)
Soprizhzhya National Technical University (UA)
Crimean Engineering and Pedagogical University (UA)
Donbass State Engineering Academy (UA)
Morys Grinchenko Kyiv University (UA)
State Engineering University of Armenia (Polytechnic) (AM)
Yerevan State University of Architecture and Construction (AM)
Yerevan Telecommunication Research Institute CJSC (AM)
Georgian Technical University (GE)
Ivane Javakhishvili Tbilisi State University (GE)



New Curricula:
Infrastructure: Hardware, Software, CAD/CAM/CAE for
Embedded Systems
PEAL: virtualization and remote lab
ESDL: Embedded Systems Design Lab
PC lab: Hardware & Software Design
CAD/CAM/CAE



ASSOCIATE
KU LEUVEN



Dissemination and Enterprise Collaboration



Special Meeting dedicated to the dissemination of the TEMPUS-DESIRE project goals and expected results was organized. Representatives of research institutes, Georgian Research and Education Networking Association - GRENA and EMCoS Ltd. were invited.



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- Regional meeting with a representative of the TEMPUS Office Lika Glonti (February 2014)
- Meeting dedicated to the Joint Institutional Monitoring Visit of EACEA representatives at Ivane Javakhishvili Tbilisi State University on Erasmus Mundus and Tempus projects was organized on 22-23.10.2015



Quality control and monitoring meetings with the National TEMPUS Office representatives (7 November 2014, 29 June 2016, TSU)





Multiplier effects

One of the students of TSU EEE Department, Tornike Tchikadze who was involved in the project implementation, has submitted the grant proposal related to the Embedded Systems “Accelerometer sensors system developing in order to monitoring geodynamical procession the territory of Georgia” to the Shota Rustaveli National Science Foundation under the Call for [MA research scholarships](#) and got the funding for his Master Thesis.

Group of TSU EEE Dept. students founded a start-up company – LIMES LLC. Based on international experience, LIMES developed curriculum that gives possibility to children to get the skills and basic knowledge in Robotics and Electronics, Microcontrollers programing and Physics. The start-up became one of the most successful young companies in Georgia. Now they have more than 1000 school children and students.



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Thank You for Your Attention!