KTU

Knowledge Transfer Unit - From Applied Research and Technology-Entrepreneurial Know-How Exchange to Development of Interdisciplinary Curricula Modules

Program: Tempus | Joint Projects | Higher Education and Society

Project reference Number:
544031-TEMPUS-1-2013-1-AT-TEMPUS-JPHES Grant

Agreement number: 2013 – 5045 / 001 -001
Project Duration: 36 months, 12/2013 – 11/2016

WP 4 DELIVERY REPORT (Deliverables 4.1 & 4.2)

**KNOWLEDGE
TRANSFER UNIT**

Date of last modification of document: 18-Apr-17

General WP4 description

WP4 Develop/modernize and implement interdisciplinary curricula modules in the areas of technical/engineering and business administration sciences

WP4 aims at CURRICULUM DEVELOPMENT, BASED ON inputs gained from the enterprises through the cooperation on the KTU PROJECTS. Further goal is the development of cooperation between the national PCUSs.

Outputs / results of PCUS:

INTERDISCIPLINARY MODULES DEVELOPMENT (DEV. 4.1)

All PCUs developed and implemented interdisciplinary labor market oriented modules (new or modified) based on the cooperation between the technical and business. To achieve this goal PCUs have used the integrated approach which includes enterprises, students, professors and university management in the process of curriculum development. All WP4 tasks were done in accordance timeline (tasks and terms were agreed on Consortium Meeting 23-26 February 2015, Budapest, Hungary).
PCUs developed Module main content and preliminary module description, which was agreed on Consortium Meeting 28 April 2015, Graz, Austria. (Links in table 1 - Module main content and preliminary module description – done by all partners)

On the base of Workshop "Competence-based teaching" (Study visit, Graz, Austria) PCUs developed Competences matrix for interdisciplinary labor market oriented modules. Task was done by all PCUs (Links in table 1 - Competences matrix).

Interdisciplinary labor market oriented modules were developed by twining partners including EU university as a lead partner:

Twinning partners :
   FHJ
   ISTU – "3D Modeling and printing technology"
   UB – "Using of eye-tracking technology for control (assessment and assurance) quality of human attention"
Twinning partners :
   KTH
   KhAI +KhNU – "Copyright law within international context. Intellectual property in e-commerce"
Twinning partners :
   UdG
   KSMA+DSTU – "Modern Concepts of Knowledge Transfer/Transfer of 3D printing technology"

In the second phase of the KTU project, interdisciplinary curricula have been developed and the courses implemented. As the main target of KTU is to strengthen the linkages within the Knowledge Triangle, the courses were labour-market oriented and linked to the services offered by the KTUs such as IPR, 3D printing & modelling and eye-tracking and intended as continuing education / further education offers.

The two objectives of the application were the following: 1. Development & implementation of the INTERDISCIPLINARY LABOUR MARKET ORIENTED MODULES (new or modified) at

each PCU based on the cooperation between the technical and business HEIs (incl. Bologna conformity)

2. In order to develop NATIONAL ACADEMIC EXCHANGE AND COOPERATION, the interdisciplinary curricula modules will be developed JOINTLY by the two cooperating universities (incl. guest lecturing).

Although not promised in the application, 5 out 6 courses were even implemented as <u>part of the regular study programme</u> (Bacc. & Master level; signed also by Ministry of Education and Science) and formally recognised. They will be continued next year or in a new curricula developed on the base of the KTU modules. We aimed at this to ensure the <u>sustainable</u> use of the developed materials and enhance further cooperation between the universities.

The developed courses and its implementation were approved and <u>signed by the head of the respective department/representative</u> at all PCUs. A special focus was laid on introducing Bologna tools with the ECTS system, and especially formulating learning outcomes as well as general and specific competences. All course working programs include therefore a translation into ECTS equivalents, description of learning outcomes, general and specific competences besides content description, literature, workload, teaching methods etc.

All courses have been reviewed between the Ukrainian universities and additionally by P2-WUS (plus the other European partners), checking Bologna conformity. The program were reworked in the end of the project, as the first version were missing links between the course descriptions and the actual teaching material and programme. The final working programes (as well as all other course materials) are available in approved and signed form in the folder D:\KTU Final Results\WP4 Development\4.1 Curricula\WP4.1 Reworked working programs\

All courses were implemented, guest lecturing by the partner universities were carried out and assessed by the students: D:\KTU Final Results\WP4 Development\4.2 Guest Lecturing

<u>Overview to the courses</u> (Title, University, Level/recognition, Workload/ECTS, Target group):

- "Technology of 3D modelling and printing course" (P6-ISTU; developed with feedback from P8-UB): Bachelor level, 2 modules with 13 sessions, 120 hrs, 4 ECTS, target group: students of 0501 "Informatics and Computing", training direction: 6.050101 «Computer Science» & 6.050103 «Software Engineering»
- "Intellectual Property" (P7-KhAI – jointly developed with P9-KhNU, but tailored to KhAI target group): Master level, 5 modules with 22 sessions, 150 hrs, 5 ECTS, Target groups: students (Industry knowledge: 1801 "Specific categories"; Specialization: 8.18010013 "Project management"), researchers from KhAI and third-party research organizations; entrepreneurs who's activities deal with IPR.
- "Protection of Intellectual property and innovations" (P9-KhNU – jointly developed with P7-KhAI, but tailored to different target group): Level: Mandatory general training cycle for staff, discipline of universal training of researchers (target group), 5 modules with 18 sessions, 150 hrs, 5 ECTS, target group: researchers
- "Using Eye-tracking technology for human-machine interaction research" (P8-UB; developed with feedback from P6-ISTU)): Bachelor level, 4 ECTS 4 modules in 8 sessions   120 hrs
- "Modern Concept of Knowledge Transfer" (P10-KSMA, jointly developed with P11-DSTU): Master level, 2 modules in 6 sessions, 3 ECTS, 90 hrs, for students of discipline 07 «Management and Administration» specialty: 073 «Management».
- "Modern Concept of Knowledge Transfer" (P11-DSTU, jointly developed with P10-KSMA): Master level, 2 modules in 6 sessions, 3 ECTS, 90 hrs, for students with specialty: 121 «Software Engineering» and faculties: «Faculty of Electronics and Computer Engineering», «The Faculty of Management, Economics, Sociology and Philology»

Table 1

Co-funded by the
Tempus Programme
of the European Union

Indicators of WP4 progress

	Task description	Indicators	Partners	Link	Stored at
4.1	**Interdisciplinary modules developed and implemented**				
4.1.1	Analysis of the curricula of technical/engineering and business admin. sciences	Module main content and preliminary module description uploaded to the consortium Box folder	ISTU	https://app.box.com/files/0/f/11639002947/1/f_29656931037	KTU Final Results\WP4 Development\4.1 Curricula\WP4.1 Development of Modules
			KhAI	https://app.box.com/files/0/f/11681496661/1/f_29656933173 -n.a.	
			UB	https://app.box.com/files/0/f/8993525410/1/f_29656932097	
			KhNU	https://app.box.com/files/0/f/11681496661/1/f_29656933173	
			KSMA	https://app.box.com/files/0/f/11679108420/1/f_29656928781	
			DSTU	https://app.box.com/files/0/f/11679108420/1/f_29656928781	
		Competences matrix uploaded to the consortium Box folder	ISTU	https://app.box.com/files/0/f/11639002947/1/f_31066166382	KTU Final Results\WP4 Development\4.1 Curricula\WP4.1 Development of Modules
			KhAI	https://app.box.com/files/0/f/3555243431/1/f_29978131859	
			UB	https://app.box.com/files/0/f/8993525410/1/f_76142219933	
			KhNU	https://app.box.com/files/0/f/3555243431/1/f_29978131859	
			KSMA	https://app.box.com/files/0/f/11679108420/1/f_63283249421	
			DSTU	https://app.box.com/files/0/f/11679108420/1/f_63283249421	
4.1.2	Development of the 4 joint interdisciplinary modules (workshop in FHJ)	Soft copies of 4 joint interdisciplinary modules	ISTU	https://app.box.com/files/0/f/11639002947/1/f_97630216643	KTU Final Results\WP4 Development\4.1 Curricula\WP4.1 Interdisciplinary Modules
			KhAI	Text: https://app.box.com/files/0/f/11566336528/1/f_97026757565 Cover page: https://app.box.com/files/0/f/11566336528/1/f_97237162594	
			UB	https://app.box.com/files/0/f/9082089081/1/f_76399998789	
			KhNU	Text: https://app.box.com/files/0/f/11566336528/1/f_97026757565	
			KSMA	https://app.box.com/files/0/f/11513558835/Course_book_KSMA	
			DSTU	https://app.box.com/files/0/f/11513558835/1/f_96574543062	
		Curriculum signed by the dean of the faculty of professional development or other target department	ISTU	https://app.box.com/files/0/f/11639002947/1/f_98405374406	KTU Final Results\WP4 Development\4.1 Curricula\WP4.1 Implementation
			KhAI	Training program: https://app.box.com/files/0/f/11566336528/1/f_97919822182 Implemented course: https://app.box.com/files/0/f/11566336528/1/f_97931609005	
			UB	https://app.box.com/files/0/f/8993544534/1/f_75428172402	
			KhNU	https://app.box.com/files/0/f/11694327400/1/f_98077715656	
			KSMA	https://app.box.com/files/0/f/9098661981/1/f_76271345109	
			DSTU	https://app.box.com/files/0/f/11485614140/1/f_96322206154	
4.1.3	Evaluation of the newly development and modified modules (peer reviews) & Final Working programs	Verified modules by 2 EU partners and 4 UA partners*	ISTU	https://app.box.com/files/0/f/6253737749/Verification_by_UB_and_ISTU	Reviews WUS: KTU Final Results\WP5 Quality Assurance\WP5.3 Adaptation of Modules and Training Reviews partners: KTU Final Results\WP4 Development\4.1 Curricula\WP4.1 Development of Modules\WP4.1 Reviews by Twinning Partners **Final review by WUS and final working programs**: KTU Final Results\WP4 Development\4.1 Curricula\WP4.1 Reworked working programs\
			KhAI	https://app.box.com/files/0/f/6095139574/Verification_by_KhAI	
			UB	https://app.box.com/files/0/f/6253737749/Verification_by_UB_and_ISTU	
			KhNU	https://app.box.com/files/0/f/6343079185/Verification_by_KhNU	
			KSMA	https://app.box.com/files/0/f/5812368493/1/f_64497651177	
			DSTU	https://app.box.com/files/0/f/5812368493/1/f_64497651177	
4.1.4	Implementation of the pilot modules	Printing the books	ISTU	See KTU Final Results\WP4 Development\4.1 Curricula\WP4.1 Interdisciplinary Modules	
			KhAI		
			UB		
			KhNU		
			KSMA		
			DSTU		
4.2	**Increased national cooperation through guest lecturing**				
4.2.1			ISTU	Done (Table2)	

		KhAI	Done (Table2)	KTU Final Results\WP4 Development\4.2 Guest Lecturing
National exchange between the twining PCUS's staff through guest lecturing (technical-business admin.)	Reports on guest lecture (feedback from lecturers, students, photos from lectures)*	UB	Done (Table2)	
		KhNU	Done (Table2)	
		KSMA	Done (Table2)	
		DSTU	Done (Table2)	

GUEST LECTURING REPORT (DEV. 4.2)

Interdisciplinary modules modules were delivered by lecturers from the partner university (twining partner).
Result Indicators:

- Guest lecturing report (template developed by WP leader)

- Photos from events

- Guest lecturing presentation

- Guest lecturing agenda.

Guest lecturing was conducted by all PCUs in accordance with project timeline. Result Indicators per partner represented in table 2.

Table 2

Guest lecturing General report (FULL DOCUMENTATION SEE ALSO KTU Final Results\WP4 Development\4.2 Guest Lecturing)

Indicators / Partners	Lecturers	Host university	Date	Result indicators							
				Report	Link	Photos	Link	Presentation	Link	Agenda	Link
P6 ISTU	Korotun T.	ISTU	29/03/16	Done	https://app.box.com/files/0/f/1163767345 0/1/f_97633060328	Done	https://app.box.com/files/0/f/116 37673450/P6-ISTU	Done	https://app.box.com/files/0/f/1 1637673450/1/f_9822840309 0	Done	https://app.box.com/files/0/f/116376 73450/1/f_98057716392
P7 KhAI	Danko K., Shteinbrekher D.	KhNU	16/05/16 – 20/05/16	Done	https://app.box.com/files/0/f/1167945754 2/1/f_98029640713	Done	https://app.box.com/files/0/f/805 1877909/Photos	Done	https://app.box.com/files/0/f/1 1679457542/1/f_6669628387 7	Done	https://app.box.com/files/0/f/116794 57542/1/f_97962745772
P8 UB	Gordeev O.	UB	18.03.2016	Done	https://app.box.com/files/0/f/9020789006 /1/f_75664390202	Done	https://app.box.com/files/1/f/902 0789006/UB	Done	https://app.box.com/files/0/f/1 1694937911/Presentation	Done	https://app.box.com/files/0/f/116940 37123/1/f_98072589902
P8 UB	Gordeev O.	KhAI	22-23.03.2016	Done	https://app.box.com/files/1/f/9020791954 /1/f_75663992030	Done	https://app.box.com/files/0/f/902 0791954/KhAI	Done	https://app.box.com/files/0/f/1 1691393878/1/f_9806075136 6	Done	https://app.box.com/files/0/f/116912 30989/1/f_98066564422
P9 KhNU	Hovoruschenko T.	KhAI	19/09/16 – 23/09/16	Done	https://app.box.com/files/0/f/1143728915 5/1/f_95935828198	Done	https://app.box.com/files/0/f/114 37765878/Photos	Done	https://app.box.com/files/0/f/1 1681482496/1/f_9592446213 3	Done	https://app.box.com/files/0/f/116814 82496/1/f_96038348072
P10 KSMA	Karpenko O. Ostafeva G.	DSTU	21/03/16 – 25/03/16	Done	https://app.box.com/files/0/f/9099110873 /1/f_96613907091 https://app.box.com/files/0/f/9099110873 /1/f_76273518441	Done	https://app.box.com/files/0/f/909 9178069/Photoes	Done	https://app.box.com/files/0/f/9 099110873/1/f_76273903521 https://app.box.com/files/0/f/9 099110873/1/f_76273759041 https://app.box.com/files/0/f/9 099110873/1/f_76273606625 https://app.box.com/files/0/f/9 099110873/1/f_76273546569	Done	https://app.box.com/files/0/f/909911 0873/1/f_76273411257
P11 DSTU	Yashina K., Krupnik O.	KSMA	18/04/16 - 22/04/16	Done	https://app.box.com/files/0/f/7603707414 /1/f_62473190858	Done	https://app.box.com/files/0/f/760 3710966/photo	Done	https://app.box.com/files/0/f/7 603707414/1/f_62451475850	Done	https://app.box.com/files/0/f/760370 7414/1/f_98070352446