

CENEAST - WP2- Upgrading of BSc, MSc, PhD degree programmes

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Presentation outline

- Project Aim & Objectives
- Work Packages
- Introduction to WP2 and its deliverables
- Deliverable links
- What we've achieved
- Market need analysis for built environment higher education
- Identification of the appropriate issues for cross institutional module sharing
- Way forward

Project Aim

- To upgrade the curricula on built environment in the universities of Belarus, Russia and Ukraine according to Bologna practices in order to increase their capacity to continually modernise, enhance the quality and relevance of education of the building and civil engineering students to the labour market needs and to ensure international cooperation.

Project objectives

- To upgrade curricula of BSc/specialists, MSc and PhD programmes with new modules on energetically and ecologically sustainable, affordable and healthy built environment in universities of Belarus, Russia and Ukraine in order to enhance the quality and relevance of education in PC universities to labour market needs;
- To transfer the Bologna practices in education (curriculum development, ECTS, innovative learning, etc.) from EU universities to PC universities;
- To develop a virtual interuniversity networked educational system (intelligent library, intelligent tutoring system, intelligent knowledge assessment system, access to the e-sources of the research and educational information) in order to ensure cooperation among the EU and PC universities in education and research;
- To assist the competence development of staff within the PC universities;
- To train at least 240 students during the pilot project.

Work packages

WP No.	Type	Title	Start – End (Month)	Leader
WP 1	Management	Management	1-36	Leader: VGTU
WP 2	Development	Upgrading of BSc, MSc, PhD degree programmes	2-21	Leader: USAL Co-leaders: MSUCE, NTUU “KPI”
WP 3	Exploitation	Development and Exploitation of the Virtual Interuniversity Networked Educational Centre	4-36	Leader: VGTU Co-leader: USAL
WP 4	Quality Plan	Monitoring and Reporting of Results	3-36	Leader: VGTU Co-leader: KSTU
WP 5	Dissemination	Dissemination	28-36	Leader: TUT Co-leader: BSTU

WP 2 - Upgrading of BSc, MSc, PhD degree programmes

No.	Title	Type or nature of deliverable	Language	Delivery date
D2.1	The framework report for the common curricular	Report	EN, RU	2013-05-08
D2.2	Report on common grounds for teaching and learning	Report	EN, RU	2013-07-08
D2.3	Module specifications and teaching materials	Teaching material	EN, RU	2014-06-22

D2.1- The framework report for the common curricular

- Report will describe the common philosophical and pedagogical understanding and capabilities of the partner institutions which forms the basis for module development and delivery.
- Report will be produced basing on:
 - literature review to identify the appropriate issues for cross institutional module sharing,
 - cross institutional consultations (online questionnaires),
 - visits to partner institutions to discuss and identify any outstanding incompatibility issues.
- The report to be completed by May 2013

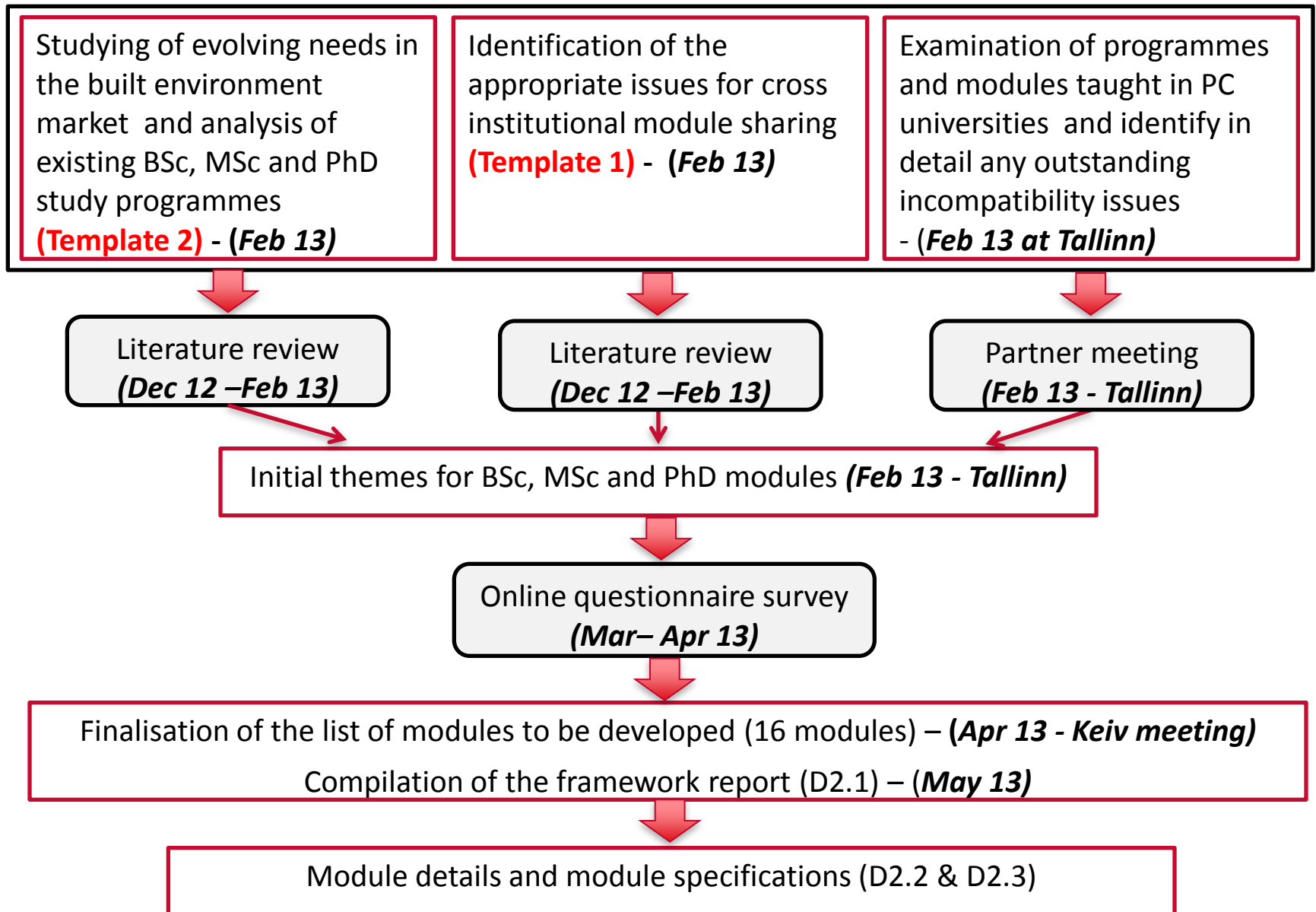
D2.2- Report on common grounds for teaching and learning

- Report will describe commonly usable teaching and learning mechanisms.
- It will form the basis for finer module details with relation to delivery mode, credit basis, etc.
- Modules will be based on common resource and infrastructure capabilities but build upon the expertise of various partner institutions to ensure good practice sharing at national and regional levels.
- Report will be based on cross institutional consultations through online questionnaires, direct visits and virtual meetings.
- The report to be completed by July 2013

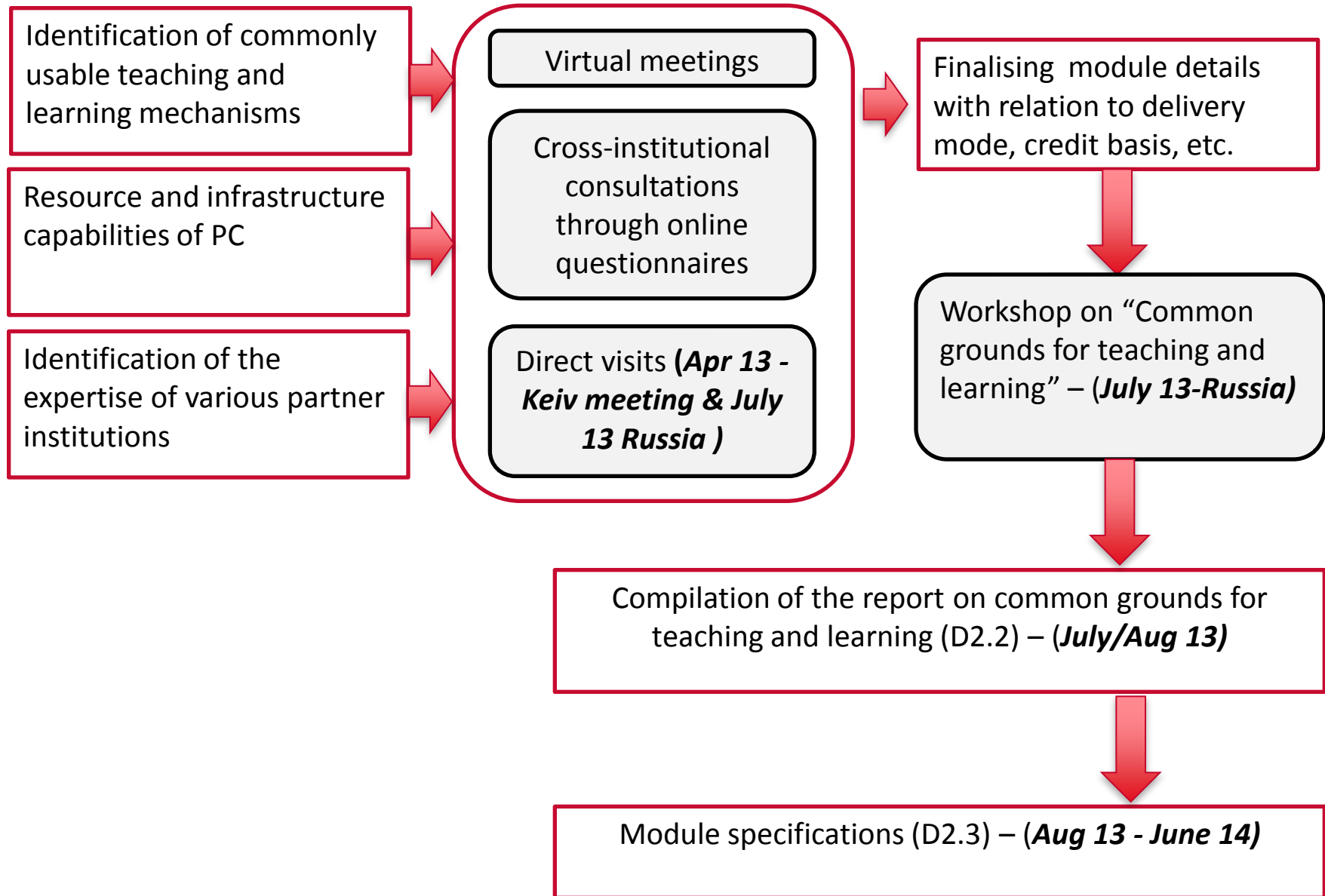
D2.3- Module specifications and teaching materials

- This output will form the common module pool of the virtual interuniversity networked educational system.
- The system will be developed with the capability of hosting the developed modules and will then form the basis for cross partner collaboration in triangulated knowledge sharing.
- Detail specifications of each module will be developed
 - learning outcomes,
 - assessment criteria,
 - subject content,
 - literature resources, etc.
 - teaching materials (handbooks, lecture plans)
- The modules to be developed by June 2014

Deliverable Links (D2.1)



Deliverable Links (D2.2)



What we've achieved..

- Report on market need analysis for built environment higher education
 - Draft report circulated among partners
- Report on identification of the appropriate issues for cross institutional module sharing
 - Report is under preparation

Market need analysis for built environment higher education

- Current progress
 - Data collection and analysis done
 - Draft report is prepared

Methodology

- A literature review has been conducted to identify the evolving market needs in the built environment field.
- In analysing existing built environment related BSc/specialists, MSc and PhD programmes and modules promoting energetically and ecologically sustainable, affordable and healthy built environment;
 - only the universities across United Kingdom have been taken into consideration.
 - Methodology adopted within this section has taken the form of an extensive web search.
 - “University League Table 2013” has been taken as a basis to identify the top most universities offering built environment courses.
 - ‘Building’, ‘architecture’, ‘civil engineering’, ‘land and property management’ and ‘town and country planning and landscape’ subject tables were taken into consideration.
- A list of modules identified for BSc/specialists, MSc and PhD programmes to be implemented in the universities of Belarus, Russia and Ukraine

Evolving needs in the BE market

- Affordability, aesthetics, and usefulness have traditionally been major drivers of building construction, occupancy, and renovation (Brown et al., 2005).
- Built environment make a significant impact to the environment throughout its life cycle.
- In the United Kingdom, buildings are responsible for 45% of total carbon emissions.
- Transition to more sustainable built environment will require a radical change in various sectors such as energy, design, construction and property sector.

Evolving needs in the BE market (Contd.)

- Numerous efforts have been taken to bring sustainable practises to the industry. For example the UK has committed to reducing carbon emissions by 80% by 2050 (Climate Change Act, 2008).
- It is important to equip built environment students with adequate knowledge and skills on sustainability practices in order to promote energetically and ecologically sustainable, affordable and healthy built environment.
- It is necessary to include separate modules to promote energetically and ecologically sustainable, affordable and healthy built environment within existing BSc/specialists, MSc and PhD programmes.

Themes for Bsc Modules

No	Module title	The programmes under which the module could be implemented
1	Sustainable Design/Low Energy Architectural Design	Architecture/ Civil engineering
2	Sustainable Construction	Architecture/ Civil engineering/ Construction management/ surveying/ Planning
3	Engineering Ethics and Sustainability	Civil engineering
4	Sustainability & Urban Design	Architecture/ Planning
5	Infrastructure Management and Sustainability	Civil engineering/ Planning
6	Sustainable Water Resource Management	Civil engineering
7	Introduction to Urban Regeneration	Architecture/ Planning
8	Ecology and Conservation/ Biodiversity and Conservation	Architecture/ Landscape/ Planning
9	Natural Hazards and Environmental Fluid Mechanics	Architecture/ Civil engineering
10	Disaster Risk Reduction, Resilience & the Built Environment	Architecture/ Civil engineering/ Construction management/ Planning

Themes for Bsc Modules (contd)

No	Module title	The programmes under which the module could be implemented
11	Modelling of Floods/ Flood Risk Management / Urban Flooding and Drainage	Civil engineering/ Construction management/ Planning
12	Earthquake Engineering	Civil engineering
13	Climate Technology Management	Architecture/ Civil engineering/ Construction management/ Planning
14	Climate Change: Earth System, Future Scenarios and Threats	Architecture/ Civil engineering/ Construction management/ Planning
15	Environmental Sustainability/ Environmental Decision Making	Architecture/ Civil engineering/ Construction management/ Planning/ Real Estate
16	Environmental Building Modelling and Building Performance	Architecture/ Civil engineering/ Real Estate
17	Environmental Assessment of the Built Environment	Architecture/ Civil engineering/ Construction management/ Planning/ Real Estate
18	Applied GIS and Modelling	Architecture/ Civil engineering/ Planning

Themes for Bsc Modules (contd)

No	Module title	The programmes under which the module could be implemented
19	Performance of Construction Materials/ Sustainable Materials and Recycling/ Natural Building Materials	Architecture/ Civil engineering/ Construction management/ Surveying
20	Introduction to Renewable Energy/ Renewable Energy Design	Architecture/ Civil engineering/ Construction management/ Real Estate
21	Energy Efficient Systems/ Alternative Energy Systems/ Energy, Sustainability and the Environment	Architecture/ Civil engineering/ Construction management
22	Energy and Waste/ Waste Management and Recycling	Architecture/ Civil engineering/ Construction management

Themes for Msc Modules

No	Module title	The programmes under which the module could be implemented
1	BIM, Energy Efficiency and Sustainability	Architecture/ Civil engineering/ Construction management/ Planning/ Surveying
2	Sustainable Design Theory and Practice	Architecture/ Civil engineering/ Construction management/ Planning/ Surveying
3	Lean Integrated Design and Production	Architecture/ Civil engineering/ Construction management/ Planning/ Surveying
4	Technology and Green Construction	Civil engineering/ Construction management
5	Urban and Regional Regeneration/ Urban sustainability (Eco-city)	Architecture/ Civil engineering/ Construction management/ Planning
6	Sustainable Development/Sustainable Housing and Community Development	Architecture/ Civil engineering/ Construction management
7	Principles of Environmental Assessment and Management	Architecture/ Civil engineering / Planning/ Construction management
8	EU Environmental Law/ Policies for Sustainability and Development	Architecture/ Civil engineering / Planning/ Construction management
9	Spatial Planning in Action	Architecture/ Civil engineering/ Planning

Themes for Msc Modules (contd)

No	Module title	The programmes under which the module could be implemented
10	Building Physics and Thermal Comfort / Health and Comfort in Buildings	Architecture/ Civil engineering/ Real Estate
11	Advanced Thermal Modelling/ Advanced Airflow Modelling/ Advanced Lighting Modelling	Architecture /Civil engineering
12	Building Solar Design	Architecture /Civil engineering
13	Post-occupancy Building Evaluation	Architecture/ Civil engineering/ Real Estate
14	Climate Change, Adaptation and Mitigation	Architecture/ Civil engineering/ Construction management/ Planning/ Real Estate
15	Major Hazards Management/ Disaster Risk Reduction in Cities	Architecture/ Civil engineering/ Construction management/ Planning
16	Earthquake Engineering and Structural Dynamics/ Seismic Resistant Design	Civil engineering
17	Energy and the Environment/ Energy in buildings/Sustainable Energy	Architecture/ Civil engineering/ Construction management/ Planning/ Real Estate

Themes for Msc Modules (contd)

No	Module title	The programmes under which the module could be implemented
18	Renewable Energy and Low Carbon Technologies	Architecture/ Civil engineering/ Construction management/ Planning/ Real Estate
19	Materials for Durable and Sustainable Construction/ Natural building materials/ Sustainable construction materials	Architecture/ Civil engineering/ Construction management/ Surveying
20	Transport Planning for Sustainable Development	Civil engineering

Themes for PhD Modules

No	Module title
1	Sustainable real estate
2	Sustainable building design, construction and maintenance
3	Climate change and sustainable construction
4	Planning and climate change
5	Urban futures and scenario-based studies
6	Carbon foot printing and waste management
7	Whole-life cost and value modelling
8	Emerging technologies and innovations for sustainable buildings
9	Energy assessment of buildings, both new build and refurbishment
10	Carbon foot-printing and carbon mapping of buildings, both new build and refurbishment
11	Post-occupancy evaluation of buildings
12	Sustainable use of construction materials
13	Disaster risk management/ Shelter after disaster
14	Environmental impact assessment
15	Integration of renewable technologies into buildings
16	Innovative construction technologies
17	Cities and technology
18	Seismic design and analysis
19	Resilience of complex infrastructure networks

Identification of the appropriate issues for cross institutional module sharing

- Current progress
 - Data collection and analysis done
 - Draft report is being prepared

Methodology

- A literature review has been conducted to identify appropriate issues for cross institutional module sharing
 - research papers in electronic databases
 - conference proceedings and
 - reports published by various institutions

Benefits of cross institutional module sharing

- Knowledge exchange/ good practise transfer
- Solution for multidisciplinary nature of subjects
- Improve quality of teaching and learning
- Shared module development – peer learning opportunities and support

Readiness of the university for cross institutional module sharing

- Administration constraints
- Ability to share resources
- Intellectual property rights
- Addressing institutional requirements in assessment

Issues and challenges in cross institutional module sharing

- Access to geographically dispersed knowledge
- Defining a common curricula
- Defining a common assessment criteria
- Language and culture
- Access to state of art technologies
- Maintaining quality
- Different accreditation requirements
- Differences in academic calendars
- Tutoring

Way forward 1 - at Tallinn meeting

- Discussion on literature findings of all partners on the market need analysis report findings
 - *(Template 2 which all the partners need to follow in doing their reports)*
- Any initial findings on identification of the appropriate issues for cross institutional module sharing
 - *(Template 2 which all the partners need to follow in doing their reports)*

Way forward 2 - at Tallinn meeting

- Examination of programmes and modules taught in PC universities
- Identify in detail any outstanding incompatibility issues
- Deciding initial themes for BSc, MSc and PhD modules
- Discussion on online questionnaire survey
 - Structure of the survey
 - Target respondents
 - Time scales
 - Survey platform
 - Survey development
 - Languages

Way forward – beyond Tallinn

- The framework report for the common curricular – May 2013
 - Compiling literature findings of all partners (*Mar – Apr 13*)
 - Compiling details on programmes and modules taught in PC universities (*Mar – Apr 13*)
 - Reporting any outstanding incompatibility issues (*Mar – Apr 13*)
 - Develop, conduct and analyse the results of the online questionnaire survey – (*Mar– Apr 13*)
 - Decide on the list of modules to be developed (16 modules) – (*Apr 13 - at Keiv meeting*)
 - Compilation of the framework report for the common curricular – (*May 13*)

Thank you