Improvement of master-level education in the field of physical sciences in Belarusian universities, Acronym: "Physics"

Management meeting 5th and 6th Workshop November 2017
Riga Technical University
Anatolijs Zabašta
Adoption of the agenda
<table>
<thead>
<tr>
<th>Agenda</th>
<th>Time</th>
<th>Contributor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Registration</strong></td>
<td><strong>9.00</strong></td>
<td><strong>RTU: A. Zabašta</strong></td>
</tr>
<tr>
<td>Adoption of the agenda. Project progress.</td>
<td>9.30</td>
<td>BSU: A. Fedotov, GrSU, GoSU and BSTU</td>
</tr>
<tr>
<td>Acceptance of curricular by the Ministry of Education and by Partner’ universities.</td>
<td>9.45</td>
<td>BSU: A. Fedotov, GrSU, GoSU and BSTU</td>
</tr>
<tr>
<td>Arrangements for testing of new developed and modernised courses.</td>
<td>10.00</td>
<td>BSU: A. Fedotov, GrSU, GoSU and BSTU</td>
</tr>
<tr>
<td>Preparation for Report on developed courses, teaching materials and study programs and its accreditation in the universities.</td>
<td>10.15</td>
<td>RTU: N. Kunicina</td>
</tr>
<tr>
<td>Welcome by Riga Technical University</td>
<td>10.30</td>
<td>Rector of RTU: L.Ribickis</td>
</tr>
<tr>
<td>Preparation for Report on developed courses, teaching materials and study programs testing.</td>
<td>11.00</td>
<td>RTU: A. Zhiravecka, N. Kunicina</td>
</tr>
<tr>
<td><strong>Coffee break</strong></td>
<td><strong>11.15</strong></td>
<td><strong>Room 508.</strong></td>
</tr>
<tr>
<td>Implementation of curriculum, Book on Applied Physics (WP 2), final version.</td>
<td>11.30</td>
<td>KU Leuven: J. Peuteman</td>
</tr>
<tr>
<td>Implementation of curriculum, Book on Applied Informatics (WP 2), final version.</td>
<td>11.45</td>
<td>RTU: N. Kunicina</td>
</tr>
<tr>
<td><strong>We go to the room 121</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementation of curriculum, Book on Functional Nanomaterials (WP 2), final version.</td>
<td>12.00</td>
<td>BSU: A. Fedotov</td>
</tr>
<tr>
<td>Implementation of curriculum, Book on Photonics (WP 2), final version.</td>
<td>12.15</td>
<td>BSU: A. Fedotov</td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
<td>Presenter(s)</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>12.45</td>
<td>Dissemination and Exploitation of results. Dissemination &amp; Exploitation plan (WP5)</td>
<td>UCY: S. Hadjistassou</td>
</tr>
<tr>
<td>13.00</td>
<td><strong>Coffee break</strong></td>
<td></td>
</tr>
<tr>
<td>13.45</td>
<td>3rd progress report, feedback on EACEA and Belarusian NCP monitoring report.</td>
<td>RTU: A. Zabashta, N. Kunicina, all partners</td>
</tr>
<tr>
<td>14.30</td>
<td>Results of tenders for the equipment.</td>
<td>BSU, BSTU, Grodno SU, Gomel SU</td>
</tr>
<tr>
<td>13.45</td>
<td>Feedback on students training in RTU in September 2017</td>
<td>RTU: N. Kunicina, A. Zhiravecka, A. Fedotov</td>
</tr>
<tr>
<td>15.00</td>
<td><strong>Coffee break</strong></td>
<td></td>
</tr>
<tr>
<td>15.30</td>
<td>Planning of students training UCY in February 2018</td>
<td>UCY: E. Kyriakides</td>
</tr>
<tr>
<td>15.45</td>
<td>Monitoring and evaluation by external expert</td>
<td>T.Vasiljeva, Prof., Vice Rector of RISEBA</td>
</tr>
<tr>
<td>16.45</td>
<td>Other issues</td>
<td>All participants</td>
</tr>
<tr>
<td>17.15</td>
<td>Conclusions, next steps.</td>
<td>RTU: A. Zabašta, all partners</td>
</tr>
<tr>
<td>18.00</td>
<td><strong>The end of the day</strong></td>
<td></td>
</tr>
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</table>
## Agenda on December 1st

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00</td>
<td>Feedback from the previous day discussions</td>
<td>Interested parties</td>
</tr>
<tr>
<td>10:30</td>
<td>Continuing of discussion about curricular (WP2)</td>
<td>Interested parties</td>
</tr>
<tr>
<td>11:00</td>
<td>Issues of common interest. Bilateral meetings.</td>
<td>Interested parties</td>
</tr>
<tr>
<td></td>
<td>The end of the day</td>
<td></td>
</tr>
</tbody>
</table>
Project progress
Acceptance of curricular by the Ministry of Education and by Partner’ universities

Accreditation by the Ministry of Education

• “Functional nanomaterials”
• “Photonics”

Accreditation by the universities:

• BSU
• Gomel SU – specialty “Physics”, master degree, 2 years
• Grodno SU
• BSTU
Arrangements for testing of new developed and modernized courses
Preparation for Report on developed courses, teaching materials and study programs and its accreditation in the universities
Welcome by Riga Technical University

Academician, Prof. L. Ribickis, Rector of RTU
Preparation for Report on developed courses, teaching materials and study programs testing
WP2: Book on Applied Physics
Implementation of curriculum, Book on Applied Informatics
Book on Functional Nanomaterials
Book on Photonics
Book on Guidelines on Master Thesis in Applied Physics
Book on Guidelines on Master Thesis in Applied Physics
Dissemination and Exploitation of results (WP5)
Application of innovative teaching methods & electronic environments (WP3)
Management meeting
3rd progress report: 15.01.2018

- 3\textsuperscript{rd} Financial report: 15.01.2018
- 3\textsuperscript{rd} Technical Report: 15.01.2018
Technical report

- The project implementation was assessed as “good”, and it means that the score was between 60 and 74 points
- Agency pointed out a list of recommendations and necessary improvements:
  - Slow usage of the budget. No payment of staff cost! (BSTU, GoSU, GrSU)
  - To demonstrate institutional support (Grodno SU, Nano industry Association)
  - Delay of purchase of equipment
  - Quality Assurance Plan to be elaborated – is accepted. External expert is hired
  - To explain how IT tool – Moodle is utilized – is provided access to https://dl.bsu.by/
  - A new version of Dissemination plan should be developed. Strategy to engage the labor market and overcome the reluctance towards 4+2 Bologna type degrees – UCY and other partners
  - Demonstrate complementary with the TEMPUS project – please put in your reports (BSU)
  - To explain the role of associated partners - please put in your reports!
  - To demonstrate project outputs at website – more information is allocated
  - Inter-institutional agreements or bilateral agreements signed/to be signed by partner country institutions to promote cooperation in the field of education and/or research, as a result of cooperation in Erasmus+.
Activities report (from the beginning of the project)

SECTION 1: RELEVANCE
1. Relevance of the results
2. Regional cooperation

SECTION 2: QUALITY OF THE PROJECT'S IMPLEMENTATION
1) Activities implemented
2) Quality Assurance Measures
3) Equipment
4) Curriculum Development
5) Teaching and Training activities
6) Governance reform
7) Links with society

SECTION 3: QUALITY OF COOPERATION
1) Involvement of partners and stakeholders
2) Management of the grant

SECTION 4: IMPACT AND SUSTAINABILITY
1) Impact
2) Dissemination
3) Sustainability / exploitation of results
4) Unexpected outcomes/ spin-off effects

SECTION 5: HORIZONTAL ISSUES
1) Previous recommendations/follow up end etc.
Tenders for the equipment
## Tenders for the equipment

<table>
<thead>
<tr>
<th>Institution</th>
<th>Equipment budget</th>
<th>Purchased equipment</th>
<th>Advance equipment 90%</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSU - Belarusian State University</td>
<td>93 600.00</td>
<td>50 449.00</td>
<td>45 404.00</td>
<td>Lack of information about 2-4 lot</td>
</tr>
<tr>
<td>GrSU, Grodno State University</td>
<td>41 938.00</td>
<td>41 938.0</td>
<td>37 744.00</td>
<td>Finished</td>
</tr>
<tr>
<td>GoSU, Gomel State University</td>
<td>34 765.00</td>
<td></td>
<td></td>
<td>??</td>
</tr>
<tr>
<td>BSTU, Belarusian State Technological University</td>
<td>26 500.00</td>
<td>22 813.40</td>
<td>13 868.70</td>
<td>The rest 3686 euro. We are waiting for justification.</td>
</tr>
</tbody>
</table>
Feedback on students training in RTU in September 2017
Participants profile

Number of participants

- Profesors of BSU, Grodno SU and Gomel SU
- Gomel SU students
- Grodno SU students
- BSTU students
- BSU students
Self-evaluation

Mean

The time for the completing...
Recommended literature...
During the class the...
All curriculum themes...
My knowledge of English...
The logical structure of the...
The course was well-
Creative thinking and...
Audiovisual materials were...
The information about the...
The lecturer/professor’s...
# Universities dimension

<table>
<thead>
<tr>
<th>Evaluation criterion</th>
<th>BSU</th>
<th>BSTU</th>
<th>GoSU</th>
<th>GrSU</th>
<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>All curriculum themes required to achieve the defined learning outcomes were covered</td>
<td>4.000</td>
<td>3.667</td>
<td>3.800</td>
<td>4.000</td>
<td>4.600</td>
</tr>
<tr>
<td>The course was well-structured and the themes were explained in a comprehensible manner</td>
<td>3.667</td>
<td>4.333</td>
<td>3.800</td>
<td>4.400</td>
<td>5.000</td>
</tr>
<tr>
<td>The logical structure of the lecture was maintained</td>
<td>3.333</td>
<td>3.667</td>
<td>3.800</td>
<td>4.600</td>
<td>5.000</td>
</tr>
<tr>
<td>Audiovisual materials were efficiently used during the lecture</td>
<td>4.333</td>
<td>4.667</td>
<td>4.800</td>
<td>4.600</td>
<td>5.000</td>
</tr>
<tr>
<td>Creative thinking and practical application of theory was efficiently promoted</td>
<td>4.000</td>
<td>4.000</td>
<td>4.200</td>
<td>5.000</td>
<td>4.600</td>
</tr>
<tr>
<td>During the class the amount of theoretical material and practical tasks was balanced</td>
<td>3.667</td>
<td>3.333</td>
<td>3.600</td>
<td>4.400</td>
<td>4.000</td>
</tr>
<tr>
<td>Recommended literature sources were accessible and helped in acquiring the course materials</td>
<td>4.000</td>
<td>2.667</td>
<td>4.000</td>
<td>3.800</td>
<td>4.200</td>
</tr>
<tr>
<td>The lecturer/professor’s attitude to the students was positive and helpful</td>
<td>4.667</td>
<td>5.000</td>
<td>5.000</td>
<td>5.000</td>
<td>5.000</td>
</tr>
<tr>
<td>The time for the completing of the practical tasks was enough</td>
<td>2.000</td>
<td>3.333</td>
<td>3.800</td>
<td>4.200</td>
<td>4.200</td>
</tr>
<tr>
<td>The information about the classes organisation was clear and easy available</td>
<td>5.000</td>
<td>4.667</td>
<td>4.800</td>
<td>4.800</td>
<td>5.000</td>
</tr>
<tr>
<td>My knowledge of English language was sufficient to understand all learning materials presented by teacher</td>
<td>1.667</td>
<td>4.333</td>
<td>4.200</td>
<td>3.800</td>
<td>5.000</td>
</tr>
<tr>
<td></td>
<td><strong>3.667</strong></td>
<td><strong>3.970</strong></td>
<td><strong>4.164</strong></td>
<td><strong>4.418</strong></td>
<td><strong>4.691</strong></td>
</tr>
</tbody>
</table>
Discussion

• We noticed that evaluation marks given by GrSU students are closer to these ones provided by the teachers.

• It turned out that GrSU administration arranged selection of candidates for training courses according criterions such as English language skill, academic progress and motivation of candidates.

• Evaluation criteria did not include any direct question about self-evaluation of personal contribution to deliverables of the team a student participated.

• However, we admit that students expressed indirectly answering to the topic *The time for the completing of the practical tasks was enough or Creative thinking and practical application of theory was efficiently promoted.*

• We believe this issue to be resolved in future student training courses.
Students training
Planning of teachers training in RTU in February 2018
Preliminary program for the February 5 – 9th

- **1st day**: RTU laboratories, Innovation management: RTU
- **2nd day**: Active use of a digital learning environment: KU Leuven
- **3rd day**: Visit to Renewables Laboratory, which is allocated in RTU filial in Cesis campus.
- **4th day**: Testing of new developed courses. Probably Belarusian universities.
- **5th day**: Testing of new developed courses. Probably Belarusian universities.
Planning of students training in the University of Cyprus in February 2018
Monitoring and evaluation by external expert
Project financial aspects and arrangements for the 3rd Financial report
Total Cost
October 2017

Total cost

Travel cost

Cost of stay
Costs by project lines
October 2017

Staff cost

Equipment

<table>
<thead>
<tr>
<th></th>
<th>Ряд1</th>
<th>Ряд2</th>
</tr>
</thead>
<tbody>
<tr>
<td>P4</td>
<td>50,449</td>
<td>41,938</td>
</tr>
<tr>
<td>P5</td>
<td>41,938</td>
<td>0</td>
</tr>
<tr>
<td>P6</td>
<td>34,765</td>
<td>26,500</td>
</tr>
<tr>
<td>P7</td>
<td>22,813</td>
<td></td>
</tr>
</tbody>
</table>
Cost calculation - salaries

- **Managers (staff category 1)** (including legislators, senior officials and managers) carry out top managerial activities related to the administration and coordination of project activities.

- **Researchers, teachers and trainers (RTT) (staff category 2)** typically carry out academic activities related to curriculum/training programme development, development and adaptation of teaching/training materials, preparation and teaching of courses or trainings.

- **Technical staff (staff category 3)** (including technicians and associate professionals) carries out technical tasks such as book-keeping, accountancy, translation activities..

- **Administrative staff (staff category 4)** (including office and customer service clerks) carries out administrative tasks such as secretarial duties.
Supporting documents for Financial report

- A formal employment contract is required.
- The Time-sheets must be signed by the person concerned and countersigned by the person responsible.
- A duly filled in JOINT DECLARATION for each person employed by the project.
- The JOINT DECLARATION must be signed by the person concerned, then signed and stamped by the person responsible (e.g. the dean) in the institution where this person is normally employed.
- For staff performing different categories of tasks a separate DECLARATION must be signed for each type of activity.
Instructions for a Auditor

For the employees selected, the Auditor checks that they:
• were hired by the beneficiary in accordance with its national legislation;
• were:
  □ employed by the Institution and they were part of its payroll system, or;
  □ were natural persons assigned to the project on the basis of a contract against payment;
• were performing tasks directly necessary to the achievement of the objectives of the project;

Which documents should the beneficiary prepare for the auditor?
□ Employment contracts for the staff in question, as well as standard employment contracts in use for personnel who perform a variety of work for the beneficiary
□ A duly filled-in Joint Declaration
□ If the staff member performs tasks corresponding to different categories of staff, a separate Joint Declaration must be signed for each category.
□ Time-sheets
□ Any material evidence allowing to verify that the declared workload corresponds to actual activities/outputs
Further tasks and the next steps
Deliverables schedule

- The teams are confirmed
- Creation of e-Library
- Standard Programs accreditation in the Ministry of Education
- Middle term reports 15.03.17
- Virtual /online laboratory and virtual environment
- Five electronic courses e-Books are ready
- Study courses acceptance in Belorussian universities after testing
- Documents for curricula accreditation in the Ministry of Education

Courses testing
1st year

- 3rd reports 15.01.18
- Middle term reports 15.03.17
- 1st year
- Ex-Ante report
- Questionnaire
- Report & recommendation for new training programs
- Developed and translated to teaching language study programs and courses for specialities
- Study courses acceptance in Belorussian universities

Testing 2nd year

- The content of Five electronic courses e-Books is confirmed
## Meetings and trainings

<table>
<thead>
<tr>
<th>Place</th>
<th>Responsible</th>
<th>Meeting topics and responsible for the topics</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riga</td>
<td>RTU</td>
<td>WS6: Workshops for curricula development. Courses acceptance and testing is started.</td>
<td>November 30th – 1st December 2017</td>
</tr>
<tr>
<td>Riga</td>
<td>RTU</td>
<td>Teachers training in RTU</td>
<td>February 5-9th 2018</td>
</tr>
<tr>
<td>Nicosia</td>
<td>UCY</td>
<td>Students training in UCY</td>
<td>February 5-16th 2018</td>
</tr>
<tr>
<td>Minsk</td>
<td>BSU</td>
<td>WS7: WP2: Workshops for curricula development and testing</td>
<td>April 12-13th 2018</td>
</tr>
<tr>
<td></td>
<td>GoSU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nicosia</td>
<td>UCY</td>
<td>WS9: WP2: Workshops for curricula development. First testing results, acceptance.</td>
<td>27-28th 2018</td>
</tr>
<tr>
<td>Minsk</td>
<td>BSTU</td>
<td>Final conference</td>
<td>September 12th 2018</td>
</tr>
</tbody>
</table>
Further tasks and the next steps

- Courses e-books: finalizing!
- Dissemination:
  - Press conferences: 1 in each Belarus university
  - Press releases
  - Web and E-environment – improvements
  - References to the project and its website!
  - Facebook, YouTube and LinkedIn
  - Publication at the conferences
- 3rd period report: Financing and Technical (about activities)
- Teachers training
  - Teachers training in Riga – in February 5 - 9th 2018
  - Students training in Nicosia - in February 5 – 16th 2018
- Accreditation:
- New curricular testing
Further tasks and the next steps

- Reports
  - Report on developed courses teaching materials and study programs (*the form is distributed among the partners*)
  - Report on new curricular testing and accreditation (*the form is distributed among the partners.*)

- How to obtain the advance?
  - Financial report is submitted by (*Excel, copies of supporting documents*)
  - Explanation and justification of planned expenses.
  - Payment will be done by 90% of expenses
Questions