Entrepreneurial dimension of science and engineering higher education in India and Russia / Entree

Logic Framework Matrix

Wider Objective:	Indicators of progress:	How indicators will be measured:	
What is the overall broader objective, to which the project will contribute?	*What are the key indicators related to the wider objective?*	*What are the sources of information on these indicators?*	
• To modernize master level curriculum in engineering and science at Russian and Indian universities in close cooperation with business community to form entrepreneurial competency for master's students by using the best EU educational practices	• Established "EU universities – IN universities – RU universities" network • Established "Engineering and science students – business community" network in Russia, India	• Joint study of RU, EU and IN universities • Reports from business and university representatives	
Specific Project Objective/s:	**Indicators of progress:**	**How indicators will be measured:**	**Assumptions & risks:**
What are the specific objectives, which the project shall achieve?	*What are the quantitative and qualitative indicators showing whether and to what extent the project's specific objectives are achieved?*	*What are the sources of information that exist and can be collected? What are the methods required to get this information?*	*What are the factors and conditions not under the direct control of the project, which are necessary to achieve these objectives? What risks have to be considered?*
• To modernize science and engineering curricular at RU and IN universities by including entrepreneurial dimension (new entrepreneurial educational trajectory (idea–project–start-up)) • To adopt new pedagogical business-oriented teaching methods (case study and problem—based learning (PBL)) and e-Learning technologies • To enhance participation of business community in master level curriculum in engineering and science • To adopt modern pedagogical methodologies (instructional design and gamification of education) that can enhance motivation of engineering and science students • To enhance entrepreneurial competence of partner countries universities teachers and enhance networking amongst the participating universities	• The number of modernized courses at RU and IN universities • Enhanced entrepreneurial skills of RU and IN students • The increased number of start-ups developed by students • Use of modern e-Learning technologies in teaching and learning process • The increased number of business community experts involved in engineering and science education curricula • Increased motivation of engineering and science students • No. of trained staff from partner countries universities	• Programme curricular and course syllabi • Project progress report – monthly internal monitoring: stakeholders' and students' feedback • Database of student's start-ups • Database of business community experts • University register of students enrolled to engineering and science programs • Feedback form business community representatives to the quality of students' training • Curriculum alumni tracking • Agreements signed between CM on academic staff mobility • Learning guide on business community involvement	• Russian, Indian and European partners have the same vision on the overall process and involve similar tools that are mutually developed • Lack of motivation form engineering and science students to business education and entrepreneurial activities • Implementation of a new e-Learning technologies could be interpreted by conservative educators as a threat to traditional education process • There is a cultural gap between business community and academic institutions • Bureaucratized administrative procedure at RU and IN partners may impede structural changes to academic curricular

Outputs (tangible) and Outcomes (intangible):	Indicators of progress:	How indicators will be measured:	Assumptions & risks:
• *Please provide the list of concrete DELIVERABLES - outputs/outcomes (**grouped in Workpackages**), leading to the specific objective/s.:*	*What are the indicators to measure whether and to what extent the project achieves the envisaged results and effects?*	*What are the sources of information on these indicators?*	*What external factors and conditions must be realised to obtain the expected outcomes and results on schedule?*
WP1: Preparation: analysis of expectations, needs and experience: D1.1. Business community needs, and expectations analyzed. D1.2. Current situation at RU and IN universities concerning engineering and science curricula analyzed. D1.3. The list of selected and assigned engineering and science curricula to modernize.	• No. of assessment visits and produced reports on current situation assessment at RU and IN universities • Selected and assigned engineering and science curricular at IN university • Selected and assigned engineering and science curricular at RU university • No. of interviews with IN business community representatives • No. of interviews with RU business community representatives • No. of focus-groups participants both in RU and IN • Developed, peer-reviewed teaching materials for selected curricula in RU and IN • No. of participants of instructional design and gamification implementation seminars • Over 100 RU and IN staff trained in instructional design and gamification implementation • "Introduction to entrepreneurship" course syllabi • Elaborated Quality monitoring guidelines • Curricula and teaching materials evaluation results • No. of quality assurance visits • No. of dissemination seminars participants • No. of agreements with stakeholders • Elaborated and proved administrative guidelines for project management	• 7 assessment reports on current situation at RU and IN partners • Approved list of selected and assigned engineering and science curricula • Interview and focus-group analyses reports • Modernized master program curricula documents approved by relevant university authorities (both in IN and RU) • Approved sets of peer-reviewed teaching materials in EN languages printed and uploaded to project web-site • Published guide on instructional design and gamification implementation for partner countries universities teachers • Seminars participants feedback report • Quality monitoring reports • Evaluation reports • Project management plans and reports • Minutes of the consortium and Executive Board meetings • Project web-site statistics • Project web-site containing all relevant and up-to-date information pertaining to the project realization and results	• All partners will cooperate closely to form core master curriculum • Differences in teaching and learning systems between RU, IN and EU universities • There is an enough number of business community stakeholders to modernize the curriculum • Survey respondents are motivated and responsive • It is necessary that all staff involved is motivated, flexible and ready for changes • It is necessary that staff involved has a good command of English language • University managerial bodies can be bureaucratic • It is necessary that all staff involved has enough expertise in the areas of the project • It is necessary that all staff needed for modernised programme implementation is available and motivated • Intercultural management differences
WP2: Entrepreneurial dimension development: D2.1. Modernized curricula (IPS educational trajectory (idea–project–start-up) developed). D2.2. Modernized syllabi of IPS educational trajectory. D2.3. Teaching materials list.			
WP3: Professional development: D3.1. Networking competences university partners teachers. D3.2. Instructional design and gamification implementation competencies.			
WP4: Implementation: D4.1. Curriculum modernization implementation approved at each RU and IN university. D4.2. Curriculum implemented.			
WP5: Quality plan: D5.1. Quality of curriculum implementation assured. D5.2. Quality assurance visits. D5.3. Quality control			

activities for the future defined. D5.4. External audit completed. **WP6: Dissemination:** D6.1. Awareness of the project raised, project results disseminated. D6.2. Project web-site. **WP7: Management:** D7.1. Administrative guidelines for project management. D7.2. Internal project guideline. D7.3. Strategic management of the project. D7.4. Every-day management of the project.	• Effective management of the project • Project web-site running		
Activities: *What are the key activities to be carried out (**grouped in Workpackages**) and in what sequence in order to produce the expected results?* W1: A1.1.1. Business community focus-groups; A1.1.2. Business community semi-structured interviews; A1.2.1. Survey of RU and IN universities; A1.2.2. Evaluation visits; A1.2.3. Assessment report on current situation at RU and IN universities; A1.3.1. Selection and assignment of curricula; W2: A2.1.1. Development of IPS educational trajectory (idea–project–start-up); A2.1.2. Modernization of master's research activity; A2.2.1. Development of "Introduction to entrepreneurship" course syllabus; A2.2.2. Development of "Idea" module syllabus; A2.2.3. Development of "Project" module syllabus; A2.2.4. Development of "Start-up" module syllabus; A2.3.1. Development of teaching materials;	**Inputs:** *What inputs are required to implement these activities, e.g. staff time, equipment, mobilities, publications etc.?* 1.1.1.		**Assumptions, risks and pre-conditions:** *What pre-conditions are required before the project starts? What conditions outside the project's direct control have to be present for the implementation of the planned activities?* Pre-conditions: • All partners are highly motivated to participate in all project activities • Administrative staff of all partner universities is supportive • Interest from both RU and IN business partners to take active part in the educational process • All EU universities involved into the project have significant experience concerning project objectives and are ready to share it • All partners have necessary resources to achieve project objectives • Staff of RU and IN universities involved into project have sufficient English language knowledge

W3: A3.1.1. Training in networking competences; A3.1.2. Series of webinars on networking competences; A3.2.1. Series of training on instructional design and gamification; W4: A4.1.1. Administrative procedures enabling pilot implementation; A4.2.1. Pilot implementation of curricula; W5: A5.1.1. Peer-review of modernized curriculum; A5.1.2. Peer-review of course "Introduction to entrepreneurship" syllabi; A5.1.3. Peer-review of module "Idea" syllabi; A5.1.4. Peer-review of module "Project" syllabi; A5.1.5. Peer-review of module "Start-up" syllabi; A5.1.6. Survey of master's students; A5.1.7. Survey of business community representatives; A5.1.8. Analysis of surveys; A5.1.9. Corrections; A5.2.1. Quality assurance visits; A5.3.1. Quality control activities for the future; A5.4.1. External audit; W6: A6.1.1. Information sessions; A6.1.2. Dissemination conference; A6.2.1. Project web-site updates and maintenance; W7: A7.1.1. Elaboration of the administrative guidelines; A7.2.1. Development of internal project guideline; A7.3.1. Annual F2F strategic meetings; A7.3.2. Strategic planning and reporting; A7.3.3. Strategic meeting in Brussel; A7.4.1. Coordination online meetings.			Risks: • Changes in financial regulations of RU and IN universities • Turn-over of key staff at partner universities Assumptions: • Visa complications • Currency exchange losses