



8 July 2022

Crisis and Risks Engineering for Transport Services

Final Conference Implementation of Quality Assurance Strategy in the CRENG project



Co-funded by the
Erasmus+ Programme
of the European Union

Joint Project: Capacity Building in the Field
of Higher Education ERASMUS+ 2018

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Main definitions

QM Strategy – to incorporate quality into the planning and design of the project and its results

Two side approach to the project QM

QA of project results – the extend in which project results meet sponsor's requirements

QA of project management – project completed with appropriate recourses consumption

Cost of Quality

5,8% of Project Budget
planned/ spent



Cost of Conformance

Prevention Costs

(build a quality product)

- Training
- Documents, processes
- Time to do it right

Quality Assessment

- Piloting
- External Auditors

Money spent during the project
to avoid failures

Expected that will be avoided



Costs of nonconformance

Internal Failure Costs

(Failure find by the project)

- Rework

External Failure Costs

(failure found by the sponsor)

- Penalties

Money spent during and after the
project **because of failures**

Quality Assurance: Structure

Internal QA

Project level

Responsible for implementation of quality assessment activities: Coordinator, EXO Launch (P4)

Objects:

- project implementation (timelines, compliance with the work plan, budget spending),
- quality of results (events, teaching materials etc.)

Institutional level

Responsible: each partners

Objects:

- MA program,
- teaching materials,
- events,
- execution of the work plan, budget spending

External QA

External expert

Activities:

Meetings with the project team and focus groups, Seminars, Providing Reports (on the stages of interim and final reports to EACEA)

External Financial Auditor

Activities:

Providing report on the stage of final report to EACEA

NEO

Activities:

Monitoring: Preventive, Advisory, Impact, Institutional

EACEA

Activities:

Interim Report, Final Report, Monitoring of the Project Officer

QM processes

Monitoring and recording the results of executing the QM activities to assess performance and ensure the project outputs complete, correct and meet stakeholders' expectations



- Identifying quality requirements for the project and it's deliverables;
- Documenting how the project will demonstrate compliance with quality requirements.

Translating QA plan into executable quality activities

Plan QM. Documents

Project level

Quality Assurance Plan/ Strategy

Metrics

Templates of questionnaire/ reports

Recommendations for quality assessment of implementation of new and modernized curricula modules

Institutional level

QM Plan

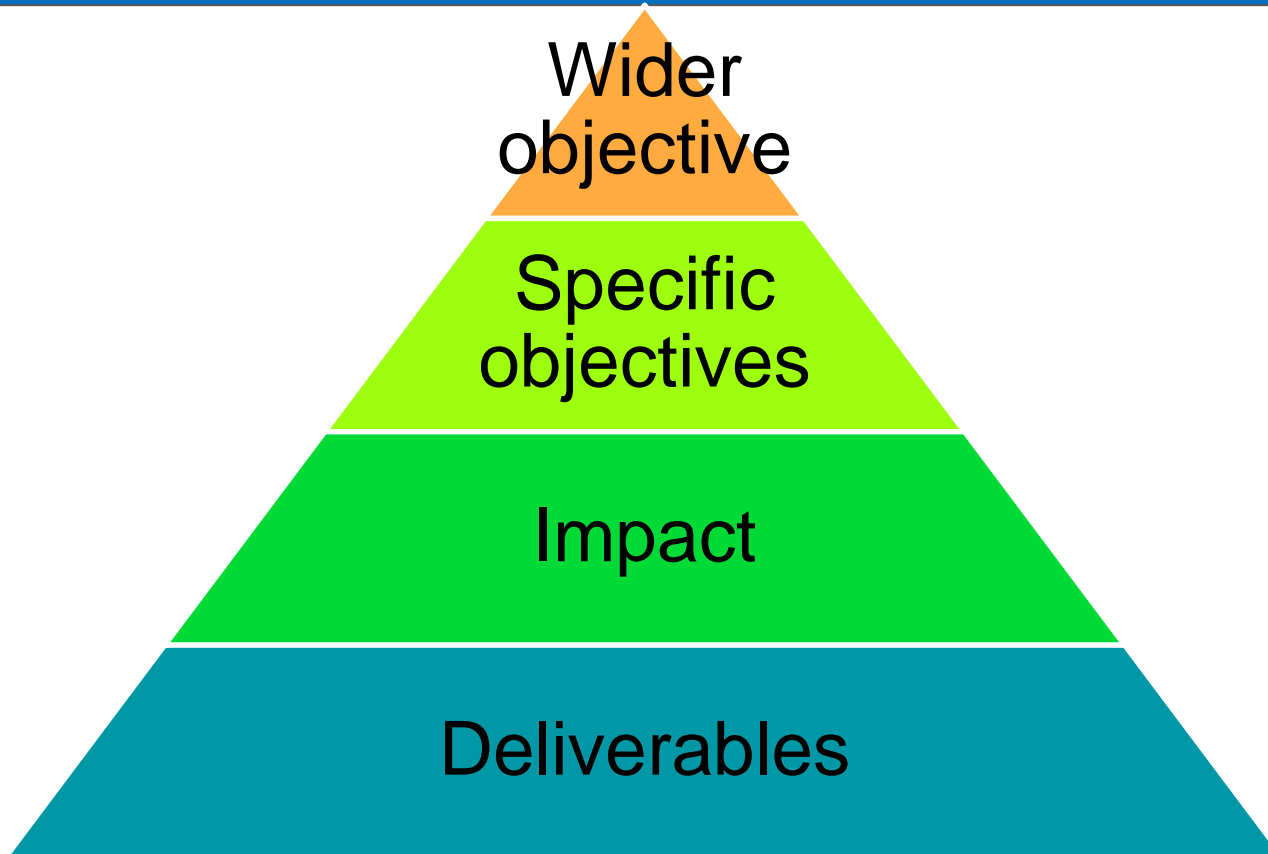
Minutes on establishment of Quality Group

Questionnaires

<https://www.creng.eu/index.php/documents>

<https://events.pstu.edu/creng/dokumenty/>

Plan QM. Metrics



Plan QM. Metrics

LOGICAL FRAMEWORK MATRIX – LFM

<p>Wider Objective: What is the overall broader objective, to which the project will contribute?</p> <ul style="list-style-type: none"> To support of development of Crisis and Risks Engineering for transport services (CRENG) to ensure sustainability of UA, AZ, TM transport systems for their integration into Global transportation network. To contribute CRENG development in PCs the environment for education of high skilled specialists in line with labor market, EU best practices and Bologna process will be created. 	<p>Indicators of progress: What are the key indicators related to the wider objective?</p> <ul style="list-style-type: none"> Implementation of CRENG in PCs enterprises growth; 100% employability of graduates of new MA program on CRENG; Annual increase in CRENG graduates demand together with annual increase in CRENG MA program entrants. 	<p>How indicators will be measured: What are the sources of information on these indicators?</p> <ul style="list-style-type: none"> Official statistics of PCs; Statistics of PCs HEIs; Statistics of PCs Ministries of education on graduation and employment. 	
<p>Specific Project Objective/s: What are the specific objectives, which the project shall achieve?</p> <ul style="list-style-type: none"> To develop, implement and accredit new practice oriented, student- focused MA program on CRENG including innovative teaching/learning. approaches and ECTS in UA, AZ and TM till November 2021. To bring the HEIs in UA, AZ and TM closer to labor market in CRENG area. To increase collaboration between EU and UA, AZ and TM HEIs in CRENG area. 	<p>Indicators of progress: What are the quantitative and qualitative indicators showing whether and to what extent the project's specific objectives are achieved?</p> <ul style="list-style-type: none"> 9 new core and 3 transferable curricula developed 4 existing curricula updated and implemented; 9 MA program accredit on institutional and national levels in PCs; graduates employability increased; 300 graduates on CRENG annually; satisfaction of employers with graduates skills increased; annual income of CRENG educational environment operating after project increased 	<p>How indicators will be measured: What are the sources of information that exist and can be collected? What are the methods required to get this information?</p> <ul style="list-style-type: none"> annual statistic reports of PCs HEIs about graduation, employability and requests of CRENG experts; public statistic data of Ministries of Higher education of PCs; reports of PCs HEIs departments and subdivisions on implementation and accreditation of new MA programs; Agreements of cooperation between PCs HEIs and EU HEIs 	<p>Assumptions & risks: 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?</p> <ul style="list-style-type: none"> Factors necessary to achieve objectives: Political and socioeconomic stability in the PCs; Support and cooperation from the side of national educational authorities; Public / business willingness to the new technologies; Risks: Language and cultural barriers; Key participants leave the projects.

Plan QM. Metrics

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Plan QM. Metrics

Outputs (tangible) and Outcomes (intangible):

- Please provide the list of concrete DELIVERABLES - outputs/outcomes (grouped in Workpackages), leading to the specific objective/s.:
(PREP) WP 1. Designed guidelines on instructional strategies for MA program "CRENG" development
(DEV) WP 2. Developed and accredited new MA program "CRENG".
Developed new core and transferable curricula on CRENG inc. educational environment.
Increased cooperation between HEIs and employers by creation of Service office and Skills Wallet
Increased collaboration between PCs and EU HEIs by establishing IPBL (Quality plan) WP 3.
Internal and external quality control of processes and deliverables (DISS& EXP) WP 4.
Dissemination events according to Dissemination strategy and event plan conducted; stakeholders outside consortium involved.
(MNGT) WP 5.
Management of the project incl. Project management online, daily project administration and coordination are conducted.

Indicators of progress:

What are the indicators to measure whether and to what extent the project achieves the envisaged results and effects?

- 9 PCs HEIs and 3 EU HEIs sign an Agreement and Guideline model for MA curricula development and implementation;
- 12 new curricula developed, 4 current curricula updated and implemented incl. learning content;
- 9 MA programs "CRENG" accredited on institutional and national levels;
- 108 teachers retrained on new curricula and IPBL;
- 6 master classes on new MA program conducted for 180 teachers and 270 students;
- 270 students from PCs HEIs involved in pilot teaching on CRENG;
- 100% students satisfaction of learning process;
- 18 people from PCs HEIs retrained to operate Service Offices;
- 9 Service Offices VCR and CRENG Labs established and equipped;
- 45 organizations signed CRENG+ Agreement;
- 36 PCs and 20 EU students participated in IPBL;
- 1 CRENG Service Offices network;
- 100% execution of Dissemination event plan;
- 270 specialists of enterprises retrained;
- 18 enterprises and 60 students participated in Skills Wallet.

How indicators will be measured:

What are the sources of information on these indicators?

- Reports of Project working groups meetings;
- Published learning/teaching materials;
- Published guidelines (Labs creation, Service Offices creation, IPBL and Skills Wallet implementation);
- Reports of the departments meeting, in PCs HEIs;
- Reports of the faculty council meeting in PCs HEIs;
- Reports of the meeting of the university council;
- Invoices;
- Receipts;
- Web Platform update report;
- Statistics of visitors of groups in social networks;
- Statistics of website visitors;
- CRENG+ Agreements of cooperation;
- Results of conducted pools;
- Promotion materials published;
- Interviews records;
- Articles published;
- Agreement on conduction of refreshing courses for graduates.

Assumptions & risks:

What external factors and conditions must be realised to obtain the expected outcomes and results on schedule?

- Risk of instability of international currency will be mitigated by storage of project funds in foreign currency. Risk can be avoided by procurement making as soon as possible and stored in the warehouses until installation.
- Risks of instability of political situation in Ukraine (Mariupol) will be mitigated by replacement of project working group meeting to another Ukrainian city for example to Kyiv or Dnipro.
- Risk of non-targeted use of grant funds is mitigated by providing financial audit: internal and external (regarding to the project) by providing financial report to project coordinator every month; external by ordering audit service to independent company with providing brief report by auditor.
- Risk of time constraint is mitigated by solid work plan, which takes into account bureaucratic delays in documents and events preparation.
- Social risk consists in difficulty of reaching the target groups (students, enterprises). To mitigate this risk affect it is necessary to create effective advertising environment by establishing project web-pages and societies in social networks; conducting meeting and conferences.

Plan QM. Impact metrics

Impact	Target groups/potential beneficiaries	Quantitative indicators (in numbers please)	Qualitative indicators
Individual Level			
Involvement of direct beneficiaries for their professional development	Students, university academic and non-academic staff, representatives of transport sector in consortium	Number of participants from each group involved at each project activity	
Involvement of indirect beneficiaries for their professional development	Students, university academic and non-academic staff, representatives of transport sector out the consortium	Number of participants outside the consortium from each group involved at each project activity	
Professional development of participants	Students, university academic and non-academic staff, representatives of transport sector	% of new skills received after participation in CRENG project activities	Level of employers' satisfaction with graduates' skills before and after the project; list of new skills received by participants during CRENG project
English skills of participants	Students, teachers	Number of lectures delivered in English before and during the project; number of teachers delivered lectures in English before and after project; % of students' skills improved during the project in comparison with the beginning of the project	
Individual internationalization	Students, academic and non-academic staff	Number of international students and staff mobility before and after the project; number of cases of participation in activities abroad.	
Students employability	Students	% of students employability before and after the project	

Plan QM. Impact metrics

Institutional level			
University ranking		Number of points on which the rating of the university increased as a result of participation in the project	
Spin-off effects	University	Number of new joint projects launched in the result of cooperation in frame of the CRENG project; number of joint publications prepared in the result of cooperation in frame of CRENG projects; Number of cases of university participation in networks and associations in the result of cooperation in frame of CRENG projects	
Organizational changes	University		Cases of organizational changes; level of positive influence of such changes
Popularity among students	University	Additional number of students attracted	
Institutional internationalization	University	Number of Joint International Master's degree established; number of courses delivered in English	Cases of contribution to the institutional strategy of internationalization
Interaction with employers/ industry	University	Number of employers involved to the CRENG project implementation	List of activities of CRENG project with employers participation

Plan QM. Impact metrics

HE Sector			
Innovativeness of developed educational content	HE sector	% of educational content newer existed in UA before	
Society			
Cooperation with employers and external stakeholders	Transport companies, institutions outside the consortium	Number of employers/ stakeholders involved to cooperation in the result of cooperation in frame of CRENG projects; Number of CRENG+ Agreements signed Number; Number of stakeholders joined CRENG SO Network; number of events conducted with stakeholders' participation.	
Lifelong learning	Transport companies, institutions outside the consortium	Number of training courses conducted in time and after the project; Number of training courses participants.	

Plan QM. Management. Main Documents

- ❖ Information management package

<https://www.creng.eu/images/downloads/documents/CRENG%20Information%20Management%20Package.pdf>

- ❖ Coordinating meetings minutes

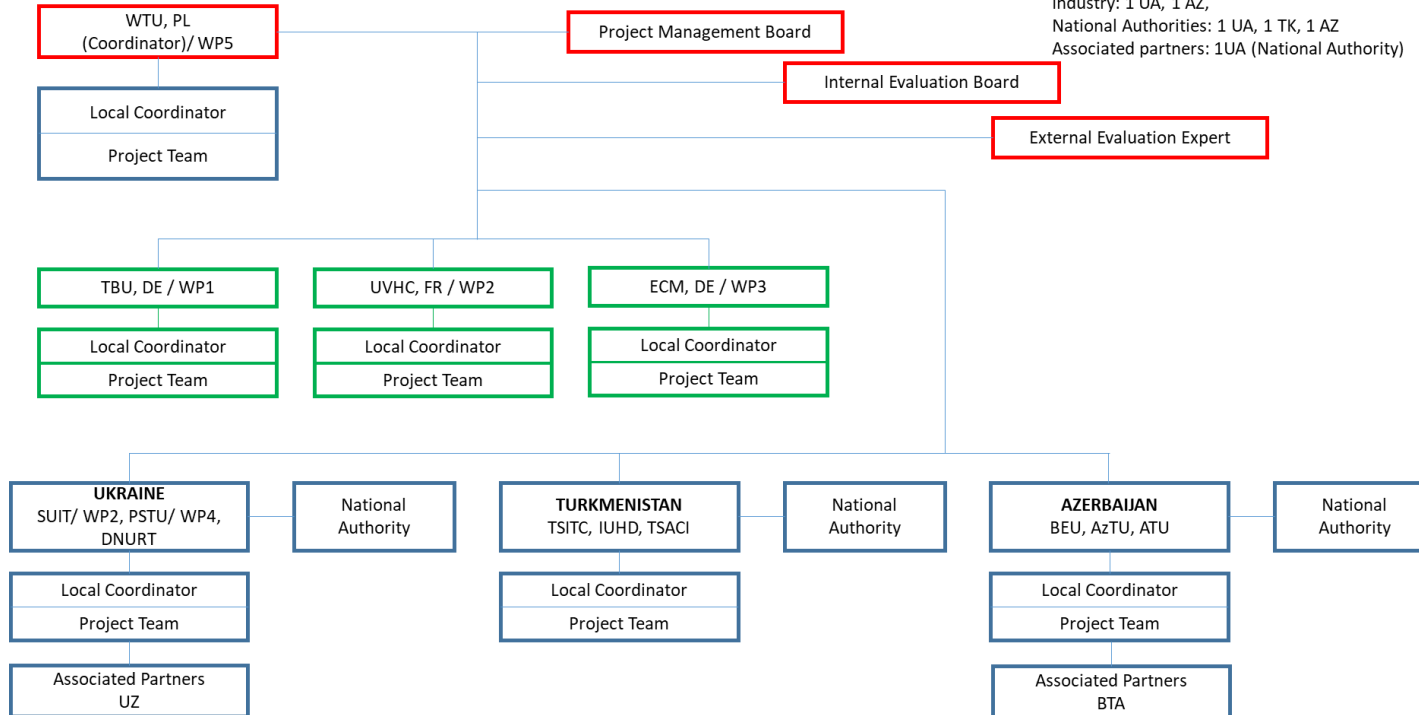
<https://www.creng.eu/index.php/meetings/6-kick-off-meeting-warsaw>

- ❖ Project web-site – Project Management

<https://www.creng.eu/index.php/about/consortium-2>

Plan QM. Management. Organigram and role of the partners

Crisis and Risks Engineering for Transport Services CRENG Organigram



CONSORTIUM

EU partners: 3 Universities, one Spin OFF Enterprise

Program countries:

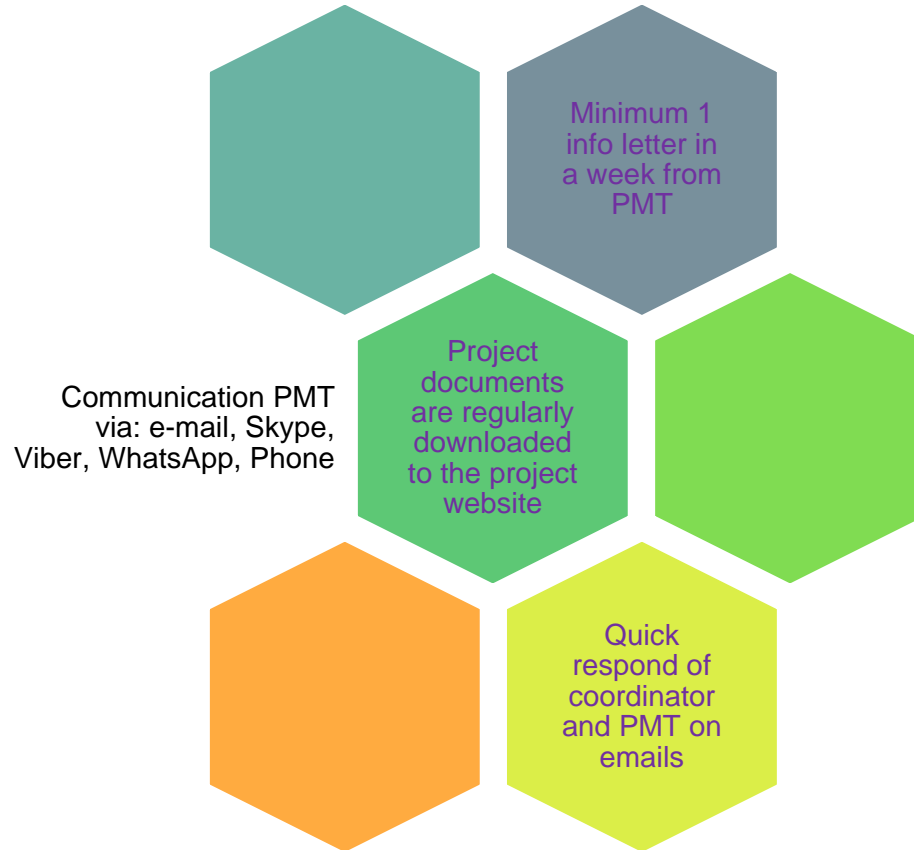
Universities: 3 UA, 3 TK, 3 AZ

Industry: 1 UA, 1 AZ,

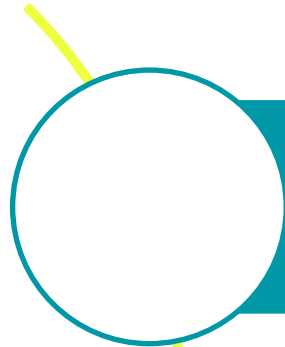
National Authorities: 1 UA, 1 TK, 1 AZ

Associated partners: 1UA (National Authority)

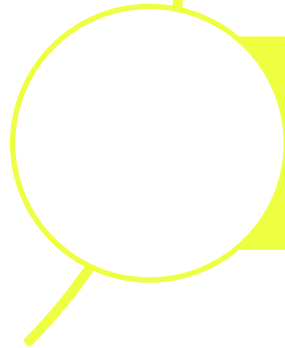
Plan QM. Management. Communication



Plan QM. Management. Decision-making

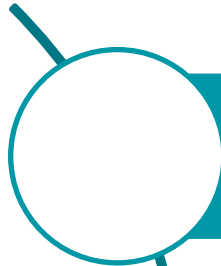


By discussing partners' proposals at coordination meetings and voting

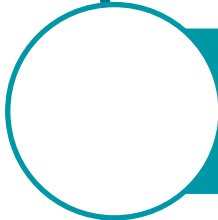


Decisions are approved by the minutes of coordination meetings

Plan QM. Management. Monitoring of project progress



On the 20th of each month, the PMB holds a Skype conference to discuss the actual status of the project and plan activities according to the project implementation plan



After Skype meetings, a Newsletter is compiled and sent to managers and coordinators of partner universities



Each PMB member monitors the timeliness and quality of the implementation of the work plan for its package and advises partners if necessary

Plan QM. External Expert Selection Criteria

- ❖ management, evaluation and analytical skills, self-discipline and motivation;
- ❖ teaching experience in higher education institutes;
- ❖ experience in education projects management, curriculum development that required close cooperation between universities, employees and civil society;
- ❖ experience in Erasmus+ projects management;
- ❖ knowledge of Erasmus+ programs rules/regulations;
- ❖ knowledge of Bologna process objectives and requirements for the partner countries;
- ❖ collaboration and network with other experts through the world;
- ❖ successful experience in evaluation processes for Tempus and Erasmus+ projects during last years;
- ❖ intercultural communication skills to conduct necessary interviews and focus groups;
- ❖ knowing well higher education systems of all three countries of the CRENG project – Ukraine, Azerbaijan and Turkmenistan.

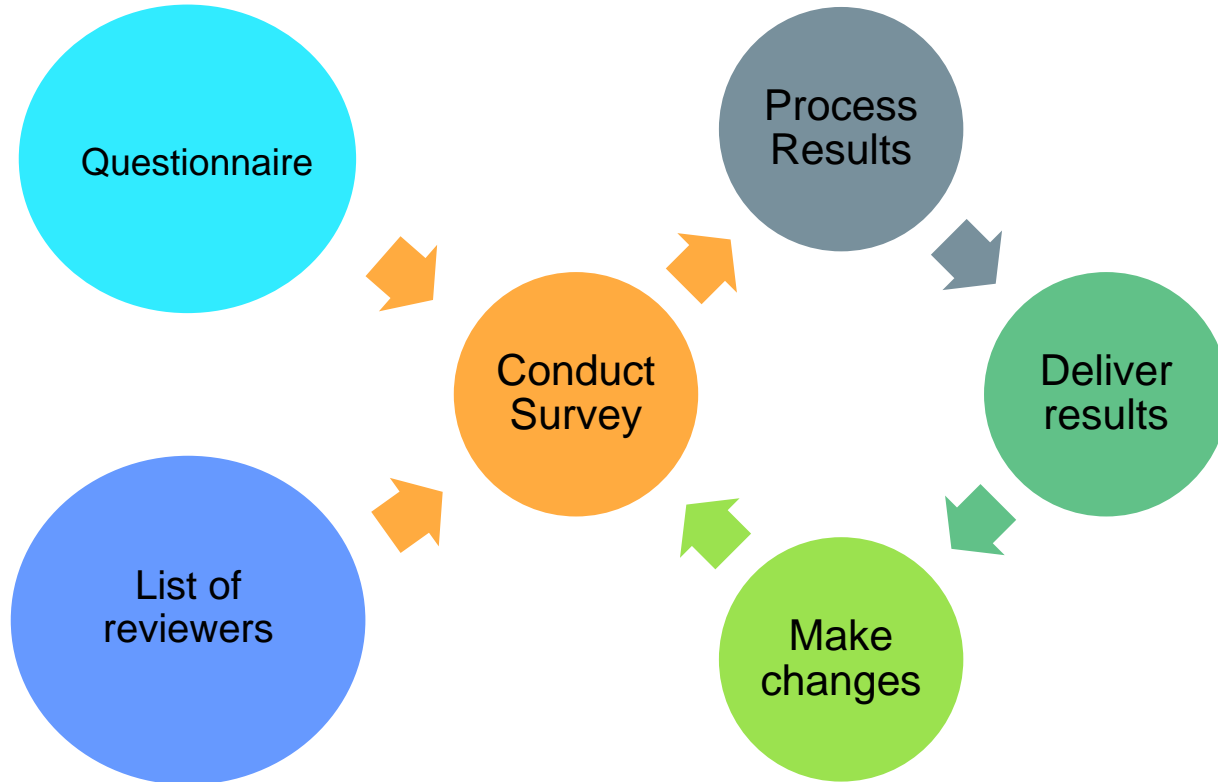
Quality Management. Activities. Project level



Quality Management. Activities. Institutional level

1. Development of selection criteria and selection of educational content developers
<https://docs.google.com/forms/d/1BgY0oxeK-yeMcdkvBjte8i1PVu34OctFH0wj2VMvHr4/edit>
2. Developing questionnaires and interweaving students in the following areas:
 - ❖ effectiveness of communication channels with the target group
 - ❖ satisfaction with the existing quality of education and learning environment
 - ❖ active position
3. Analysis of existing educational plans and selecting courses for updating and including to the new MA program
4. Developing reports on project implementation: 6M, 12M, 18M, 24M
5. **Activities for quality assurance of CRENG educational environment**

Quality Management. Educational Environment



Initial Evaluation

- **University level.** Evaluators: teachers, students, companies
- **Project level.** Evaluators: EU teachers
- **Object of evaluation** - syllabus

Evaluation after pilot teaching

- **University level.** Evaluators: students
- **Object of evaluation** – all educational environment

<https://creng.eu/index.php/teaching-material>

<https://drive.google.com/drive/folders/1oeys00b9zyWgjDYtMFcpD9Rx8pVcGGbl?usp=sharing> (Folder “Якість”)

Initial Evaluation

- **University level.** Evaluators: teachers, students, companies
- **Object of evaluation** – text of study programme

Annual Evaluation

- **University level.** Evaluators: teachers, students, companies
- **Object of evaluation** – all educational environment

Accreditation

- **National level.** Evaluators: National accreditation body
- **Object of evaluation** – all educational environment

Quality Management. Educational environment. MA program initial evaluation

Quality Indicators - employers

- Aims and objectives clearly formulated;
- Skills, that will be achieved after graduation are targeted on labor market;
- All learning components/ learning methods lead to achieving targeted skills;
- Innovativeness;
- Potential for further development.

Quality Indicators - students

- Aims and objectives clearly formulated;
- Student centric approach is implemented in methods of education, possibility of choosing courses, diversity of variable courses;
- Innovativeness;
- Attractiveness.

Quality indicators – teachers

- Fitness to standard of HE in: volume of ECTS, final examination, fitness of learning outcomes for achieving program competencies/skills);
- Aims and objectives clearly formulated;
- List of courses is enough to achieve all program learning outcomes;
- Innovativeness;
- Potential for further development.

Quality Management. MA program evaluation according to UA national legislation – Example of MA program evaluation criteria

The accreditation body of new MA CRENG is National Agency for Higher Education Quality Assurance

New MA program should **meet 9 criteria**:

1. Development and aims of study program (SP)
2. Content and structure
3. Access to the SP and recognition of study results
4. Studying and teaching on SP
5. Assessment of students and academic virtue
6. Human resources
7. Educational environment and resources
8. Internal quality assurance of SP
9. Transparency and publicity

Quality Control – activities examples

QM activity	Recommendation	CRENG Response
Monitoring visit of Project Officer to AZ and TM	To check satisfaction of participants with trainings for PC teachers	The questionnaire were developed, distributed among trainings participants. High level of satisfaction were defined.
Monitoring visit of Project Officer to AZ and TM	To add to the final report to EACEA the list of courses that were newly developed and updated at each PC university in order to evaluate innovativeness of the project results	Reports templates were improved in part of providing more detailed information about newly developed and updated educational content
Intermediate Report to EACEA	To involve EU teachers to evaluation of CRENG courses on initial stage	Syllabuses were sent to EU teachers. One course got low scores. Course were improved in accordance with recommendations
Report of External expert	To review and improve templates of periodic reports in part of including exact quantitative indicators	After improving the templates we defined that it became easier to collect statistics



Thank you for your attention!

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