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ENTER QUALITY ASSURANCE STANDARDS

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ABSTRACT

This deliverable is dedicated to the ENTER QUALITY ASSURANCE STANDARDS for accreditation of engineering educators professional study programmes like iPET programmes and other professional development programmes focused on engineering educators. The deliverable includes also the description of the accreditation procedure under the ENTER guidelines.

The document presents framework standards that were developed by the consortium of the ENTER project, went through several stages of review and discussion between the project partners and invited experts, but this is not the final version, since there has not yet been a pilot implementation in the real accreditation process.

INTRODUCTION

This deliverable has been developed within the ENTER project, work package 3 (WP3) – “Quality Plan”.

These framework standards were developed by the consortium of the international project ENTER based on the best practices for assessing the quality of engineering educational programmes in accordance with the quality requirements for teaching staff in the EUR-ACE accreditation system (European Network for Accreditation for Engineering Education - ENAEE).

At this stage of the project, the draft version of the ENTER quality framework standards is already developed, representing the requirements for the quality level of advanced training programmes for engineering educators.

Overall, the ENTER quality assurance standards for professional accreditation of advanced training programmes for engineering educators include five main criteria:

- Programme aims
- Educational process
- Resources
- Monitoring (educators admission, progression and completion)
- Management system

**ENTER QUALITY ASSURANCE STANDARDS
FOR ACCREDITATION OF ENGINEERING EDUCATORS PROFESSIONAL STUDY
PROGRAMMES
(DRAFT Version 2.0)**

1. PROGRAMME AIMS

Standards	Quality Requirements
1 Programme Aims	<p>Quality Requirement 1.1 - Educational needs of the Higher Education market and other stakeholders The study programme should identify the educational needs of the Higher Education market of reference and other stakeholders.</p>
	<p>Quality Requirement 1.2 - Programme aims The study programme should define programme aims consistent with the identified educational needs.</p>
	<p>Quality Requirement 1.3 - Learning outcomes The study programme should define learning outcomes, in terms of what professional educators are expected to know, understand and/or be able to demonstrate in their professional activity (applied to their students) after completion of the educational process, consistent with the national educators qualification framework, if any, the established programme aims and the ENTER Learning Outcomes of Engineering Educators Professional Training.</p>

2. TEACHING AND LEARNING PROCESS

Standards	Quality Requirements
2 Educational process	<p>Quality Requirement 2.1 - Design of the educational process The study programme should design a curriculum and characteristics of the course units and of the completion evaluation consistent with the educational national standards, if any, and the established programme learning outcomes. The curriculum should apply an interactive and interdisciplinary student-centred teaching and learning approach. The study programme should also define assessment methods and criteria able implementing a learning outcome based approach evaluation to ensure the correct assessment of the educators' learning.</p>
	<p>Quality Requirement 2.2 - Admission, recognition, progression and attestation The study programme should establish rules covering all phases of the educators participation, and in particular their admission, recognition, progression and final attestation. The final attestation should demonstrate how the study programme learning outcomes are implemented in the educators professional practice. The final attestation should involve external body representatives. The study programme should allow full access to individual educators and teaching staff with disabilities.</p>

	Allowing individual educators with fewer opportunities is considered a strength of the study programme.
	<p>Quality Requirement 2.3 - Planning of the educational process</p> <p>The study programme should plan the development of the educational process in order to enable the educators to achieve the programme learning outcomes in the expected time, according to a gradual process and through coherent and coordinated educational activities.</p>
	<p>Quality Requirement 2.4 - Management of the educational process</p> <p>The study programme should manage the educational process coherently with the designed and planned development and keep under control its development, in order to resolve any urgent and immediate problem and to check the adequacy of the assessment tests and of the final work to the achievement of the established programme learning outcomes specific of the course units and the correctness of the evaluation of the educators' learning.</p>

3. RESOURCES

Standards	Quality Requirements
3 Resources	<p>Quality Requirement 3.1 - Teaching and support staff</p> <p>The study programme should have at disposal teaching staff, including teaching support staff, technical-administrative staff quantitatively and qualitatively adequate for the achievement of the established learning outcomes by the educators. The teaching staff should be appointed according to pre-definite criteria of recruitment/selection/choice. The experience of the teaching staff in the international higher education system and/or in relevant industrial field is considered as a strength of the study programme. High level international research experience of the teaching staff in the field of teaching is also considered as a strength of the study programme.</p>
	<p>Quality Requirement 3.2 - Facilities</p> <p>The study programme should have at disposal facilities (lecture and study rooms, libraries all of them physical or alternatively equivalent digital/online resources, laboratories), with the associated equipment quantitatively and qualitatively adequate for the development of the established educational activities as designed and planned and able to allow the application of the established educational methods. The resources updating mechanism should exist within the study programme.</p>
	<p>Quality Requirement 3.3 - Financial resources</p> <p>The study programme should have at disposal financial resources adequate for the development of an high leveled educational process according to the designed and planned activities.</p>
	<p>Quality Requirement 3.4 - Educators support services</p> <p>The study programme should have at disposal educators support (orienting, tutoring and assistance) services relevant to the</p>

	educational process and able to make easier the students' learning and progression in their studies.
	<p>Quality Requirement 3.5 - Partnerships If the study programme has partnerships with national and/or international research institutions and/or Higher Education Institutions these should be quantitatively and qualitatively adequate for carrying out educators' external recognition and possible mobility.</p>

4. EDUCATORS ADMISSION, PROGRESSION AND COMPLETION

Standards	Quality Requirements
4 Monitoring	<p>Quality Requirement 4.1 - Incoming educators The study programme should monitor the incoming educators (including their teaching experience) in order to check its attractiveness.</p>
	<p>Quality Requirement 4.2 - Educators' progression in their studies The study programme should monitor the educators' progression in their studies in order to check the effectiveness of the educational process.</p>
	<p>Quality Requirement 4.3 - Educators' learning The study programme should monitor the educators' learning in order to check the effectiveness of the course units and should offer the educators the opportunity to improve their teaching skills and the use of new technologies.</p>
	<p>Quality Requirement 4.4 - Educators' feedback on the educational process The study programme should monitor the educators' feedback on the educational process in order to check the perceived adequacy, effectiveness and be used for the study programme continuous improvement.</p>
	<p>Quality Requirement 4.5 – Educators' learning outcomes usage The study programme should monitor the educators' usage of the learning outcomes in order to check the demand of the granted qualification and the correspondence of the programme aims and programme learning outcomes to the educational needs of the higher education labour market.</p>
	<p>Quality Requirement 4.6 - Stakeholders' feedback on the educators' performance The study programme must have at least one educator that fully completed the programme and is employed as educator. The study programme should continuously monitor, upon completion, employed educators', their students and their employers, to obtain feedback on the educators' performance. The monitoring results should be used to check the correspondence of the programme aims and programme learning outcomes to the educational needs of the higher education labour market and the study programme continuous improvement.</p>

5. INTERNAL QUALITY ASSURANCE

Standards	Quality Requirements
<p style="text-align: center;">5 Management System</p>	<p>Quality Requirement 5.1 - Policy, processes and organization of the Institution for the quality assurance of study programmes</p> <p>The institution responsible for the programme should have a public policy and effective processes and organization for the quality assurance of study programme.</p>
	<p>Quality Requirement 5.2 - Management system of the study programme</p> <p>The study programme should implement an appropriate and effective management system, through the identification of the quality assurance processes and the definition of a relevant organisational structure.</p>
	<p>Quality Requirement 5.3 - Review</p> <p>The study programme should periodically review the processes for the study programme management and the associated results, in order to guarantee their constant adequacy and effectiveness or promote the improvement of the effectiveness of the processes for the study programme management and of the associated results. Educators during the programme and representatives of the labour market of reference should be involved in the review process.</p>
	<p>Quality Requirement 5.4 - Publicly availability of information</p> <p>The study programme should make publicly available full, up to date, easily acquired information, both quantitative and qualitative, on study programme aims and outcomes, educational process, resources and results.</p>

ENTER® Learning Outcomes of Engineering Educators Professional Training

Level 1

1 - Innovations in engineering pedagogy.

Ability to choose optimal strategies and teaching methods using traditional and innovative means, taking into account technosphere development paths, trends and challenges in engineering education

2 - Time management

Ability to manage time efficiently and prioritize professional activities

3 – Effective interaction

Ability to effectively interact with audience and increase students' interest in the discipline, using psychological tools and multimedia technologies

ENTER® Learning Outcomes of Engineering Educators Professional Training

Level 2

1 - Innovations in engineering pedagogy.

Ability to choose optimal strategies and teaching methods using traditional and innovative means, taking into account technosphere development paths, trends and challenges in engineering education

2 - Time management

Ability to manage time efficiently and prioritize professional activities

3 – Effective interaction

Ability to effectively interact with audience and increase students' interest in the discipline, using psychological tools and multimedia technologies

4 - Enhancement of learning interactivity

Ability to develop, adapt and implement modern interactive teaching and learning methods and technologies (inter alia, aimed at increasing students' motivation)

5 - Systems analysis in education

Ability to apply system approach to solving problems of Engineering education

6 - Pedagogical psychology and communication

Ability to apply psychological and pedagogical technologies to professional activities of a teacher

7 - Interaction with stakeholders

Ability to work efficiently with the results of scientific research to ensure their publication, to cooperate with labor market and other stakeholders

8 - Sustainable development

Ability to apply the principles of Sustainable development in the global context

ENTER® Learning Outcomes of Engineering Educators Professional Training

Level 3

1 - Innovations in engineering pedagogy.

Ability to choose optimal strategies and teaching methods using traditional and innovative means, taking into account technosphere development paths, trends and challenges in engineering education

2 - Time management

Ability to manage time efficiently and prioritize professional activities

3 – Effective interaction

Ability to effectively interact with audience and increase students' interest in the discipline, using psychological tools and multimedia technologies

4 - Enhancement of learning interactivity

Ability to develop, adapt and implement modern interactive teaching and learning methods and technologies (inter alia, aimed at increasing students' motivation)

5 - Systems analysis in education

Ability to apply system approach to solving problems of Engineering education

6 - Pedagogical psychology and communication

Ability to apply psychological and pedagogical technologies to professional activities of a teacher

7 - Interaction with stakeholders

Ability to work efficiently with the results of scientific research to ensure their publication, to cooperate with labor market and other stakeholders

8 - Sustainable development

Ability to apply the principles of Sustainable development in the global context

9 - Digital education

Ability to design, organize and accompany educational process in X-learning environment

10 - Problem-based, project-based and Practice oriented learning

Ability to form students' experience of individual and team work on solving real engineering problems and developing of new engineering solutions

11 - Learning outcomes' assessment

Ability to design forms and methods of continuous monitoring, feedback and final assessment of education quality

12 - Course design

Ability to develop teaching materials that foster students' competences formation

13- Engineering innovation process

Ability to lead research, innovative and design activities (work) of students and student teams, and to foster students to generate innovative ideas, to operate their development and implementation stages.

14 – Lifelong learning

Ability to "ongoing, voluntary, and self-motivated" pursuit of knowledge for either personal or professional reasons, enhancing social inclusion, active citizenship, and personal development, as well

ENTER accreditation procedure

1. The institution that carries out the professional training programmes for engineering educators submits a written **application** for professional programme accreditation to the Accreditation agency. In the application the institution must indicate the title and the code (if exists) of the programme to be accredited. If the institution seeks accreditation for several programmes, the title and the code (if exists) of each programme must be clearly indicated. The request is subject to initial analysis if the training programme corresponds to the engineering pedagogy field.

The analysis of the request is done by Accreditation Agency.

The members of the Agency do not have a right to vote on the questions of initial screening of the application that is in institution sphere of interest. To avoid the perceived conflict of interest and to ensure the open and fair discussion of the application no members with any relation with that institution are allowed to participate in any phase of the accreditation procedure.

The request can be denied on the following reasons:

- Incorrect filling in of the request form.
- The institution lacks the working license.
- The information about the educational programme is not available on the institution's web-site.

The institution has the right to consider the remarks and repeat the request. In case of disagreement with the agency decision on the denial of the initial request concerning accreditation of education programme, the institution has the right to appeal in writing to the ENTER register. The appellation should contain the reasons why the negative decision of the Agency is wrong (due to the factual mistakes or due to incompliance to the documents "ENTER Quality Standards" and "ENTER Accreditation Procedure").

2. The Agency takes the decision to start the procedure of accreditation. The Agency signs a **contract** with the institution on the programme accreditation.

3. The Agency provides the institution with the latest version of the criteria and self-study questionnaires.

4. The institution carries out a **self-study process** according to the Agency requirements and submits a self-study report to the Accreditation agency.

5. The Agency appoints an **Evaluation Team** to carry out an auditing of the programme. The Evaluation Team should comprise not less than two experts and consist of a chair, and one programme evaluator, experts in the training field of the programme under accreditation. If the institution seeks accreditation for several programmes, the Agency appoints a separate Evaluation Team for each programme or appoints the same team with extended number of programme evaluators.

6. The institution officially informs the Agency on refusal of a team member or on agreement to accept the proposed examination team.

7. Each programme evaluator signs the statement for no-conflict of interests and sends it to the Agency.

8. Upon examination of a self-study report the Agency takes decision on continuation of accrediting procedure and running of the on-site or virtual visit or on necessity to re-elaborate the self-study report or decision on noncompliance of the programme with criteria and failure to receive accreditation. In the last cases the institution will receive a written statement from the Agency.

9. In case the decision on continuation of accrediting procedure is taken, the team chair and the institution agree on the dates and schedule of the visit.

10. An on-site visit takes not less than one day. At the end of the visit the team chair and the institution responsible person sign **The Audit Memorandum**.

11. On the basis of the audit results and the self-study report analysis the Evaluation Team prepares an **evaluation report** that shall contain a detailed statement on compliance or noncompliance of the programme with the ENTER standards as well as examiner opinion different from the team statement, if any.

12. Within three weeks following the on-site visit one copy of the report is presented to the institution. Within the two weeks of receiving the report the institution may send its **complaints** on team report or breach of accrediting procedure to the Agency.

13. The Agency reviews the report of the Evaluation Team and the institution complaints, if any, and prepares a **suggestion on accreditation or non-accreditation** for a final decision by the Accreditation Board.

14. The decision of the Accreditation Board is to be approved by the Agency Administrative Board and sent to the ENTER register for verification and awarding the **ENTER® Label**.

15. The Agency issues for the programme the corresponding certificate signed on behalf of the Agency and ENTER register and sends it to the institution.

16. The accredited programme is included in the ENTER register LIST OF ACCREDITED PROFESSIONAL DEVELOPMENT PROGRAMMES available at the ENTER web site.

CONCLUSION

This deliverable serves as the basis for further development of ENTER framework quality assurance standards. At the next stage international accreditation agencies authorized in the EUR-ACE system partners of the ENTER Project: AEER (Russia) and KazSEE (Kazakhstan) will develop their own criteria for accrediting professional development programmes that meet the requirements of the ENTER framework quality assurance standards, but at the same time take into account the specifics of the implementation professional development programmes in a particular country that meet national needs and legislation.

Then pilot accreditation will be completed based on the developed criteria and in accordance with the ENTER accreditation procedure.