

**Evaluation of the BET Quality Assurance Matrix
Part II: Academic Master Courses**

The following QA-Matrix should be filled out based on the syllabus, the slides and the supporting material provided by each course developer.

**BET Quality Assurance Matrix (Course level)
Phase: Course development and implementation**

The success of BioEnergyTrain critically depends on the quality of the educational offerings provided by the project. Developing rigorous standards and implementing them throughout the project and maintaining the highest quality is therefore a critical task within BioEnergyTrain.

Academic standards

Standards regarding pedagogic concepts, academic quality, and quality of supporting material.

Assessment field	Criteria	Evaluation [scale 1 (criteria not met) to 5 (criteria fully met)]	Comments
Course structure	<i>The workload and the average time to complete the course is clearly indicated in ECTS.</i>		
	<i>The requirements for previous knowledge to attend the course are clearly stated for the students.</i>		
	<i>Feedback from the students on the quality of the teaching and learning methods and their expectations on the course, are collected at the end of the course.</i>		
Learning outcomes	<i>The overarching goal(s) of the course is (are) clear and operational.</i>		
	<i>The intended learning outcomes (ILO) are clearly defined and operational.</i>		
	<i>The achieved learning outcomes (ALO) are clearly defined and in line with the ILO and the overarching goal.</i>		
	<i>The course encourages students to think beyond boundaries and generate new ideas (if applicable).</i>		
	<i>The course enables the students to use the obtained knowledge to create new products and/or processes (if applicable).</i>		
Learning and Teaching formats	<i>The learning and teaching approaches applied are adequate to achieve the defined ILOs.</i>		
	<i>Case studies and examples through hands-on learning experiences from the industry are integrated.</i>		
	<i>A mixture of learning and teaching formats is part of the course.</i>		
Assessment methods	<i>The examination and the assessment of the achieved learning outcomes correspond with the intended learning outcomes.</i>		
Ressources	<i>The infrastructure requirements stated and provided are sufficient and adequate in view of the intended learning outcomes</i>		
Supporting material and slide development	<i>The supporting material includes e-learning tools (e.g. videos, MOOCs, repository, etc.)</i>		
	<i>Citations are in accordance to academic standards.</i>		

*Definition of innovative teaching and learning methods: in preparation (e.g.: methods that encourage self-centered/autonomous learning)

BET Quality Assurance Matrix (Course level)
Phase: After implementation

Academic standards Standards regarding pedagogic concepts, academic quality, and quality of supporting material.			
Assesment field	Criteria	Evaluation [scale 1 (criteria not met) to 5 (criteria fully met)]	Comments
Feedback from students after completing the course* (questions should complement existing quality feedback systems at the HEI involved)	<i>The workload and the average time to complete the course were in balance.</i>		
	<i>The teaching methods were in line with the Intended Learning Outcomes.</i>		
	<i>The learning methods were in line with the Intended Learning Outcomes.</i>		
	<i>The course met my expectations in terms of knowledge of and competencies in cutting-edge research methods, processes and technologies including their application within the field of biorefinery engineering/biomass value chain management.</i>		
	<i>The course enabled me to work/improve largely self-directed or autonomous.</i>		
	<i>The course balanced team work and individual work.</i>		
	<i>The staff was sufficient and adequate (qualifications, professional and international experience) to teach the course.</i>		
	<i>The provided teaching and learning infrastructure was sufficient and adequate.</i>		
	<i>The course material was sufficient and adequate to achieve the intended learning outcomes.</i>		

*Questionnaire at the end of the course on how the students perceived the teaching and learning methods, the intended and achieved learning outcomes, etc.

Practical standards Standards preparing students and attendees of curricula and training courses with skills and knowledge to compete in the job market.			
Assesment field	Criteria	Evaluation [scale 1 (criteria not met) to 5 (criteria fully met)]	Comments
Feedback from industrial and regional stakeholders involved*	<i>Students of the courses have the "right" knowledge demanded by industries.</i>		
	<i>Students of the courses are able to show problem solving abilities for "real" practical problems.</i>		
	<i>Students of the courses are able to communicate their conclusions to specialist and non-specialist audiences.</i>		
	<i>Students of the courses are able to work/improve largely self-directed or autonomous.</i>		

*Questionnaire to externally involved stakeholders from industry and regional dimension (external lecturer, supervisor of master thesis, supervisor of internships, supporting student camps, etc. to be sent out after graduates worked a few years in the industry.

**Evaluation of the BET Quality Assurance Matrix
 Part III: Academic Master Courses - Nugget level**

The following QA-Matrix should be filled out based on the syllabus, the slides and the supporting material provided by each course/nugget developer.

<p align="center">BET Quality Assurance Matrix (Nugget level) Phase: Course development and implementation</p> <p align="center">The success of BioEnergyTrain critically depends on the quality of the educational offerings provided by the project. Developing rigorous standards and implementing them throughout the project and maintaining the highest quality is therefore a critical task within BioEnergyTrain.</p>			
<p align="center">Academic standards Standards regarding pedagogic concepts, academic quality, and quality of supporting material.</p>			
Assessment field	Criteria	Evaluation [scale 1 (criteria not met) to 5 (criteria fully met)]	Comments
Learning outcomes	<i>The Intended Learning Outcomes (ILOs) are clearly defined.</i>		
	<i>The ILOs are in line with the overarching goal of the course.</i>		
	<i>The achieved learning outcomes (ALO) are clearly defined and in line with the ILO and the overarching goal of the course.</i>		
	<i>The nugget promotes knowledge of and competencies in cutting-edge research methods, processes and technologies including their application within the field of biorefinery engineering/biomass value chain management. (if applicable)</i>		
Learning and Teaching formats	<i>The learning and teaching approaches applied are adequate to achieve the defined Learning Outcomes.</i>		
Assessment methods	<i>The student's self assessment exercises are in line with the intended learning outcome.</i>		
	<i>Solutions for the self-assessment of students are included for direct feedback to the students.</i>		
Supporting Material and slide development	<i>The nugget material is able to demonstrate that the intended learning outcomes are achieved.</i>		
	<i>The supporting material (lecturer handout) enables third parties to take over the nugget with little preparation</i>		
	<i>The supporting material includes solutions for the given examples. (if applicable)</i>		

*Definition of innovative teaching and learning methods: in preparation (e.g.: methods that encourage self-centered/autonomous learning)

Evaluation of the BET Quality Assurance Matrix Part I: Academic Master Programme

Please consider in your evaluation, that the matrix should be filled out based on the curriculum.

BET Quality Assurance Matrix (Curriculum level) Phase: Programme development and implementation

The success of BioEnergyTrain critically depends on the quality of the educational offerings provided by the project. Developing rigorous standards and implementing them throughout the project and maintaining the highest quality is therefore a critical task within BioEnergyTrain.

Educational standards

Standards regarding pedagogic concepts, academic quality, and quality of supporting material.

Assesment field	Criteria	Evaluation [scale 1 (criteria not met) to 5 (criteria fully met)]	Comments
Eligibility	<i>The institutions that offer a programme are recognised as higher education institutions by the relevant authorities of their countries.</i>		
Final Qualifications	<i>The final qualifications (FQs) comprise knowledge, skills, and competencies in the respective disciplinary field(s).</i>		
Study programme	<i>The structure and content of the curriculum fits to enable the students to achieve the final qualifications.</i>		
	<i>The European Credit Transfer System (ECTS) is applied properly and the distribution of credits is clear.</i>		
Admission and recognition	<i>The admission requirements and selection procedures are appropriate in light of the programme's level and discipline.</i>		
Learning, Teaching and Assessment	<i>The programme supports and includes cooperation formats with the stakeholders.</i>		

Resources	<i>The staff is sufficient and adequate (qualifications, professional and international experience) to deliver the study programme.</i>		
	<i>The facilities and the student support services provided are adequate.</i>		
Transparency and documentation	<i>Relevant information about the programme like admission requirements and procedures, course catalogue, examination and assessment procedures etc. is well documented and published taking into account specific needs of mobile students.</i>		
Practical standards			
Standards preparing students and attendees of curricula and training courses with skills and knowledge to compete in the job market.			
Assesment field	Criteria	Evaluation [scale 1 (criteria not met) to 5 (criteria fully met)]	Comments
involvement of industrial and regional stakeholders	<i>Industrial and regional stakeholders are actively involved in the programme (e.g. providing professional education forms, supervising final thesis, providing placements, offering excursions, external lecturer, etc.)</i>		
	<i>Industrial and regional stakeholders are involved in the development of the programme (e.g. in terms of providing relevant topics and real-world challenges to be solved to the students, etc.)</i>		

BET Quality Assurance Matrix (Curriculum level) Phase: After implementation, respectively after the graduates worked a few years in the industry			
Academic standards Standards regarding pedagogic concepts, academic quality, and quality of supporting material.			
Assesment field	Criteria	Evaluation <i>[scale 1 (criteria not met) to 5 (criteria fully met)]</i>	Comments
Practical standards Standards preparing students and attendees of curricula and training courses with skills and knowledge to compete in the job market.			
Should be done by eseia	Criteria	Evaluation <i>[scale 1 (criteria not met) to 5 (criteria fully met)]</i>	Comments
Strategic standards Standards demanded by the strategy for implementing the SET-Plan.			
Assessment field	Criteria	Evaluation <i>[scale 1 (criteria not met) to 5 (criteria fully met)]</i>	Comments