



ASIIN Certification Report

Modules

- *Sustainability-oriented Communication in Organizations¹*
- *Business Anthropology²*
- *Social impact assessment of a service-based remanufacturing business model³*
- *Sustainable innovation in engineering practice⁴*

Provided by (indicated by number)

- Complutense University, Madrid¹
- University of Applied Sciences for Media, Communication and Management, Berlin²
- Foundation for Research and Innovation / University of Florence³
- Cracow University of Technology⁴

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A About the Certification Process

Title of the Module and provider	Previous certification
'Sustainability-oriented Communication in Organizations' - Complutense University Madrid (hereafter referred to as UCM)	–
'Business Anthropology' - HMKW University of Applied Sciences for Media, Communication and Management Berlin (hereafter referred to as HMKW)	–
Social impact assessment of a service-based re-manufacturing business model' - Foundation for Research and Innovation / University of Florence (hereafter referred to as FRI/UniFi)	–
'Sustainable innovation in engineering practice' - Cracow University of Technology (hereafter referred to as CUT)	–
<p>Erasmus+ Project: IMPACT</p> <p>Submission of the final version of the self-assessment report: 19.10.23</p> <p>Date of the online visit: 13.11.2023</p>	
<p>Peer panel:</p> <p>Prof. Dr. Rainer Harms, University of Twente, Netherlands.</p> <p>Prof. Dr. Roman Bartnik, University of Technology, Arts and Sciences, Cologne.</p> <p>Dr. Olaf Neitzsch, Head of Olaf Neitzsch Consulting, specialising in Banking, Automotive and Strategy Consulting</p> <p>Arthur Michalczyk, Student of Industrial Engineering – Mechanical Engineering (M.Sc.) at Technical University, Kaiserslautern</p>	
<p>Representative of the ASIIN headquarter: Dr. Sushmita Kundu</p>	
<p>Responsible decision-making committee: Certification Commission</p>	

Criteria used:

Standards for the Certification of (Further) Education and Training Courses and Modules related to Computer Science, Technology, Natural Sciences and Business Economics as of 04.12.2022 and approved by Certification Commission

European Standards and Guidelines as of 15 May 2015.

B Characteristics of the Modules

a) Name of the module	c) Corresponding level of the European Qualifications Framework	d) Mode of Study	e) Duration & Credit Points	f) First time of offer & Intake rhythm	g) Number of students per intake	h) Fees
Sustainability-oriented Communication in Organizations	6 and 7	Full time	1 Semester - 3 ECTS	September 2024 Elective course	20-30	n/a
Business Anthropology	7	Full time	1 Semester - 3 ECTS	05.10.2015 Mandatory course within full-time curriculum in Business Psychology	10-20	n/a
Social impact assessment of a service-based remanufacturing business model	7	Full time	1 Semester - 3 ECTS	2 ^o semester a.y. 2023-2024 The course is part of the Master (second cycle) Degree: Mechanical Engineering for Sustainability	10-15	n/a
Sustainable innovation in engineering practice	6 and 7	Full time	1 semester - 3 ECTS	October 2025 Mandatory (within full-time curriculum in Eco-technologies for Sustainability) and elective (within full-time curriculum in Biotechnology)	20-30	n/a

The overall objectives of the 4 “Sustainable Innovation Practices” modules developed under the Erasmus+ cooperation for innovation and exchange of good practices - Knowledge Alliances (KA: EAC/A02/2019) (Project Number: 621672-EPP-1-2020-1-DE-EPPKA2-KA) (Project Duration: January 2021 - December 2023) are :

- to help improve sustainability performance through innovation and entrepreneurship
- to discover sustainability challenges and values of different stakeholders as drivers rather than constraints for innovation and entrepreneurship.

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- to support the European agenda for more a sustainable, circular economy, responsible innovation and digitalisation with European values.
 - to develop new, responsible practices to facilitate sustainable thinking, and integration of values-based and normative evaluation criteria in the innovation cycle
 - to deliver proven and new insights, practices and methods to facilitate and teach sustainability-oriented innovation and entrepreneurship with real problem-based cases and empirical data.
 - to nurture new, innovative and multidisciplinary approaches to teaching and learning by turning attention to the sustainability challenges and empirically generating and aggregating knowledge and best practices about SOIE.

C Peer Report for the ASIIN Certificate

1. Formal Information

Evidence:

- Relevant section of the SAR
- Appendix_A5_Curriculum of module_Sustainable Innovation Practices.pdf
- Module descriptions: Appendix_A1 (Complutense), Appendix_A2 (HMKW) , Appendix_A3 (FRI) and Appendix_A4 (CracowU)
- The IMPACT project website www.impact-project.site
- Audit discussions

Preliminary assessment and analysis of the experts:

The core module related information can be derived from the formal characteristic section of the SAR. Thus, the name of the modules under review, their intended EQF level, their respective ECTS credit allocation, frequency of the offering and their presumptive student intake is indicated in this section.

The experts unanimously agree that the modules aim to address important and specialized topics on sustainability relevant to higher education in today's scenario. In this regard, the experts specifically opine that the modules should be made available to the students of all the 4 providers, since the project is aiming as an interdisciplinary collaborative model. The experts insist on the better circulation of the courses because these modules are based on very vibrant topics related to the challenges of today's world. Most of the courses can significantly contribute to the overall immediate demands of sustainability. So, in order to ensure the benefit of these courses to the greater community of Higher Education, these modules should be shared as courses accessible through an open source. Such an endeavor would also underline the launch of these modules as part of a collaborative project. The experts are of the general opinion that if the research and rationale was shared during the project then the output could easily be shared as well.

Final assessment of the experts after the comment of the providers regarding criterion 1:

The HEIs explained that teaching materials (in the form of presentations, toolkits, publications and books) are available to all universities for later use in case of introducing the course as a part of a study program. There is also the possibility of exchanging teaching experiences between partner universities through the international exchanges in a visiting professors scheme. The providers further assured that course descriptions and educational materials to teach the modules will be shared with open access (e.g. with Attribution-ShareAlike (CC BY-SA) Licence). (See below in section F – Recommendation 4)

The experts appreciate the clarification on the mutual accessibility of the courses as evidenced in 7.1 on sharing, 7.2 on the toolkit, and the reference to university-specific regulations in the introduction. These efforts are realistic and sufficient. This may be a ‘minimum plan’ or initial plan, so the experts encourage the participating HEIs to continue their cooperation in the same lines. (See below in Section F -Recommendation 5)

2. Learning Outcomes, Content and Implementation

2.1 / 2.2 Learning outcomes and contents of the module

Evidence:

- Relevant section of the SAR
- Appendix_A5_Curriculum of module_Sustainable Innovation Practices.pdf
- Module descriptions: Appendix_A1 (Complutense), Appendix_A2 (HMKW) , Appendix_A3 (FRI) and Appendix_A4 (CracowU)
- The IMPACT project website www.impact-project.site
- Audit discussions

Preliminary assessment and analysis of the experts:

The IMPACT project, as presented in the SAR, the website and understood by the panelists, proposes to research, collect and collate knowledge on good practices and methods of sustainability from leading European firms and academics, by unravelling the barriers and challenges to it. The project further drives at establishing sustainable innovation cultures based on empirical evidence. The main idea is to nurture a corporate sustainability model through academic and practical coaching.

Therefore, according to the SAR, and the contents section (Section 2) in particular, the basis of preparation of the academic modules is to:

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1. Teach through elaborate databases including internal practices, external stakeholder integration, strategic implementation of sustainable business model patterns and impact management.
 2. Simultaneously develop a Sustainable Innovation Practice/s Toolkit” of methods on how to best involve internal and external stakeholders in innovation-related activities.
 3. Ensure stakeholder involvement in the collaborative review and redefinition of cultural routines, implicit values, and hidden assumptions.
 4. Develop competence regarding development of facilitation tools to diagnose and model sustainable business and to collect, aggregate and provide information and knowledge to improve sustainability performance.
 5. Build on experiences and insights on previous knowledge alliance projects that IMPACT partner organizations have been involved (such as TACIT and GAMIFY) the project will repurpose educational methods and develop new techniques for active debate and learning of sustainability-related facts, challenges and solutions
 6. Cover the social aspect of sustainable development, with particular emphasis on transformation of business models and strategies of industrial companies as well as methods of developing and implementing communication strategies that promote sustainable development and involve stakeholders.
 7. Address the multi-faceted conditions and good practices for implementing innovations related to sustainable development in business, as well as organizational challenges in building sustainable development-oriented innovation cultures.

In addition, for the module **Sustainability-oriented Communication in Organizations**, the self-assessment report (SAR) states the following **intended learning outcomes** - To:

- Know and critically assess current research on sustainability and its outcomes.
- Understand the process to deliver effective communication to different stakeholders. Advance skills on how to set and develop a communication strategy for sustainability
- Understand in depth the reasons why many sustainability oriented communication strategies fail
- Develop skills to carry out a materiality assessment. To get understanding on the importance to consider all stakeholders in the communication strategy and the alternatives to engage different stakeholders
- Know the necessary steps for implementing an efficient communication strategy and plan.

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- Build awareness of the importance to consider the context and maturity of firms when implementing the communication plan.
 - Understand and critically evaluate the different media alternatives to implement a communication strategy
 - Critically evaluate how organizations assess the efficiency of their sustainability strategies
 - Understand the ethics and legal requirements to communicate sustainability claims

For the module **Business Anthropology**, the SAR states the following **intended learning outcomes** as:

- Ability to describe the epistemological assumptions, strengths and weaknesses of business anthropology, and justify its utility in different application domains.
- Ability to explain specific quality criteria for qualitative research, and to design a field research approach conforming with quality criteria
- Ability to perform your own field research project including research design using triangulation, field access and documentation in one of the application domains (design, marketing or organizational anthropology)
- Ability to select, specify and apply suitable methods for data collection, analysis and synthesis
- Ability to contrast theoretical propositions with empirical insights from cases, and to explain how business anthropology allows to address business challenges like values alignment or tensions between strategy and culture

For the module **Social impact assessment of a service-based remanufacturing business model**, the SAR states the following **intended learning outcomes** - To:

- Identify product and service-oriented Business Models (BM) in selected B2B industries
- Distinguish the main characteristics of both BM (product and service oriented)
- Describe the basic concepts of sustainability and of the three dimensions, with a focus on the social dimension
- Exemplify the complexity of social dimension measurements in the mentioned B2B industries
- Explain the basic concepts of the Social Impact Assessment model

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- Identify the features and implications of sustainable innovations in industrial contexts
 - Distinguish the possible design choices related to solutions with a social impact for a business and identify the consequent implications in the BMs
 - Describe the main characteristic of remanufacturing services
 - Interpret the social impact of service-oriented industrial initiatives such as remanufacturing services
 - Interpret the social impact of an industrial initiative that shifts to advanced services
 - Identify the variables related to social impact in a real case of remanufacturing
 - Apply the SIA model to at least one real case of remanufacturing
 - Identify alternative paths that could be undertaken with the results coming from the application of the SIA model

For the module **Sustainable innovation in engineering practice**, the self-assessment report states the following **intended learning outcomes**:

- The student knows and understands the issues and basic concepts related to the principles of sustainable development, the objectives/goals of the sustainable development, the history of the sustainable development, Business Model Canvas, Value Proposition, innovation process, goals of sustainable development in engineering practice.
- The student knows and understands the conditions for implementing innovations based on the principles of sustainable development (SOI).
- The student can identify the basic legal acts regulating the investment process in Poland, European directives related do SOI, regulation Natura 2000, regulations setting technical design conditions including: Integrated Emission Prevention System, Application of Best Available Techniques, Green Chemistry Concept, Good Manufacturing Practices, REACH and Medical Devices rules.
- The student can also figure out the explicit and implicitly values as the basis of the company's organizational culture and potential discrepancies between the values of the company and external stakeholders and their impact on the SOI project performance.
- The student can recognise and understand the barriers for sustainable development innovations in companies as well as good practices.
- The student is able to apply the principles of sustainable development to create the concept of a business model

The student is ready to inspire and take action towards sustainable development in society and business. After studying the above, the experts generally support and substantiate the value and innovative/forward-thinking approach of the modules. Based on the module descriptions and the answers during the online audit, the experts have the following overall view:

The UCM course aims to educate students regarding effective communication of sustainability initiatives within an organisational structure. This course can prove to be vital in terms of stakeholder engagement.

The HMKW course seems to have an anthropological and ethnographical research-oriented approach towards addressing innovation cultures. The course includes real-life case studies and the field research approach. This course does not appear to deal with issues of sustainability to a significant degree in the literature or the tasks mentioned in the course description. As understood by the experts, the course is meant to be integrated into an overall concept of education on sustainability practices. However, from the contents and the learning outcomes as of now, it appears to be largely a generic course on scientific research methods.

The FRI module drives at understanding of the social aspect of sustainability with particular emphasis on the transformation of the business models and strategies of industrial firms so as to ensure adoption of circular business models, advanced services and end-of-life services such as remanufacturing, revamping and refurbishment. Particularly, the students were of the opinion that in case of courses on sustainability, the environmental and economic aspects are mostly taken care of but the social dimension, which is an equally and undeniably important part, is not always incorporated. So, the FRI course is a valuable complement in that respect.

The CUT course envisages the introduction of basic concepts related to the principles of sustainable development among engineers who can then resort to innovations based on the principles of sustainable development and good practices applicable in the corporate and engineering sectors. To the satisfaction of the experts, the students supported their

general opinion and found the new course as a very good opportunity for students to enrich their perspectives on the matter.

However, the experts also supported the opinion that more introductory discussions or foundational knowledge on 'sustainability' will be helpful for most of the students who do not have any background knowledge in these topics.

The experts were satisfied with the learning outcomes as described by UCM, CUT and FRI in terms of the knowledge, skills and competences described. As described in the SAR, the experts find that the proposed modules have been developed by a group of innovation scientists and practitioners to help improve sustainability performance through innovation and entrepreneurship.

However, the experts express concern as to how the HMKW module aligns to that goal or fits into the overall structure of the project. Based on HMKW's lecture overview under course content Lecture 1 mentions the IMPACT project and the 'need for rapid ethnography for elicitation of values'. This is presented as a part of the 3 hour first lecture. Further a case study concerning 'key findings on building values-based innovation cultures for sustainable business impact' is mentioned in Lecture 4 of 2 hours. In comparison to the estimated total workload of 75 hours for the course the experts have the impression that this is hardly sufficient for addressing the field of sustainability, considering the overall focus of the IMPACT project. In the SAR, HMKW mentions to address 'cultural barriers to sustainability-oriented innovation'. Unfortunately this is not incorporated, neither in the learning outcomes, nor in the lecture content. This connection needs to be more clearly addressed in the learning outcomes of the module as well as in the course content. If it is meant to provide a specialization as a part of this overall project, the course needs to address in-depth issues that are specific to sustainability such as the challenges and empirical generation of knowledge and best practices about sustainability oriented innovation, as envisaged in the SAR. Otherwise the students maybe misjudged or misled by the ambiguity between a generic content and a specialization. By what has been understood or evident till now, the experts opine that this is a major issue that needs to be addressed.

The peer group gets an impression that the providers generally emphasize on learning by doing, sensitising students about the sustainability issues and industry demands. It was also realised during the discussion with students that there is a significant demand of such skills in the industrial sector, which makes these courses helpful in terms of both employability

and future contributions. The modules could render considerable added value to the competence portfolio of the students, irrespective of whether they are a mandatory part of a specialised program or an elective part in one or more degree programs.

During the discussion rounds with the industry representatives, the experts concluded that not only the students but also the industry experts believe that their synergy can bring effective results. However, the involvement of the industry partners and more so the general industry experts available were found to be very limited. Inputs from the few representatives present were indicative of the huge potential of industry-academia collaboration in the field of sustainability models. Moreover, the experts were informed by the industrial professionals that they are very much interested in developing their own innovative business models.

Therefore, the scope of students being given the opportunity of internships and projects was indirectly proposed as a win-win model. The experts, therefore, strongly feel that the module providers in the near future, within or outside this project, can exploit this opportunity not only to involve their students but also to enrich and improve their modules.

The experts, while acknowledging that most of the modules are closely linked to the development of knowledge and a culture of sustainability, also suggest that more involvement of industry experts as guest lecturers or visiting experts for close interaction with the students and providers will prove to be more result-oriented. The maximum exposure of students in the implementation activities and the entrepreneurial setup would prove to be productive.

In this regard the experts would like to again re-emphasize the need of the coordinated offering of the four modules. It has been found that while one of the modules concentrate on communication, the other on anthropological and ethnographical research, the third on social impact and the fourth on innovation. One of these modules can be of help to the student of another module, in the development of a complementary knowledge and competence structure. As an extension of this argument, specific examples from the four modules can be cited. Communication strategies are very much necessary if an engineer turned entrepreneur wants to promote his innovative model. Therefore, learning materials from the different courses can be provided for use in other courses in a modular fashion. Overall, a close collaboration between the modules is a recommendation of the experts.

The certification procedure entails the certification of the specific modules under consideration and therefore they need to be assessed as independent units of study though of-

ferred as part of bachelors and masters programs. Therefore, the experts evaluate all aspects of the course in isolation to the existing framework of the overall programs or universities.

With respect to the individual modules, the experts repeatedly found that it was not clearly apparent from the learning outcomes as to what level of EQF (Level 7 or level 6 as the case may be) they correspond. Multiple LO points are very generic and the experts suggest that a more subject- specific formulation of the outcomes is needed. The experts also noted that there were inconsistencies in the SAR representation of the learning outcomes and those in the module descriptions.

Since the courses under review are not yet implemented, the experts wanted to know about the general impression of the students thought regarding the level of courses and whether they found them too easy or too difficult. The students had mixed opinions. Nevertheless, it was found to be at the correct level by the majority, considering both that these are Higher Education modules and the fact that many students need to balance work life and studies. The content level was also considered very much up to the standards i.e. EQF level 7 and in some cases level 6 and therefore the experts were satisfied with this point. Additionally, the names of the modules are also judged to be in keeping to the course content planned.

2.3 / 2.4 Structure and workload

Evidence:

- Relevant chapter of the SAR
- Appendix_A5_Curriculum of module_Sustainable Innovation Practices.pdf
- Module descriptions: Appendix_A1 (Complutense), Appendix_A2 (HMKW) , Appendix_A3 (FRI) and Appendix_A4 (CracowU)
- Appendix_B5_ School of Engineering: Student guide_Unifi.pdf
- Appendix B7_Description of The Master of Science in Mechanical Engineering Program for Sustainability at Unifi
- Appendix_B6_Regulations of study at CUT_2019.pdf
- Appendix_B10_RStPO-Master Regulation_EN_HMKW.pdf
- Appendix_B13_Translation of Academic regulations of examination_Unifi.pdf

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- Appendix_B14_Translation of Academic regulations of teaching methodology_Unifi.pdf
 - Appendix_B15_Student Guide1_Complutense
 - Appendix_B16_Tutorials_Complutense
 - Audit discussions

Preliminary assessment and analysis of the experts:

The experts found the detailing in the workload section to be adequate. The justification for 3 ECTS was evident from the workload distribution and the total of 75 hours of study and activities shown. However, the experts were not very clear regarding the disparity in the number of working hours shown in the structure and in the workloads section. Regarding this the providers explained that while in the structure of the course only the direct contact hours with the student is mentioned, the workload shows the actual number of hours of individual, group work and project-based study required for the entire module. The experts thereby suggest a consistent representation of the workload in all parts of the report and all the documents to be used for communication to the stakeholders.

Presentations, seminars and reports are evident as integral parts of these courses. The obvious question that the experts had was about the detailed parameters that govern them. According to the auditors, it is important that this is documented and regulated as these can significantly affect the workload of the students.

FRI has 25 hours dedicated to these parts of the curriculum and on the basis of the experience of the teaching staff, the hours are sufficient. The students are provided with pages and templates of what is expected of them. Presentations are usually around 15-20 slides and the reports also range between 10-15 pages. However, the staff agreed that with the use of artificial intelligence in teaching and learning, these benchmarks can change a lot. This was precisely the reason why the experts consider that at least a tentative projection of expectations is important for both students and faculty in terms of better planning and assessment.

At UCM the final project is aimed at making a closer connection of the theoretical knowledge to reality. So, as a part of this activity students are divided into groups. Each group chooses one company to focus upon and investigate a real challenge to sustainability. The group jointly works on it and at the end they have to make a presentation of 20 minutes and a report of usually 5000 words but it also varies from project to project. This is not provided to students in written form anywhere generally but communicated to them during the initial lectures, when they are told about the assessments and grading system.

It was explained that this was done so because the details may vary according to the dynamics of the classes and sometimes varying timelines.

CUT's project is based on introduction to business models and comparison of regular business models with sustainable business models. The students are then introduced to the calculation models which helps them with calculations regarding sales forecast, cost forecast, break even analysis and cash flow. Based on this knowledge the students will draw conclusions and they will then make an estimate and assess the sustainability impact on the business. The final report can be anywhere between 5-10 pages with attachments as excel files. All this will be done in groups of three.

However, the experts opine, both in case of UCM and CUT that some indicative structure can still be given especially because the students might need to be pre-informed as this is being offered as an elective.

HMKW's project seems to be a major aspect of the course, so it was opined as important to specify how the workload in that respect is arrived at. As elaborated, the case study includes inputs from industrial partners and involves extensive research, finding different insights. When the results are collected, students prepare the analysis in groups of three, focussing on any one insight. Based on their presentation, they collect feedback from fellow students and then they write their reports of 10-12 pages stating their experiences in the process and their conclusions. The students mention in the report which student contributed to which part so that assessing the individual grades is also manageable.

Generally the experts suggest that the structure and module descriptions should categorically mention whether the courses are lecture-based, project-based and are there elements of e-learning, hybrid learning etc. The mentioning of the type of course was evidently crucial for the students, who clearly seemed to prefer activity based and technology aided learning. Another aspect that might affect the structure and workload of the course, and that is the inclusion of industry partners as regular contributors, industry visits, industrial workshops or guest lectures from academic or corporate personnel. The experts would recommend not only the inclusion of such details but would also like to point out that the students unanimously expressed the preference for increased involvement and inputs from the industrial sectors. They however do understand that since most of the courses are still in a planning stage, these plans will be only a projection and tentative. Nevertheless, a plan

should be in place even for workload and structural calculations and future implementation.

2.5 Admission requirements

Evidences:

- Relevant chapter of the SAR
- Module descriptions: Appendix_A1 (Complutense), Appendix_A2 (HMKW) , Appendix_A3 (FRI) and Appendix_A4 (CracowU)
- Relevant appendices provided in the SAR
- Audit discussions

Preliminary assessment and analysis of the experts:

The admission requirements are of the general courses at the Masters and Bachelor's level, as the case may be. This may be generally true for courses within a program but the experts are having to make an exception here and ask for more and specific details owing to several reasons. Firstly, both the experts and students were of the opinion that these are very state-of-the-art specialised courses which might need specific entry level competences. Secondly, if these courses are offered at a common platform for the benefit of the partner institutions or the larger higher educational community, the entry level expectations or requirements would prove to be vital. The experts anyways need to make sure that the individual modules are regulated by transparent rules with respect to the admission, retention, completion etc. As the modules have to be assessed separately as stand-alone learning units, even though it is well understood that they are part of regular Master or Bachelor programs, the experts also need to know the regulatory body that is responsible for deciding the intake specifications for the particular courses. The auditors are aware that appropriate regulations of the university as such or of entire degree programs are there. However, for the purpose of the assessment and certification of the module, evidence of those rules and regulations or links to the respective statutes and provisions along with a short clarification which ones are applicable for the modules will be required.

Moreover, it was not very clear to the experts as to how the courses at CUM and CUT will be catering to both EQF 6 and EQF 7 at the same time and if so, what will be the entry level requirements thereby.

2.6 Prospects of the labour market and practical orientation

Evidence:

- Respective chapter of the SAR
- Audit discussions

Preliminary assessment and analysis of the experts:

The experts totally relate and corroborate with the students' point of view in this regard. The students expressed in very clear terms that having company people, like managers from companies implementing the sustainability model is a great way to learn from day to day live examples of how these models actually work, what a sustainable company or structure means and how that combines with profit growth and performance growth.

The experts are particularly interested as to how the students of these courses are predicted to be absorbed by the labour market. There is a general requirement of professionals who are knowledgeable in the elements of sustainability. But the providers themselves candidly remarked that it is difficult to keep up to the rapid metamorphosis of the business and technology world. Sustainability is not well integrated in the general curriculum of degree programs and therefore there is no general understanding or acceptance of the issue in the society. Even within businesses and the industry there is a lack of awareness. There is a clear proposition that sustainability modules should be embedded in the general curriculum and the present modules are updated regularly.

Generally, it was also concluded that there is not enough attention towards sustainability in the HE sector. These ideas need to be communicated to not only students but also to industry stakeholders. Big companies have to report in future on sustainable developments according to the ESG. What has been produced in the IMPACT project can be very helpful in this regard.

The experts found a general agreement that theoretical and practical models need to be combined. Industry visits by students to see in person how sustainability models function in the industry is of vital importance. Companies can also benefit from inputs from students' fresh and innovative ideas. So, the experts would want to see the inclusion of this aspect more visibly in the curriculum.

There was a general suggestion that universities should collaborate with industries. But interestingly for the experts, due to the governmental regulations and future deliverables

by the industry, the industry also needs to work with the universities in terms of how to address these goals set by governmental and environmental targets.

The experts were happy that the module operators have already realised that. The industrial and company representatives also insist that courses should be more and more project based. More of field work with interview skills and even the skills for designing a start-up was found to be encouraging. It was also opined during the discussions that academic and company perspectives regarding sustainability are essentially not the same. So, students have to develop their own perspectives after being exposed to both. The industry is facing various challenges for which it needs graduates equipped with the latest knowledge to handle them. Therefore, the industry is equally dependent on the universities to provide them with the right personnel. If this point is taken into consideration, the experts conclude some room for improvement in the scope of the courses in the very near future.

Looking at the patterns and labour market priorities, it was again felt that the economic, chemical, engineering, communication, and anthropological/ethnographical researcher's point of view can all contribute to the overall need to nurture the culture of and raise the awareness about sustainability. More so because the sustainability agenda of 2030 already appears to be very difficult to attain.

Final assessment of the experts after the comment of the provider regarding criterion 2:

In the revised curriculum document (Appendix A5 modified) the HMKW course on 'Business anthropology' now includes learning outcomes like introduction to concepts of sustainability, organisational values and cultures as drivers or barriers for sustainability-oriented innovation (SOI), application of suitable methods for data collection and analysis, and interpretation and advanced know how on field research methods to generate insights for SOI and lectures focusing on SOI culture and practices. The revised course emphasizes that ethnographic methods are necessary to understand stakeholder values and analyse organisational challenges to establish a SOI culture. The HEI also clarifies that SOI is the application domain throughout the module. Now that HMKW has elaborated on the link to the main focus of the project, i.e. the aspect of 'sustainability' in the course that they offer, this additional information dispelled the experts' earlier concerns.

Regarding the aspect of extending the introductory knowledge on sustainable development, the HEIs explained that it will be adapted each time to the level of student's knowledge acquired before implementing the IMPACT modules. In this regard an example was also presented. For the field of eco-technologies for sustainable development at CUT, students in the semesters preceding the implementation of the proposed module will participate in at least two modules related to sustainable development policy.

The providers pointed out that Project IMPACT has produced two toolkits, one aimed at company staff and the other focused on students. All participating universities facilitate internships and projects and strive to ensure the direct involvement of industry partners in each iteration of the courses. The additional information on industry involvement showed that this aspect has received more systematic attention than could be inferred from the previous report. The experts suggest to keep up the industry involvement also in further iterations of the courses, as the topic of sustainability management is highly dynamic (see below, sec. F, recommendation 2).

Regarding the comment about implementing the subject at EQF level 6 or 7, CUT emphasised that as a subject implemented in the group of socio-humanities subjects in technical fields, it is adapted to EQF level 7. Only in the case of the field of eco-technologies for sustainable development, it is implemented at EQF level 6, due to the nature of the field and students' prior preparation in the field of sustainable development, it seems appropriate to implement this subject earlier. The HEI assures that its scope, especially concerning the design part, will be adapted to the EQF level and in other cases, e.g. CUM, the effects also will be analysed and verified depending on the needs of the student group. The experts also understand from these responses that the EQF levels have been sharpened and appreciate that.

The unified form and description of the workload and structure of the modules have been now included in the updated version of the Curriculum of the “Sustainable Innovation Practices” Modules. The experts also appreciate the group work elements have been included and now better understand how the workload is calculated.

All rules and policies regarding students and admission has been elaborated in detail in the revised and /or translated versions of the appendices along with supporting clarifications. Based on this the experts are generally satisfied with the evidence for the course admission and policies.

3. System, Policy and Forms of Examinations

Evidences:

- Relevant chapter of the SAR
- Module descriptions: Appendix_A1 (Complutense), Appendix_A2 (HMKW) , Appendix_A3 (FRI) and Appendix_A4 (CracowU)
- Relevant appendices provided in the SAR –
- Appendix_B5_ School of Engineering: Student guide_Unifi.pdf
- Appendix_B6_Rgulations of study at CUT_2019.pdf

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- Appendix_B9_Rules of the process to grade exams_ Complutense.pdf (Spanish)
 - Appendix_B10_RStPO-Master Regulation_EN_HMKW.pdf
 - Appendix_B11_General Information for Lecturers_HMKW.pdf
 - Appendix_B12_Master of Mechanical Engineering for Sustainability academic regulations_Unifi.pdf (Italian)
 - Appendix_B13_Translation of Academic regulations of examination_Unifi.pdf
 - Appendix_B15_Student Guide1_ Complutense (Spanish)
 - Appendix_B16_Tutorials_ Complutense(Spanish)
 - Appendix_B25_Support for students_CracowU (Polish)
 - Appendix_B31_School of Engineering Student Guide_Unifi.pdf (Italian)
 - Appendix_B34_Exams and Gradings_HMKW.pdf
 - Appendix_B35_Evaluation system_Unifi (Italian)
 - Audit discussions

Preliminary assessment and analysis of the experts:

The experts took note that the exam regulations are applicable to the program of study as such and not specific to the modules under review. When asked by the experts if the students are well informed about how the grading and calculations are done, they were told that students are informed through the initial PowerPoints and presentations. Students are also welcome to ask for clarifications and usually there is no ambiguity.

The exam regulations in case of UCM could not be wholly understood as the Appendix B9 was not translated. The weightage of the exams is however mentioned in the SAR. The HMKW and CUT exam rules and weightage of exams were well defined. The FRI main document Appendix B12 was in Italian, the translated supplement Appendix B13 was too short, and the weightage for the different elements of evaluation was not clear. The experts on examining the documents also did not find adequate details and rules regarding make-up exams. Documents clarifying the above will thus be necessary.

Considering the heavy insistence on project work or case studies as a group activity, the experts were particularly concerned about the policy to regulate the grades of individuals within a group. It was found that some parts of the results of these projects were commonly graded but in some reports the individual areas of contribution is marked. Generally the students were enthusiastic and happy about the group work.

Final assessment of the experts after the comment of the provider regarding criterion 3:

The HEIs provided detailed information on examination structure, evaluation procedures and grading both in their comments and translated appendices. The experts appreciate the

elaborate inputs on the topic of examinations. However, the experts still feel the topic of how group grades are managed could have been addressed in more detail.

(See below in Sec. F –Recommendation 1)

4. Teaching Methodology and Support

Evidences:

- Relevant chapter of the SAR
- Module descriptions: Appendix_A1 (Complutense), Appendix_A2 (HMKW) , Appendix_A3 (FRI) and Appendix_A4 (CracowU)
- Appendix_B14_Translation of Academic regulations of teaching methodology_Unifi.pdf
- Appendix_B16_Tutorials_ Complutense (Spanish)
- Audit discussions

Preliminary assessment and analysis of the experts:

It was a general idea promoted by all the experts that considering the implementation schedule of the courses and a long term viability, the introduction of AI into the teaching learning of these modules will be inevitable. The experts were specifically concerned regarding how AI can be introduced in the teaching and eventually in the curriculum. The module coordinators also unanimously agreed on the growing need for implementation of AI in higher educational context.

To this UCM proposed a change in the assignments and structuring them differently, so that they are more useful for the students. It was particularly pointed out that AI can be particularly useful for the case studies. But some concern was also voiced regarding the overuse of AI affecting the critical thinking skills of students. So along with the adaptation of the tasks to make it conducive to the use of AI, there is also a need to put more importance to independent recalling, retention and processing of information.

HMKW course is based much on first hand, on the field, empirical research. So, AI is only encouraged for data analysis and interpretation purposes but students have to be very careful about the feeding of correct data or empirical findings. The use of AI should in no way be used to substitute a student's in-person actual research and skills of making sense of it from his own educational background. Course designers need to decide how to use

this methodological change to leverage and not hinder the growth of the student and how to formulate rules and avoid plagiarism and other problems.

To the question of introducing AI into the testing and assessment of seminars and projects, FRI confirmed that introduction of ChatGPT has been made to help students complement their thoughts, ideas and critical thinking skills. However, it was clearly confessed that this being a very new area, right now the faculty is unprepared and unsure about the inclusion of this into the mainstream scientific studies and therefore also with respect to appraisal of scientific papers and the rules to be implemented thereby. The development of this aspect is in its preliminary stage. It is the opinion of the provider that the students also seem sceptical and a bit unprepared about the scope and freedom of using the latest technological devices for educational outputs. One thing that was evident in the ensuing discussions was that basic rules of authenticity of individual responses to educational assignments should be upheld and AI can be used only as a support mechanism. Improvement of original writing for editing purposes can be allowed.

CUT was of the opinion that this being a very new development the courses have not been prepared or designed to accommodate this. However, once it was noticed that the students preferred using this kind of technology, the university is planning to formulate an overarching course for developing the proper e-competence for this. Right now, the students are allowed to use this only for data collection purposes and not substituting their critical thinking skills in any way.

While the experts acknowledge the fact that the issue of ethics within the context of this changing paradigm of involving AI into didactics was a matter of concern for the academic community. They suggest that literature based on active research going on in this field, can be particularly helpful. The experts were of the opinion that these recent technological developments can also be used to mentor and improve even tutoring and didactical methods.

The experts asked the providers about the inclusion and involvement of the industry representatives in the teaching process. CUT answered that under their faculty-wise international cooperation networks they invite industry representatives and visiting professors from other universities. The provider elaborated that their engineering students insisted on a close collaboration with industry partners as a part of the regular didactics. Before any

course is accepted by a dean or rector there is a consultation with the students and therefore, such aspects have been taken care of. The faculty are free to invite a guest lecturer or industry person to the class to aid in the teaching process and make it more effective.

There were also questions regarding the number and composition of the faculty teaching these courses. In UCM, 3 ECTS courses are being handled by one professor and there is always a provision for guest lecturers. There is however, no provision for any assistant lecturer or teaching assistant.

In case of FRI also there is one professor responsible for a 3 ECTS program. But there are PhD students to help with very specific projects of students related to sustainability oriented innovation. Moreover, the presence of experts like corporates and start-up entrepreneurs and others with exact testimonials to help the students is common.

CUT explained the reason for having a comparatively higher number of faculty because the different units of the course belong to the different faculties of Chemistry and Environmental Sciences. Additionally the course at Cracow, is being offered to Bachelors' as well as Masters' students, so number of faculty required is more. They also include co-workers from Centre of Trust and Technology to aid in the teaching process.

HMKW also has primarily one faculty to teach the 3 ECTS module, but industry representatives are invited to supervise at the beginning, middle and end of the projects to give their valuable inputs. The student group is also very small varying from 10-20 students, which makes it usually very manageable. The experts further probed regarding the availability of professors for office hours or out of class help for students. This was indicated to be managed in a bifurcated manner. There are office staff for helping with the library or other logistical arrangements and professors to help with pedagogical or content related matters.

The experts were curious regarding the use of modern interactive tools and smart teaching methodologies and strategies. This was not specifically touched upon in the SAR.

HMKW mentioned the use of TrainX, which is a training management system for administrative purposes and resource management. It depends on the teaching staff to choose the tools. During online teaching Murals and Miro is used. Classroom lectures are more traditional face to face with methods like story telling etc.

UCM uses Moodle and tactical tools in the classroom. It was claimed that a lot of gamification tools and techniques have been implemented in the IMPACT project. The interaction

between the sustainability topics and gamification was portrayed as an interesting interface.

FRI seems to have developed this through a 'Fish Bowl' approach and also development of cards. FRI claimed to use Mural, Padlet and other digital tools in teaching. However, much needs to be completed in term of digitalization of the cards, Legasarus play or gamification as teaching tools.

The experts strongly suggest that such initiatives can be integrated into the regular teaching of these and other modules.

Final assessment of the experts after the comment of the provider regarding criterion 4:

The initial report and the interviews provided additional information about the specifics of the teaching methodology (e.g. the in-depth discussion on the role of AI).

Clearly stating in the curriculum and course details how students can use AI in the courses is recommended.

(See below, sec. F recommendation 3)

5. Personal, Material and Financial Resources

5.1 Staff

Evidences:

- Relevant chapter of the SAR
- Module descriptions: Appendix_A1 (Complutense), Appendix_A2 (HMKW) , Appendix_A3 (FRI) and Appendix_A4 (CracowU)
- Section C of appendices provided in the SAR
- Appendix_B32_Repository resources_CracowU (Polish)
- Audit discussions

Preliminary assessment and analysis of the experts:

The experts are very satisfied with the expertise and qualification of the staff teaching the courses and appreciate the composition of faculty chosen for all of these courses. All the professors not only have very good qualifications but are thorough with every detail of their

courses. The same level of satisfaction were equivocally voiced by the students as well. From the teacher capacity point of view the students seemed quite happy. For HMKW the teachers seemed to be punctual, responsive, qualified and contributing their time and energy for the students. In case of FRI, teachers from Business Management and Engineering are very capable, available and responsive. Teachers are happy to give suggestions and explain things again. CUT students also seemed to be very happy with the overall communication and not only professors but also deans and administrative staff are found to be very supportive.

With respect to guest faculty, students were satisfied and mentioned that guest lecturers with an international background helped them have diversity and more cultural and global input. This made the lecture sessions more interesting. The experts were thereby reasonably satisfied regarding the inclusion of external faculty into the teaching learning process.

Professors with experience from the industry are also found to be very helpful by students. However, according to the students, while the industry experts are very good at what they actually do, they might lack up-to-date teaching skills. The experts noted that industry experts often have broad practical experience but this might not always apply to their didactical competence portfolio. In spite of this, the experts were generally convinced about the inclusion and thereby utility of industry experienced experts with regard to these courses. Some guidance on best-practices in teaching such as a 'basic training' workshop or once-a-semester discussion of best teaching practices and an overview of best-practices could be useful here (see e.g. Harvard's teaching guide <https://tll.gse.harvard.edu/resources/teaching-guide> or Wharton's more playful introduction to teaching methods via The Teaching Game(<https://interactive.wharton.upenn.edu/individual-experiences/the-teaching-game/>)).

On the other hand, there was also an interesting suggestion that faculty from the universities could benefit from participating in the industry initiated workshops, especially those on the topic of sustainability.

5.2 Institutional setting, funding and equipment

Evidence:

- Relevant chapter in the SAR
- Relevant sections of appendices provided in the SAR

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- Audit discussions

Preliminary assessment and analysis of the experts:

The experts found the institutions adequately equipped to conduct the courses. They also found that the students are satisfied with the basic infrastructure like the lecture rooms, the libraries, laboratories and devices like smart boards.

There are certain suggestions from the experts in line with the feedback from students and the industry. This is mainly regarding the e-resources. Inclusion of more e-learning platforms and programs will be highly preferred. The students of HMKW are not particularly satisfied with TraiNex and do not find it very good in terms of user experience. But it seems that correction work is already underway. Students of CUT and FRI were also generally happy with the infrastructural facilities excepting that they would appreciate more individual study areas or quiet study places. The experts could not conclude on any feedback about the facilities at UCM as there were no student representatives.

Final assessment of the experts after the comment of the provider regarding criterion 5:

HMKW informed that a new, updated version of the campus management system TraiNex has just been released and there will be staff trainings in December 2023. Moreover HMKW also proposes to collect structured feedback from more students, regarding TraiNex.

FRI mentioned that the project product, i.e. the cards, are all in digital format and can be used as such. At the same time, the use of the mentioned digital tools is already widely present in the courses managed by the professor who is in charge of implementing the IMPACT Italian module.

Therefore with these clarifications, the experts find that the use of electronic learning environments is up to standards or has been improved. Generally, staffing for the relatively small courses is found to be highly adequate.

6. Quality Management: Processes, Instruments and Findings

Evidence:

- Relevant chapter in the SAR
- Related Appendices and links provided in the SAR
- Appendix_B35_ Evaluation system_Unifi (Italian)

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- Appendix_B36_Evaluation of teaching by students_Unifi (Italian)
 - Appendix_B37_IT evaluation system_CracowU (link not accessible)
 - Appendix_B38_Lecturers evaluation questionnaire_CracowU.pdf
 - Appendix_D1_Result of teaching evaluation at University of Florence (Italian)
 - Appendix_D2_Result of teaching evaluation at University of Florence School of Engineering
 - Appendix_D3_Result of teaching evaluation at University of Florence, Master in Mechanical Engineering for sustainability (Italian)
 - Audit discussions

Preliminary assessment and analysis of the experts:

After the initial appraisal of the SAR, the experts had questions regarding the quality control mechanism with respect to the specific modules.

UCM explained that mainly the quality of the course or content and the quality of teaching and the professors are given importance and the students are asked about it. This feedback from the students are collected both at the course level and institutional level and teachers are provided with the information collected. Also through open sources, the students appraise the quality of the university in general.

FRI uses the quality management system to collect student feedback on the contents, style of teaching, and organisation of the lectures, classroom equipment and overall satisfaction. Within the module, also there is scope of creating a specific evaluative system in the form of a survey to improve the effectiveness of knowledge transfer. In the end, a customer satisfaction procedure is also developed to collect ideas about improvement of the course and teaching and this is very much appreciated.

CUT produced a detailed evidence of the quality assurance system in terms of a questionnaire provided to the experts along with the SAR. At the institutional level, there is a Rector Representative for educational quality and at the faculty level, a Dean for the same. After every semester, the student has to fill up the feedback form for each professor. The questionnaire is then interpreted by the Dean and Rector.

In HMKW, the quality related feedback is not only at the end of the semester, but throughout the course. Especially feedback is collected about the three industry representatives or teachers with industrial experience, who contribute to the course during the beginning middle and end. Feedback is taken from both students and visiting faculty as to which industry partners should be invited and how the courses can be made more updated and

relevant. Beyond the course level, there is the accreditation quality control at the university level.

The experts are of the opinion that both course level and institutional level feedback is important and it should be transparently visible, preferably in English, for people to be informed about these EU level projects and their module outcomes.

The experts were happy to see students who were quite aware and conscious of the quality assurance mechanism. For HMKW, the students explained that after every semester feedback forms are filled up and remedial measure are also visible. The students are also free to voice their grievances to the heads of departments who are generally very receptive. HMKW has recently developed the system of student ambassadors or representatives which is expected to be more effective, as they can collect individual feedback and have frequent meetings with the heads of departments and professors.

CUT also has an anonymous feedback system at the end of the semester. After the feedback, it seems to be analysed and implemented with corrective measures. However, students are not directly given any feedback.

In case of FRI also there is an anonymous survey before the exams of each course and students are asked to evaluate the course and the materials provided. Then an overall rating for the course is calculated. Periodic surveys are also conducted for evaluating the structure of the course.

CUT has an advisory board and some industry partners have worked closely with this board on other projects. But not particularly involved during the IMPACT project. The workings of the industry representatives is usually to gather a group of companies with respect to any particular project, tell them about the project, take their feedback and provide inputs to the university regarding the module contents. So the experts found that industry representatives were being involved.

Industry representatives from Italy confirmed that they gave feedback for the toolkit of the project. The experts found that feedback has been taken to modify and improve the FRI courses and learning processes. The business sector participant also mentioned that the sustainability tool kit is particularly helpful because it would be used in companies for sustainability and innovation. This was not clear to the experts as to how this can be claimed at this point as the tool kit is not yet ready.

For UCM, there is an Advisory Board of the faculties of the university, which takes care of general management functions, yet it is not involved in the details of the course content. During formulating the courses, the industrial partners of the project have been consulted.

Overall the experts were satisfied with the Q A system in operation. However, they would appreciate more systematic feedback loops with the industry and also with people who are not directly involved in the project.

Final assessment of the experts after the comment of the provider regarding criterion 6:

The information provided in the initial report and the interviews was sufficiently indicative. Partner universities, in line with experts' suggestions, envisage to consider the possibility of supplementing the education quality system with more and complete feedback on the survey results. Therefore the experts find this point will be duly taken into consideration, once the courses are implemented.

7. Documentation & Transparency

Evidence:

- Relevant chapter in the SAR
- Module descriptions
- Project Website
- Appendices to the SAR

Preliminary assessment and analysis of the experts:

The experts are interested in viewing the 'Sustainable Innovations Practice/s Toolkit' that they were informed about in the SAR and the procedural meeting. This is of particular importance as this is the research based output of the entire project and the modules are supposed to be based on this research. The experts were informed that the cumulative result of all the research conducted during the project will be published in a book form which will be accessible as an open source. The book is supposed to include the tool kit and the best practices results as well. As understood by the experts, the tool kit will be finalised in a meeting at the beginning of December 2023 and made available by the end of the project in December and the book, in another six months by the middle of 2024. The partners also promised to provide other downloadable materials on the website, on topics like how to conduct an ethnographic research, how to tackle sustainability related challenges faced during research in organisations and how to create a sustainability oriented ecosystem among different industry partners and technical groups. This will be shared as licensed creative cards and made available on the IMPACT website and also on partner university

websites to make it more readily and publicly available. All these efforts are highly appreciated by the experts and will by themselves add value to the outcomes of the project and the impact of the modules.

Concerning the module descriptions, the date of last modification is missing in all of them, which is perhaps owing to the fact that most of these modules are not yet implemented. In this case, the experts would encourage that the date of formulation of the course content and module description is provided for record.

The experts also have the view that if the courses are to be used and shared in the future as a part of the sustainability of the project then, several aspects and questions will have to be considered and documented. Primarily, regarding dissemination of the courses, who will or which of the providers will have the overall responsibility and how will the coordination be done. Moreover, does each HEI have the qualified or trained personnel to teach the not so common topics? If personnel has to be shared then will they deliver it in person or online? How will the exams be conducted and grading done in that case? Will credit points from the other 3 HEIs be accepted and which documents will regulate that?

It was suggested during the meeting with the providers that the larger HEI community will at a later date have access to these modules and they would be able to customize them for their students. In this regard, the experts find it unclear as to how it will be done. Will the lectures be available for streaming or only a Moodle with slides will be provided? The experts would like to see some preliminary examples or a documented plan as to how this will look like. They however, sincerely appreciate that there is a concerted effort among the providers to translate theoretical knowledge into very useful and viable practical applications in actual work scenario. Moreover, it also encourages the incumbents to share their innovative ideas which are of real value considering the challenges appearing very regularly and rapidly.

Final assessment of the experts after the comment of the provider regarding criterion 7:

The HEIs totally agreed and subscribed to the idea that all subjects created by the four partners should be complementary and it is possible to introduce them to all involved universities. They emphasized that all teaching materials in the form of presentations, toolkits, publications and books will be available through the IMPACT project website on request. A new subpage („teaching materials”) will be created on the IMPACT website.

The providers also add that the teaching materials (in the form of presentations, toolkits, publications and book) are available to all universities for later use in case of introducing the course as a part of a study program. The HEIs do acknowledge the possibility of exchanging

teaching experiences between partner universities through international exchanges in a visiting professors scheme.

Publishing the courses OA is a first and necessary step to sharing the courses. Given the project-oriented nature of the education, the experts assume that the teachers' guide would be helpful. The "toolkit" as at this stage is however not enough for sharing courses given that the consortium suggests teacher mobility as a way to share experiences. (See below in Section F recommendation 5)

D Additional Documents

Before preparing their final assessment, the panel asks that the following information, wherever missing, be provided together with the comment of the provider on the previous chapters of this report:

1. Future plan to show how the modules will be shared so as to show the collaboration between the partners and ensure the international availability of the courses.
2. Link to the tool kit for future use of the outcomes of this project.
3. Appendix translations if not in English.
4. The statutes, contracts etc. of the course/module, containing all regulations relevant for admission, study process, graduation and retention period.
5. Documents in particular stating the legal relationship between learner and education provider i.e. the mutual rights and obligations of learners and education provider.

E Comment of the HEIs (11.12.2023)

In the comments of the HEIs all concerns and questions of the experts regarding learning outcomes, course level, teaching methodology and use of technology, industry involvement, admission criteria, documentation and the sustainability and future use of the project outputs were answered and future actions clarified. The detailed comments of the HEIs has been summarised in the relevant sections above.

In support of the answers and clarifications detailed appendices and links to access relevant information has been provided. Most significantly, the course descriptions along with changed learning outcomes and teaching focus has been elaborated in Appendix A5_Curriculum_Sustainable Innovation Practices_modified. For admission criteria the following were submitted by the institutions : Appendix G_HMKW_ZgS-Master admittance regulations (HMKW), <https://www.ing-mes.unifi.it/vp-146-enrollment.html> (FRI/Unifi) and Appendix B_CUT Recruitment resolution (CUT). Additional information was also provided by CUM in the link <https://bip.pk.edu.pl/>. Regarding elaborations related to exam rules the HEIs provided Appendix B.9 (Compultence) and Appendix B.13 (FRI). Also for the overall assessment of the long-term usability of the modules and project products, evidences were produced as the following links <https://www.impact-project.site/post/building-values-based-innovation-cultures-for-sustainable-business-impact> and <https://www.impact-project.site/blog/categories/articles>). All English translations of reports and appendices of the SAR asked by the experts were also provided.

F Summary: Expert recommendation (14.12.2023)

Taking into account the additional information and statement of the HEIs, the experts summarize their analysis and **final assessment** for the award of the ASIIN certificate as follows:

Module	ASIIN Certificate	Max. duration of certification
<i>'Sustainability-oriented Communication in Organizations'</i> - Complutense University Madrid UCM – 3 ECTS	Without requirements	30.09.2029
<i>'Business Anthropology'</i> - HMKW University of Applied Sciences for Media, Communication and Management Berlin HMKW – 3 ECTS	Without requirements	30.09.2029
<i>'Social impact assessment of a service-based remanufacturing business model'</i> - Foundation for Research and Innovation / University of Florence FRI/UniFi – 3 ECTS	Without requirements	30.09.2029
<i>'Sustainable innovation in engineering practice'</i> - Cracow University of Technology Cracow CUT – 3 ECTS	Without requirements	30.09.2029

Recommendations

For all HEIs

- E 1. (ASIIN 3) It is recommended to be more explicit about the grading process of individuals in case of a group work.
- E 2. (ASIIN 2.6) It is recommended to expand the cooperation with the industry from course delivery to course improvement.
- E 3. (ASIIN 2.1, 4) It is recommended to describe more clearly in the curriculum and course details how students can ethically and efficiently use AI in the courses.
- E 4. (ASIIN 1, 4) It is recommended to improve and update the teaching material and implement further ideas to scale up the courses.
- E 5. (ASIIN 1, 7) It is recommended to improve the “toolkit” at this stage so as to facilitate teacher mobility and ensure better sharing of experiences.

G Decision of the Certification Commission (19.12.2023)

Assessment and analysis for the award of the ASIIN Certificate:

The Certification Commission discusses the procedure during its meeting on 19 December 2023 and follows the recommendation of the expert panel without any changes.

The Certification Commission decides to award the ASIIN certificate as follows:

Module	ASIIN Certificate	Max. duration of certification
<i>'Sustainability-oriented Communication in Organizations'</i> - Complutense University Madrid UCM – 3 ECTS	Without requirements	30.09.2029
<i>'Business Anthropology'</i> - HMKW University of Applied Sciences for Media, Communication and Management Berlin HMKW – 3 ECTS	Without requirements	30.09.2029
<i>'Social impact assessment of a service-based remanufacturing business model'</i> - Foundation for Research and Innovation / University of Florence FRI/UniFi – 3 ECTS	Without requirements	30.09.2029
<i>'Sustainable innovation in engineering practice'</i> - Cracow University of Technology Cracow CUT – 3 ECTS	Without requirements	30.09.2029

Recommendations

For all HEIs

- E 1. (ASIIN 3) It is recommended to be more explicit about the grading process of individuals in case of a group work.
- E 2. (ASIIN 2.6) It is recommended to expand the cooperation with the industry from course delivery to course improvement.
- E 3. (ASIIN 2.1, 4) It is recommended to describe more clearly in the curriculum and course details how students can ethically and efficiently use AI in the courses.
- E 4. (ASIIN 1, 4) It is recommended to improve and update the teaching material and implement further ideas to scale up the courses.

E 5. (ASIIN 1, 7) It is recommended to improve the “toolkit” at this stage so as to facilitate teacher mobility and ensure better sharing of experiences.