

Assessment report

of the Erasmus Mundus Joint Master
Degree Programme on the INTEGRATED
STEAM EDUCATION (MASTED) offered by

UNIVERSIDAD DE BURGOS (UBU) (Spain)

UNIVERSIDAD DE JAÉN (UJA) (Spain)

INSTITUTO POLITÉCNICO DE LEIRIA (IPLeiria) (Portugal)

UNIVERSIDADE FEDERAL DA BAHIA (UFBA) (Brazil)

Review coordinated by ACSUCYL following the European Approach on
Quality Assurance for Joint Programmes

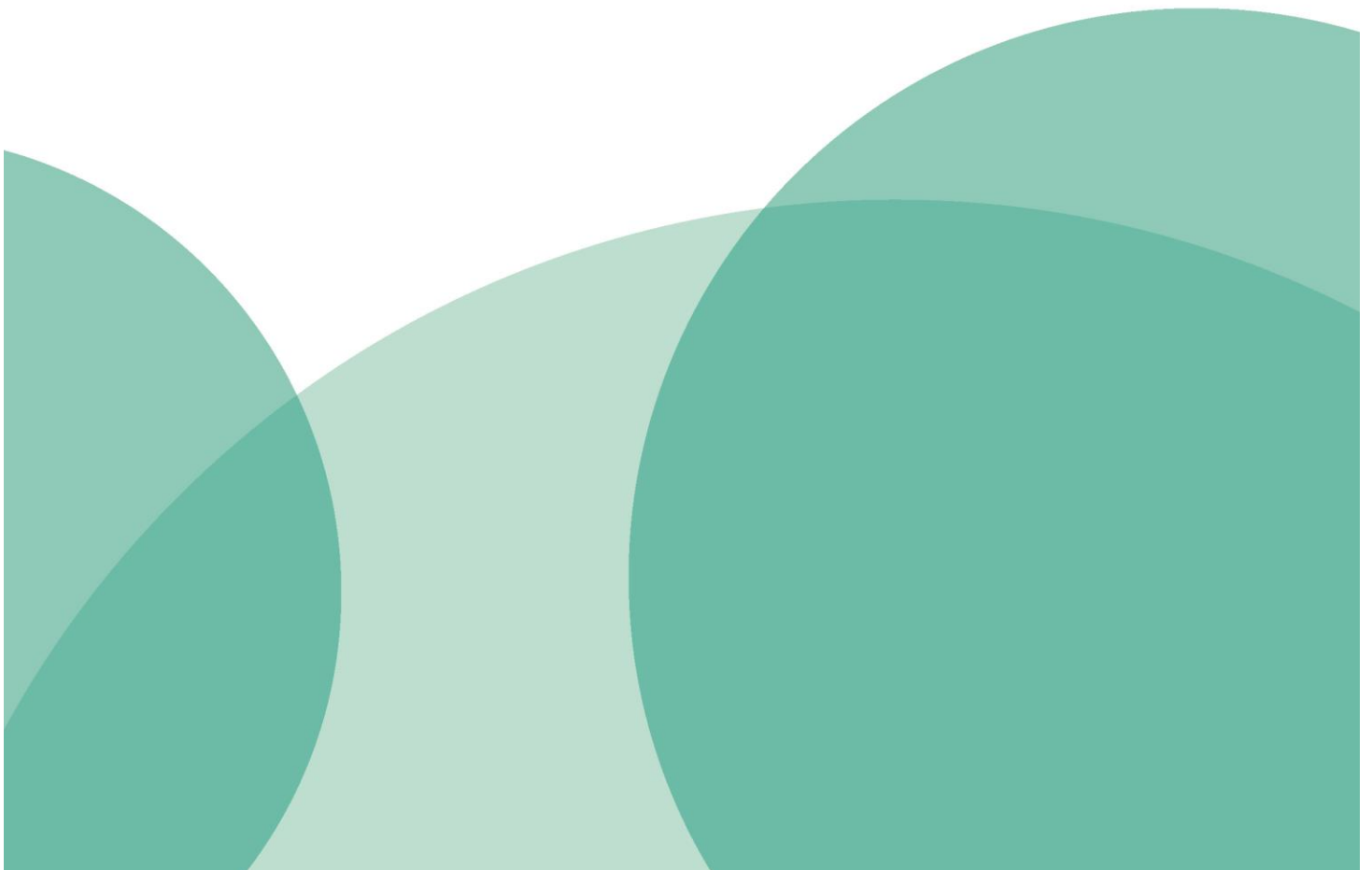


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Executive Summary

This report is issued by the panel appointed by ACSUCYL in the framework of the ex-ante accreditation request of the Erasmus Mundus Joint Master Degree Programme on the Integrated STEAM Education (MASTED) submitted by the University of Burgos on behalf of the MASTED consortium:

- UNIVERSIDAD DE BURGOS (UBU) (Spain)
- UNIVERSIDAD DE JAÉN (UJA) (Spain)
- INSTITUTO POLITÉCNICO DE LEIRIA (IPLeiria) (Portugal)
- UNIVERSIDADE FEDERAL DA BAHIA (UFBA) (Brazil)

The application concerns a joint master programme of 120 ECTS offered as a full-time two-year programme distributed in four semesters: three teaching semesters and a semester for research on a Final Master Project.

MASTED is an Erasmus Mundus Joint Master Degree supported by the European Commission Erasmus+ Programme that is offered to bachelors whatever their subject area of knowledge, who wish to increase their skills and abilities in the field of formal and/or non-formal education, through knowledge of new STEAM methodologies and tools.

The self-assessment report, the extensive programme materials before the site visit and on site and the conversations with highly motivated delegations have provided the panel with a comprehensive view of the programme. According to the panel, which based its assessment on the standards of the European Approach for Quality Assurance of Joint Programmes, the MASTED programme fulfils all standards. Consequently, the panel assesses the overall quality of the programme as positive.

1. The review process

On behalf of the Erasmus Mundus Joint Master Degree Programme on the Integrated STEAM Education (MASTED), the University of Burgos, which coordinates the programme, submitted its accreditation request following the European Approach for Quality Assurance of Joint Programmes on 15 July 2022.

The panel of reviewers was appointed on 28 September 2022 with the following composition:

- Dr. Cecilia Ruiz Esteban, University lecturer of Psychology of Education, University of Murcia (Spain);
- Irene Melchor, High School teacher and Head of the Teaching Innovation Department at IES Miguel Catalán – Zaragoza (Spain);
- Nuno Almeida, PhD student in Psychology at the “Universidade do Algarve” (Portugal);
- Dr. Eva Fernández de Labastida (secretary), Head of internationalisation and projects at Unibasq- Agency for Quality of the Basque University System (Spain).

Short CV’s of the panel members are provided in annex 12.1. The review process was coordinated by Sonia Martin Cerro on behalf of ACSUCYL. All panel members signed a statement of independence and confidentiality.

The panel based its assessment on the Standards for Quality Assurance of Joint Programmes in the European Higher Education Area (EHEA) approved by the EHEA ministers in May 2015.

The panel members studied the application documentation of the proposed programme and reported on their preliminary findings. At the preparatory meetings on 29 September and 11 October 2022, the panel discussed the preliminary findings, identified the most important issues for discussion on site and prepared the sessions with the delegations.

The online site visit took place on 17 October 2022 via Teams. The panel discussed with the management of the consortium and the

programme, as well as with lecturers as this is an ex-ante procedure and the programme is not running yet. The schedule of the visit is available in annex 12.2. Annex 12.3 lists the materials made available by the programme.

Right after the discussions, the panel formulated its considerations and preliminary conclusions per standard. These are based on the findings of the site visit and build on the assessment of the programme documents.

The secretary then drafted the report and circulated it to all panel members for review and feedback. The comments of the members were incorporated in a final version, which was validated by the chair on 8 November 2022, and by the ACSUCYL's Degree Assessment Commission on 10 November 2022. The draft report was sent to the programme coordinators for comments and the panel delivered a revised version of the report on 15 December 2022 after being validated by the chair. The ACSUCYL's Degree Assessment Commission revised and validated this final report on 20 December 2022.

2. Eligibility

2.1 STATUS

The institutions that offer a joint programme should be recognised as higher education institutions by the relevant authorities of their countries. Their respective national legal frameworks should enable them to participate in the joint programme and, if applicable, to award a joint degree. The institutions awarding the degree(s) should ensure that the degree(s) belong to the higher education degree systems of the countries in which they are based.

EVIDENCE

The Erasmus Mundus Joint Master Degree Programme on the Integrated STEAM Education (MASTED) is a new Erasmus Mundus Joint Master Degree of 120 ECTS offered to bachelors whatever their subject area of knowledge, who wish to increase their skills and abilities in the field of formal and/or non-formal education, through knowledge of new STEAM methodologies and tools. This new programme aims to start in 2023 and does not have any students enrolled yet.

The programme will be delivered jointly by three European universities (Universidad de Burgos (Spain), Universidad de Jaén (Spain), Instituto Politécnico de Leiria (Portugal)) and a university from Brazil (Universidade Federal da Bahia) as partners and awarding degree institutions, plus Hoegskolan Kristianstad (Sweden) and EUN Partnership AISBL (Belgium) as associated partners. All of them are recognised as higher education institutions by the authorities of their countries as stated in the SER and evidenced by the legal documents of creation of each entity provided as annexes.

All the Universities that are part of the master's degree can participate in a joint programme. Since it is an Erasmus Mundus, the Brazilian university can only participate if it offers a double degree.

Each student who successfully completes MASTED shall receive a Master's degree testified by:

- *A single diploma jointly awarded by all European MASTED's partner institutions.*
- *A separately awarded diploma (in accordance with national provisions for the award of a Master Diploma) by Universidade Federal da Bahia, if the student has conducted her/his first mobility and/or her/his thesis in this institution. UFBA diplomas will be conditioned to approval by the university instances and the Brazilian regulatory agency responsible for quality assurance in undergraduate and postgraduate institutions in Brazil, CAPES.*

ASSESSMENT

The panel considers the institutions that will offer the joint programme are recognised as higher education institutions by the relevant authorities of their countries. Their respective national legal frameworks enable them to participate in the joint programme. Each student who successfully completes the degree programme and who has fulfilled the requirements of the applicable national legislations will receive a joint Master's degree; and if the mobility is done in UFBA the student will get an additional separately awarded diploma by UFBA.

The panel concludes that the standard is fulfilled.

2.2 JOINT DESIGN AND DELIVERY

The joint programme should be offered jointly, involving all cooperating institutions in the design and delivery of the programme.

EVIDENCE

MASTED plans to take advantage of the knowledge and experience of each partner and associated partner to enrich the study programme. All partners are represented by different stakeholders (academic, technical and student) in the committees that manage the master's degree. The programme is managed through different joint governing bodies which have developed different joint procedures:

1. Steering Committee.
2. Committee on Master Contents Monitoring.

3. Committee on Ethics, Equity, and Inclusion.
4. Committee on Admission procedures and Mobility.
5. Committee on Evaluation and Quality Criteria of teaching and learning activities.
6. Committee on Accreditation.

All institutions will offer a semester and all of them participate in the summer course. The structure of the programme is described in the Joint course syllabi (Annex I of the Consortium agreement):

- First semester: All subjects are compulsory and online, except the Language courses of Spanish and Portuguese that are electives. These common subjects (up to 25 ECTS) are offered by UBU and IPLeiria as partner institutions with 11 ECTS each and, by Kristianstad University (HKR) as associated partner with 3 ECTS.
- Second semester: The subjects are offered by IPLeiria and UFBA with 30 ECTS each. Each student must select one mobility between the offered institutions, and at its end, the students will attend the mandatory summer school in the European Schoolnet to complete the pending 5 ECTS from the first semester, as it will be the most suitable date as explained during the interviews.
- Third semester: The subjects are offered by UBU and UJA with 30 ECTS each. Each student must select one mobility between the offered institutions.
- Fourth semester: It will be dedicated to the development of the Master's Thesis in one of the institutions. The topic of the final master project will arise from the internships and the institution chosen by the student, but the teaching guide has been developed jointly, so it will be common for all partners.

ASSESSMENT

The panel considers, taking into account the available documentation and the interviews with the academic staff and the Steering

Committee that the programme will be offered jointly, involving all cooperating institutions in the design and delivery of the programme.

The panel concludes that the standard is fulfilled.

2.3 COOPERATION AGREEMENT

The terms and conditions of the joint programme should be laid down in a cooperation agreement. The agreement should in particular cover the following issues:

- Denomination of the degree(s) awarded in the programme
- Coordination and responsibilities of the partners involved regarding management and financial organisation (including funding, sharing of costs and income etc.)
- Admission and selection procedures for students
- Mobility of students and teachers
- Examination regulations, student assessment methods, recognition of credits and degree awarding procedures in the consortium.

EVIDENCE

The Consortium agreement, as part of the documentation of the programme, includes:

- the denomination of the degrees awarded in the programme;
- the coordination mechanisms and the roles and responsibilities of the partners involved regarding management and financial organisation;
- the admission and selection procedures for students;
- the mobility of students and academic staff and
- the examination regulations, student assessment methods, recognition of credits and degree awarding procedures in the consortium.

covering the requirements of the European Approach and also the recommendations for EMJMD consortium agreement of Erasmus+ programme.

The partners have developed all the necessary tools to develop the programme and ensure its quality:

- A fully integrated curriculum adhering to the Standards for Quality Assurance of Joint Programmes in the European Higher Education Area (EHEA).
- A joint procedure of student admission requirements, application, selection, fee policy and registration.
- A joint guest lecturers' mobility procedure, including requirements and application process.
- A joint procedure of evaluation for subjects, internships and thesis, including jointly agreed competences to acquired and appeals or claims procedures.
- A joint offer of teaching/training activities, including a jointly agreed language policy and a joint process for recognition of study periods
- A joint QA mechanism (Internal Quality Handbook).
- A joint template of Diploma, European Supplement and Student Agreement.

ASSESSMENT

The panel considers that the Consortium agreement covers adequately the terms and conditions to provide a joint programme.

The panel concludes that the standard is fulfilled.

3. Learning Outcomes

3.1 LEVEL

The intended learning outcomes should align with the corresponding level in the Framework for Qualifications in the European Higher Education Area (FQ-EHEA), as well as the applicable national qualifications framework(s).

EVIDENCE

The SER states that the programme is designed as *“a 120 ECTS joint master degree programme at Level 7 of the European Qualifications Framework (EQF), Level 3 of the Spanish Qualifications Framework for Higher Education (MECU), Level 7 of the Portuguese National Qualifications Framework (QNQ), Postgraduate of higher education at the master's level of the regulatory framework of higher education in Brazil, Level 7 of the International Standard Classification of Education (ISCED) of 2011 formulated by UNESCO and a Second cycle of the European Higher Education Area (EHEA)”*.

It also indicates that *“the basic skills, specific to the subjects that MASTED include, languages, sustainability, digital and lifelong learning that students will acquire upon successful completion of the degree, are collected together with the learning outcomes in Annex 3. Study, credit recognition and assessment regulations of the Consortium Agreement”*. In this annex, there is a matrix of alignment of the generic learning outcomes of master level programme with the different frameworks (EQF, EHEA, MECU, QNQ and Postgraduate of higher education at the master's level of the regulatory framework of higher education in Brazil) and a list of 20 competences covered by the programme.

ASSESSMENT

The programme has defined:

- common competences for all students to establish a common profile of graduation;

- defined the number of competences and learning outcomes to ensure their achievement;
- related the competences with regulatory frameworks, subjects and entities through an alignment matrix.

The panel considers that the programme will provide to students a sufficient joint structure of learning outcomes assuring consistency among graduates. Nevertheless, the panel is concerned about the achievement of B2 level of the students who require Spanish or Portuguese for the development of their educational path. The Consortium offers language subjects in the curriculum according to the needs of the students, so they can achieve the expected language competences and partners offer elective courses to enhance previous skills. The panel considers that the consortium might need to monitor closely the achievement of the B2 level of Spanish/Portuguese during the delivery of the programme.

The panel concludes that the standard is fulfilled.

ENHANCEMENT OPTIONS

- Close monitoring of the achievement of B2 level of Spanish/Portuguese during the delivery of the programme.

3.2 DISCIPLINARY FIELDS

The intended learning outcomes should comprise knowledge, skills, and competencies in the respective disciplinary field(s).

EVIDENCE

The intended learning outcomes comprise knowledge, skills, and competencies in the STEAM areas (Science, Technology, Engineering, Art and Mathematics). The supporting evidences outline 20 competences.

During the site visit, the Steering Committee and the academic staff explained that they intended to apply a holistic and integrative approach to STEAM through all the subjects when the panel

questioned about the potential unbalance of some of the disciplines, mainly engineering and technology.

ASSESSMENT

The panel considers that the MASTED programme has provided comprehensive bibliography and theory about the integrated approach to STEAM explaining that they address subjects from interdisciplinary lenses; for example, biological or ecological subjects do not deal only with the biological contents but also with their relation with other natural sciences, social sciences and mathematics & technology. The consortium has added a subject focused on the specific field of engineering: 'Engineering and technology in STEAM education' in the first semester.

The panel concludes that the standard is fulfilled.

3.3 ACHIEVEMENT

The programme should be able to demonstrate that the intended learning outcomes are achieved.

EVIDENCE

The SER states that the student evaluation included in the programme has been designed to prove the achievement of the programme's competences and learning outcomes. The master programme has been designed to allow students to achieve all expected learning outcomes upon successful completion of the master's degree. The outlined competences and learning outcomes are aligned to each subject in the syllabi.

The student evaluation process to ensure the achievement of competences and learning outcomes is described in detail in Annex 3 of the Consortium agreement. As stated during the online site visit, the academic staff will ensure that a continuous assessment takes place throughout the programme, by using different methodologies and tools.

ASSESSMENT

The panel is not yet in the position to establish whether the intended learning outcomes of the programme will be effectively achieved upon graduation, as it is a new programme. Nevertheless, the panel is confident that the design of the programme is adequate to achieve the intended learning outcomes.

The panel concludes that the standard is fulfilled.

3.4 REGULATED PROFESSIONS

If relevant for the specific joint programme, the minimum agreed training conditions specified in the European Union Directive 2005/36/EC, or relevant common trainings frameworks established under the Directive, should be taken into account.

Not applicable.

4. Study Programme

4.1 CURRICULUM

The structure and content of the curriculum should be fit to enable the students to achieve the intended learning outcomes.

EVIDENCE

In the tables from the Joint Course Syllabi (Annex 1 of the Consortium agreement) the structure of the curriculum is shown; the content is further developed in the file for each subject also available in annex 1.

COMMON SUBJECTS BY UBU			
No.	Subject	ECTS	Graded
MASTED-01-01	Research in specific didactics: scientific and methodological foundations (1)	3+2	Yes
MASTED-01-02	Epistemology of Complexity and Epistemology of Education	3	Yes
MASTED-01-03	Engineering and technology in STEAM education	3	Yes
MASTED-01-04	Mathematics and science in teaching and learning	3	Yes
MASTED-01-05	*Language courses: Spanish B1 (2)	2	Yes
MASTED-01-06	*Language courses: Spanish B2 (2)	2	Yes
MASTED-01-07	*Language courses: Portuguese B1 (2)	2	Yes
MASTED-01-08	*Language courses: Portuguese B2 (2)	2	Yes
COMMON SUBJECTS BY IPLeiria			
MASTED-01-09	National and International Perspectives on Education (IPLeiria 2110107)	6	Yes
MASTED-01-10	Neurosciences in Education (IPLeiria 2166104)	5	Yes

Table 1. Subjects of the first semester.

*Students must choose one of them.

(1) NOTE: Those students who do not have previous training in educational disciplines will have to carry out 2 ECTS additional as part of this subject. These additional credits will be optional for the rest of students and free for those students who will have to do them compulsorily. For those who take these additional credits, their 'Transcript of results' will include this subject with 5 ECTS. The 2 ECTS course will be designed as a specific Small Private Online Course (SPOC). The assessment and resources will be as in the MASTED-01-01. The aim of this optional subject is to complete the training in didactics and learning methodologies provided by subject MASTED-01-01, acquiring the competences and intended learning outcomes which is partially already available to education graduates.

The specific contents of this optional subject will be developed annually by the UBU considering the profile of the enrolled students, to adjust to their needs, provide them with the fundamentals on psych pedagogy and learning methodologies that they require for acquiring the desired basic competences. (2) NOTE: Students who require Spanish or Portuguese for the development of their educational path, will have to reach a certified B2 level of the corresponding language in the first semester of the first year of MASTED fulfilling with the minimum requested in level 7 of the EQF. The Consortium offers language subjects in the curriculum according to the needs of the students, so that they can achieve the expected language competences. Partners also offer elective courses, so they can enhance previous skills.

All subjects of the first semester are compulsory and online, except the Language courses of Spanish and Portuguese that are electives.

The programme includes two compulsory mobility periods with a workload of at least one academic semester (30 ECTS); one optional mobility for developing the final project and two compulsory journeys, the summer school and the graduation ceremony.

SUBJECTS BY IPLeiria: Computer mediated instruction/learning			
No.	Subject	ECTS	Graded
MASTED-02-01	Pedagogical Models and Competences in Distance Education (IPLeiria 2166110)	5	Yes
MASTED-02-02	Entrepreneurship in Education (IPLeiria 2166103)	5	Yes
MASTED-02-03	Learning based in interactive and multimedia materials (IPLeiria 2108103)	7.5	Yes
MASTED-02-04	Learning based on collaborative activities (IPLeiria 2108104)	7.5	Yes
MASTED-02-05	Internships - Basic & secondary schools and IPL centres	5	Yes
SUBJECTS BY UFBA: History, philosophy and sociology of science and technology / Transdisciplinary approaches for ecology and conservation			
MASTED-02-06	Science, History, Culture and Society	6	Yes
MASTED-02-07	Introduction to Ecological Theory, Application and Values (PPGECOTAV000000001)	6	Yes
MASTED-02-08	Foundations of Biology (BIOA74)	6	Yes
MASTED-02-09	Debates on diversity in History of Science and its implications for Science Education	6	Yes
MASTED-02-010	Internships -- Science museum/local communities and schools	6	Yes
COMMON SUBJECTS BY EUN Partnership AISBL			
MASTED-02-11	Summer School	5	Yes

Table 2. Subjects of the second semester.

The two compulsory mobility periods must be developed in two countries (different from the country of residence of the student at the enrolment stage).

The Summer School will be organised to bring together MASTED student groups from the different universities to build a sense of community among them; to deepen in issues related to social justice, equity, and inclusion in STEAM education; to be in contact with the most innovative practices in STEAM education at the European level; and to discuss their proposals for the final Master project.

SUBJECTS BY UBU: STEAM for bilingual education / Integrated STEAM approaches for heritage education			
No.	Subject	ECTS	Graded
MASTED-03-01	Research and innovation in the teaching and learning of natural and social sciences (5708)	8	Yes
MASTED-03-02	Reading Promotion in English in Primary Education (5706)	5	Yes
MASTED-03-03	Research and Innovation in the Didactics of the Social sciences and the Didactics of language and literature (mother tongue and foreign) (8072)	5	Yes
MASTED-03-04	Cultural and natural heritage: management, dissemination and tourism (8176)	3	Yes
MASTED-03-05	Seminar on heritage education (8179)	3	Yes
MASTED-03-06	Internships -- Schools/Fablab/Heritage education	6	Yes
SUBJECTS BY UJA: STEAM for secondary education / Integrated STEAM approaches for sustainability			
MASTED-03-07	Environmental Education (10413001)	6	Yes
MASTED-03-08	Action competences and design of transformative educational interventions to promote environmental citizenship	4	Yes
MASTED-03-09	STEAM education for sustainability: methodological approaches and inspiring experiences	6	Yes
MASTED-03-10	Intercultural communication (10413001)	6	Yes
MASTED-03-11	International Seminars on STEM education	2	Yes
MASTED-03-12	Internships - Schools/Public & Private Institutions of Environmental education	6	Yes

Table 3. Subjects of the third semester.

There are two compulsory curricular internships periods in the Master's degree study plan. These internships will be developed

during the mandatory mobility periods in public and private collaborating entities of the host partners. The aim of the internship is that students apply and complement their academic training, favouring the acquisition of skills that prepare them for the exercise of professional activities, fostering their employability and entrepreneurial capacity.

The programme includes a mandatory Final Master Project (30 ECTS) in the fourth semester. With the supervision of a tutor and, if desired, co-tutors, all students enrolled will develop a Final Master Project in which they will demonstrate the advanced knowledge acquired during the Master. It is expected that the Master thesis would be connected to the activities developed during the internships and have a practical focus. Students can do the Final Master Project in an optional mobility, motivated by the student's specific research interests and related to the internships.

ASSESSMENT

The panel considers that the proposed structure and content of the curriculum seem fit to enable the students to achieve the intended learning outcomes. As stated during the interviews, the programme has been designed jointly to emphasise the strengths of each partner and with the incorporation of "external" agents that contribute to offering a coherent degree: associated partners, lecturers or invited scholars and entities that host interns.

The panel concludes that the standard is fulfilled.

4.2 CREDITS

The European Credit Transfer System (ECTS) should be applied properly and the distribution of credits should be clear.
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EVIDENCE

To facilitate student mobility and the comparison of students' study attainment across the globe, the programme has adopted the

European Credit Transfer and Accumulation System (ECTS). All semesters will be weighted according to the ECTS system and in conformity to Partners' national regulations.

The duration of the programme is two years (120 ECTS) and a complete academic course will be awarded with 60 ECTS credits.

As stated in the Consortium agreement, each partner formally recognises the subjects offered within the joint programme and the credits awarded. Partners accept differences in national regulations among them concerning awarding ECTS credits. All national marks obtained by enrolled students for courses completed at each partner will be converted to the ECTS scale according to the grade conversion table included in Annex 3. Study, credit recognition and assessment regulations of the Consortium agreement.

ASSESSMENT

All semesters will be weighted according to the ECTS system and in conformity to Partners' national regulations. The duration of the programme is two years (120 ECTS) and a complete academic course will be awarded with 60 ECTS credits, distributed in two semesters.

The panel considers that the European Credit Transfer System (ECTS) is applied properly and the distribution of credits is clear.

The panel concludes that the standard is fulfilled.

4.3 WORKLOAD

A joint bachelor programme will typically amount to a total student workload of 180-240 ECTS-credits; a joint master programme will typically amount to 90-120 ECTS-credits and should not be less than 60 ECTS-credits at second cycle level (credit ranges according to the FQ-EHEA); for joint doctorates there is no credit range specified. The workload and the average time to complete the programme should be monitored.

EVIDENCE

The duration of the Degree Programme is two years (120 ECTS) and a complete academic course will be awarded with 60 ECTS credits, distributed in two semesters.

According to the European Credit Transfer and Accumulation System (ECTS), the workload of one ECTS credit corresponds to 25 to 30 hours of work. The workload of the semesters is balanced as follows:

- First year - Semester 1: 25 ECTS (online)- 6 common subjects (language electives).
- First year - Semester 2: Mobility 30 ECTS - 5 subjects + summer School – election of one mobility between IPLeiria and UFBA, and mandatory summer school in the European Schoolnet to complete other 5 ECTS.
- Second year - Semester 1: Mobility 30 ECTS Election of one mobility in UBU or UJA. (6 subjects).
- Second year - Semester 2: Final master project - 30 ECTS Selection of one university between the offered institutions to develop the Final master project.

Two committees work to ensure quality and a good implementation of the programme: Committee on Master Contents Monitoring, and the Committee on Evaluation and Quality Criteria of teaching and learning activities. These committees ensure the quality of the programme and a good teaching coordination. There will be a student representative in each of them.

ASSESSMENT

This joint master has 120 credits teaching in two years. The last semester is dedicated to the master thesis.

The panel considers that the workload is evenly distributed on the 120 ECTS of the new master programme. The workload and the average time to complete the programme will be monitored through

students' satisfaction surveys as part of the internal quality assurance system.

The panel concludes that the standard is fulfilled.

5. Admission and Recognition

5.1. ADMISSION

The admission requirements and selection procedures should be appropriate in light of the programme's level and discipline.

EVIDENCE

The Admission, selection and recognition procedure (Annex 2 of the Consortium agreement) includes the academic, administrative and language requirements that candidates must meet, the application process to take part in the programme and the scholarships, as well as the selection process.

The joint criteria for selection are summarized in the following table:

CRITERIA	SCALE
ACADEMIC ACHIEVEMENT AND POTENTIAL Adequacy of the academic background, grades and distinctions, participation in research projects, scientific conferences, publications, languages proficiency,...	1-40
OVERALL QUALITY OF THE CV AND ACADEMIC AND/OR OTHER EXPERIENCE Other academic competences, professional and/or volunteering experiences in areas related with MASTED, international experiences,...	1-30
QUALITY OF COVER LETTER Motivation, adequacy of the professional project,...	1-20
RECOMMENDATION LETTERS	1-10

Table 4. Joint selection criteria (Source: Annex 2. Admission, selection and recognition procedure).

Under each criteria, there is a clear description of the different aspects, which will be considered, and the potential points, which can be achieved.

ASSESSMENT

The admission profile is very diverse being offered to bachelors whatever their subject area of knowledge. To avoid difficulties

achieving the same graduation profile the programme has included an extension of 2 additional ECTS in the compulsory subject "Research in specific didactics: scientific and methodological foundations" (1st semester) for those students who do not have previous training related to Education (as a Small Private Online Course).

The panel considers that the joint admission requirements and selection procedures are appropriate considering the programme's level and discipline.

The panel concludes that the standard is fulfilled.

5.2. RECOGNITION

Recognition of qualifications and of periods of studies (including recognition of prior learning) should be applied in line with the Lisbon Recognition Convention and subsidiary documents.

EVIDENCE

Annex 3. Study, credit recognition and assessment regulations of the Consortium agreement establishes the conditions for Credit recognition for the Master. Each partner recognises the modules – credits offered within the joint programme. Each student who successfully completes the programme will be awarded a single diploma jointly awarded by all partner institutions, and a separately awarded diploma by Universidade Federal da Bahia, if the student has conducted her/his first mobility and/or her/his thesis in this institution.

In addition, this document establishes also the conditions for credit recognition/transfer from some other periods of study: *“Credits corresponding to achieved subjects studied in higher educational and official studies, in Spanish or foreign universities, whether or not they have been completed with awarding diploma, may be recognised by the Steering Committee if competences and learning outcomes*

achieve by the student on that subjects are similar to those of MASTED."

ASSESSMENT

The panel considers that the Consortium applies fair recognition procedures to facilitate recognition of the modules and credits awarded in the partner institutions and to facilitate access to the programme.

The panel concludes that the standard is fulfilled.

6. Learning, Teaching and Assessment

6.1 LEARNING AND TEACHING

The programme should be designed to correspond with the intended learning outcomes, and the learning and teaching approaches applied should be adequate to achieve those. The diversity of students and their needs should be respected and attended to, especially in view of potential different cultural backgrounds of the students.

EVIDENCE

The available documents describe the methodologies and activities designed to support the acquisition of competences and learning outcomes, using a varied array of methodologies. Each subject has a teaching guide that includes the most relevant information: Name of the subject, registration code, language / Semester, type of subject, number of ECTS, workload and tutoring hours / Content / Competencies and learning outcomes (knowledge, skills and attitudes/values)/ Teaching and learning methodologies / Evaluation criteria/ Previous requirements/ Responsible Department/ Lecturers/ Learning resources.

The programme includes varied teaching methods depending on the type of course: Lecture, Project based learning, seminars, directed discussions, research (Master thesis and internships), Demonstrating, Learning through guided activity and discovery, Inquiry-based learning, Active Learning/Learning by Doing, Action Research, Game-Based Learning/Gamification, Computational Learning, Context-Based Learning, Competency-Based Learning, Design Thinking and more (Annex 1 of the Consortium agreement).

Regarding the mode of delivery, the first semester will be delivered online; the second and third are planned to be delivered face-to-face (mobilities) and the last semester (Final Master Project) can be defined by the student in agreement with the project's director, although face-to-face mode is advisable. The student will propose the study pathway in the application process, and it will be fixed, after

the decision by the Committee on Admission procedures and Mobility, on the Student Agreement.

The Committee on Ethics, Equity, and Inclusion will ensure the inclusion of all students.

ASSESSMENT

During the interviews, it was addressed that the academic staff will have to deal with different teaching languages, different cultural backgrounds, and different undergraduate degrees while applying an integrative and holistic approach to the contents. Even so, the panel considers that programme is designed considering the alignment among intended learning outcomes, learning and teaching activities and assessment procedures to assure the achievement of the intended learning outcomes for all students.

The panel concludes that the standard is fulfilled.

6.2 ASSESSMENT OF STUDENTS

The examination regulations and the assessment of the achieved learning outcomes should correspond with the intended learning outcomes. They should be applied consistently among partner institutions.

EVIDENCE

Assessment practices are designed in alignment with the teaching methodologies and are flexible, in accordance with different practices in different education systems. The consortium will adopt a continuous assessment system for all the subjects. The evaluation criteria are described in Annex 3. Study, credit recognition and assessment regulations of the Consortium Agreement and the evaluation procedure of each subject is fully described in the Joint Course Syllabi (Annex 1 of the Consortium agreement), including the assessment methods for the subjects which will be delivered online in the first semester.

The academic staff will use a different set of formative and continuous assessment tools such as: Mentimeter, Kahoot, progress tools, etc.

which aim at informing students about their progress and assessing them, guiding the teaching and learning process.

Examinations and evaluations might include reports and homework and can be oral and/ or written, and will be organised at the end of each semester, although the assessment of some modules taught by invited scholars can be scheduled immediately after the end of the module. The assessment of each subject will be described by each lecturer, along with the objectives, methodology and competences at the beginning of the semester. The form of examination may be adapted to disabled students.

Regarding the evaluation of the internship periods, it will be based on areas:

- a) Activity carried out by the student in the internship institution, by communication between the university tutor and internship tutor, to review formal aspects, involvement, willingness and initiative;
- b) Internship report;
- c) Meetings in seminars and tutoring;
- d) Self-assessment.

ASSESSMENT

The panel considers the examination regulations and the assessment of the achievement of the learning outcomes correspond with the intended learning outcomes and there are rules to be applied consistently among partner institutions. The panel is not particularly concerned, but as the first semester will be fully online, it would be good to highlight further the way the programme will guarantee students' identity in online assessments.

The panel concludes that the standard is fulfilled.

ENHANCEMENT OPTIONS

- Complete description of the system to guarantee student's identity in online assessments.

7. Student Support

The student support services should contribute to the achievement of the intended learning outcomes. They should take into account specific challenges of mobile students.

EVIDENCE

The Consortium agreement ensures the commitment of all partners to a very broad support of students: overall assistance to students and scholars visiting their institution, advice on matters such as accommodation, and assistance in case of illness, accident, or any other difficulties, specific support to obtain the required documents and information about the national immigration policy and, if needed, the assistance of students' travel for compulsory mobility.

Each partner is encouraged to include any available language courses and health insurance schemes to further support students with potential needs in these areas.

The facilities at host institutions must be adapted for different types of disabilities. However, disabled students may request a financial contribution from the Consortium and will receive assistance according to these needs. Moreover, the Committee on Ethics, Equity, and Inclusion will ensure that inclusion is guaranteed to all students.

Regarding support in the teaching- learning process, it will be both online and face-to-face. The last semester can be defined by the student in agreement with the project's director, and each student will propose her/his own study pathway in the application process.

Online learning allows for personalisation of the educational process, adapting to the students' study rhythms, making the support of the tutors more flexible. The platform will offer basic and complementary classroom materials, self-assessment questionnaires and Individual and/or collaborative activities, which are fundamental aspect of the methodological approach of MASTED. It will also include Individual tutorials using web conference tools to answer questions, review concepts, review the student's learning pace, etc. and group tutorials for monitoring collaborative work projects.

The evaluation system also ensures inclusion of all students. It will be adapted to the specific needs of students with functional diversity, without this implying a reduction in the required academic level. The Consortium will ensure the accessibility of tools and formats, in particular, the web pages and electronic means of teaching will be accessible to people with disabilities. In the case of students with functional diversity or specific needs for educational support, any evaluation resource contemplated in the teaching guide must be adapted to their needs. The review of grades must be adapted as well, proceeding by the coordinator of each subject, under the supervision of the Committee on Ethics, Equity, and Inclusion, to the precise methodological adaptations and, where appropriate, to the establishment of specific reviews based on the needs of this student body.

ASSESSMENT

The panel considers that the proposed student support services will contribute to the achievement of the intended learning outcomes and that they consider specific challenges of mobile students.

The panel concludes the standard is fulfilled.

8. Resources

8.1 STAFF

The staff should be sufficient and adequate (qualifications, professional and international experience) to implement the study programme.

EVIDENCE

The documentation provided in Annex 3 shows the CVs of 25 professors. Each institution has a coordinator and lecturers and researchers in several different disciplines. The participation of permanent staff and doctorates will be promoted, with a target of at least 80%.

In addition, the Consortium shall select and invite high profile experts in fields of relevance to the programme to act as invited scholars or guest lecturers. Roles of invited scholars and guest lecturers, selection procedures, modes of collaboration and financial conditions are specified in the document Annex 4. Guest Lecturers and Invited Scholars of the Consortium Agreement.

ASSESSMENT

The panel has reviewed the provided CV's and met some of the academic staff during the online site visit. The panel considers that the staff proposed is sufficient and adequate, regarding its qualifications, professional and international experience, to implement the study programme.

The panel concludes that the standard is fulfilled.

8.2 FACILITIES

The facilities provided should be sufficient and adequate in view of the intended learning outcomes.

EVIDENCE

Together with the SER where the facilities in each partner institution are described, photographs and videos of the partner institutions were made available as additional evidences.

ASSESSMENT

The panel considers that the available facilities are sufficient and adequate taking into account the intended learning outcomes. As stated in the documentation, all facilities have to be already adapted for different types of disabilities to facilitate inclusion.

The panel concludes that the standard is fulfilled.

9. Transparency and Documentation

Relevant information about the programme like admission requirements and procedures, course catalogue, examination and assessment procedures etc. should be well documented and published by taking into account specific needs of mobile students.

EVIDENCE

All relevant information about the programme like admission requirements and procedures, course catalogue, examination and assessment procedures etc. will be available at the programme's website (available in English, Spanish and Portuguese). During the online site visit, the website draft was presented and it will have the following sections:

ABOUT MASTED

- *Partners & Associated (short description, location, MASTED's staff, student support)*
- *Programme*
 - *General details (ECTS, multilingualism, internships and mobilities, aims)*
 - *Structure*
 - *Curriculum (overall perspective and short description about each subject)*
 - *Degrees*
- *Joint activities*
 - *Welcome weekend*
 - *Summer School*
 - *Graduation ceremony*
- *Calendar*

BECOME A STUDENT

- *Call for applications (schedule, applicant login)*
- *Requirements (administrative, academic, languages)*
- *Selection & Admission (criteria, procedure, appeal, Student's Agreement template, insurance)*
- *Costs & scholarships*

BE A GUEST LECTURER

- *General conditions of engagement*
- *Application & Selection*

AFTER MASTED

- *Employability (learning outcomes, potential employers, research)*
- *Alumni (testimonials & stories, statistics, Erasmus Mundus Students and Alumni Association – EMA)*

QUALITY & EXCELLENCE (European Approach, reports & certifications, ethics, sustainability & transparency, accessibility)

EVENTS & NEWS (blog)

LIBRARY (links & documents)

CONTACT

ASSESSMENT

All relevant information about the programme (admission requirements, procedures, teaching guides, scholarships, internships, etc.) will be available at the MASTED website, as provided in written. The proposed sections will provide useful information in an organized manner.

The panel concludes the standard is fulfilled.

10. Quality Assurance

The cooperating institutions should apply joint internal quality assurance processes in accordance with part one of the ESG.

EVIDENCE

The MASTED's Consortium has developed its own joint internal quality system, which is laid down in the Internal Quality Handbook annexed as number 6 to the Consortium Agreement.

As stated in Section 6 of the Consortium Agreement, the Steering Committee is responsible for the overall quality and standard of the Degree Programme. It shall monitor the compliance of partners with the Agreement and it shall be responsible for ensuring that the Degree Programme is delivered to the highest academic standards.

The Committee on Accreditation and the Master Contents Monitoring evaluating and Evaluation and Quality Criteria of teaching and learning activities Committees assist the Steering Committee in its quality assurance tasks and responsibilities, including, but not limited to, the carrying out of evaluations and the collecting of feedback from both staff and students.

A quality assessment report will be developed for each master edition by the Coordinating Institution, based on the feedback of all stakeholders of the Degree Programme. The report shall include course evaluation, the results and the analysis of the evaluation questionnaires from student, staff, partners, cross-partner survey analysis, the submitted unresolved complaints and valuable suggestions from students and alumni.

ASSESSMENT

The partners have jointly design and plan to implement their own joint internal quality system. The Steering Committee is in charge of quality assurance and will monitor the compliance of partners with the Agreement. The Committee on Accreditation and the Master Contents Monitoring evaluating and Evaluation and Quality Criteria of teaching and learning activities Committees will assist the Steering

Committee in its Quality Assurance tasks, including, but not limited to, the carrying out of evaluations and the collecting of feedback from both staff and students. The panel considers positively the development of a joint internal quality system.

The panel concludes that the standard is fulfilled.

11. Summary and Recommendations or Enhancement options

11.1 ENHANCEMENT OPTIONS:

1. Close monitoring of the achievement of B2 level of Spanish/Portuguese during the delivery of the programme.
2. Complete description of the system to guarantee student's identity in online assessments.

11.2 RECOMMENDATION OF THE PANEL OF EXPERTS

The panel concludes that the standards are fulfilled. In the following table, an overview of the assessments is shown:

Standard	Assessment
ELIGIBILITY	Fulfilled
- <i>Status</i>	Fulfilled
- <i>Joint design and delivery</i>	Fulfilled
- <i>Cooperation agreement</i>	Fulfilled
LEARNING OUTCOMES	Fulfilled
- <i>Level</i>	Fulfilled
- <i>Disciplinary fields</i>	Fulfilled
- <i>Achievement</i>	Fulfilled
- <i>Regulated professions</i>	Not applicable
STUDY PROGRAMME	Fulfilled
- <i>Curriculum</i>	Fulfilled
- <i>Credits</i>	Fulfilled
- <i>Workload</i>	Fulfilled
ADMISSION AND RECOGNITION	Fulfilled
- <i>Admission</i>	Fulfilled
- <i>Recognition</i>	Fulfilled
LEARNING, TEACHING AND ASSESSMENT	Fulfilled
- <i>Learning and teaching</i>	Fulfilled
- <i>Assessment of students</i>	Fulfilled
STUDENT SUPPORT	Fulfilled
RESOURCES	Fulfilled
- <i>Staff</i>	Fulfilled
- <i>Facilities</i>	Fulfilled
TRANSPARENCY AND DOCUMENTATION	Fulfilled
QUALITY ASSURANCE	Fulfilled

12. ANNEXES

12.1 PANEL OF EXPERTS

Dr. Cecilia Ruiz Esteban (chair)

BA in Education (University Complutense of Madrid), MA of Science in Education (Bucknell University, USA) and PhD in Psychology (University of Murcia). University lecturer on Psychology of Education since 1989 at University of Murcia (Faculties of Psychology, Education and Social Work). Research activity on psychological factors of learning and social interaction, family educational styles and quality and teaching activity at university. Management positions at university like Head of the university teaching section of the Education Institute, Quality, Innovation and European convergence Vice dean and Secretary of the quality committee of the senate. Participated in the following assessment activities: Socrates programme (Comenius and Grundtvig actions), PNCU, ANECA institutional evaluation programme, Spanish quality assurance regional agencies (AQUIB) and UCUA. Since 2009, ANECA Secretary of several ex-ante Masters accreditation committees. International collaboration in EU funded projects like: E-TRAIN (training of international review experts), JOQAR (quality assurance and recognition of joint programmes), TEAM I and II (mutual recognition of accreditation decisions and information sharing regarding accredited programmes) and ALFA PUENTES (improvement of higher education systems in Latin America and enhancement of the relationships between Latin America and Europe).

Irene Melchor (professional)

Degree in Business Administration and Masters Degree in Education and Teaching and in Financing Management. She worked as International QA Technician for ACPUA, Aragon Agency for QA and Strategic Foresight in Higher Education in 2014-2017. She is currently a High School teacher and Head of the Teaching Innovation Department at IES Miguel Catalán (Zaragoza) and continues to

collaborate as QA expert. She is part of the ACPUA Subcommittee on Thematic Evaluations as well as the Education Committee of ACSUCYL, QA Agency for the University System in Castilla y León. She has participated as an international expert for IQAA, Independent Kazakh Agency for QA.

Nuno Almeida (student)

Degree in Psychology. Master in Social and Organizacional Psychology. PhD student in Psychology at the "Universidade do Algarve". Specialist Psychologist Work, Social and Organizational Psychology by the "Ordem dos Psicólogos Portugueses - OPP". CEO at "FAROTESTE - Avaliação Psicológica" – Faro, Algarve, Portugal. Invited Lecturer at the "Faculdade de Ciências Humanas e Sociais - FCHS – Universidade do Algarve". Classes Social Psychology (degree), Organizational Behavior (master) and Prevention Management (master).

Dr. Eva Fernández de Labastida (secretary)

Head of internationalisation and projects at Unibasq- Agency for Quality of the Basque University System. Doctor in Food Science and Technology from the UPV/EHU. Since 2009 she has been working at Unibasq, initially as an Evaluation Manager coordinating evaluation and accreditation procedures as well as quality system audits of the universities in the Basque University System, including the training of evaluators. She is currently in charge of Unibasq's international activities in different networks such as INQAAHE, ENQA and ECA, mainly in matters related to joint programmes, academic recognition, employability and internationalisation. Since June 2017 she has been coordinating the ECA working group on "Mutual Recognition and Joint Programmes" and since June 2018 has been a member of the ECA Board of Directors. She is a certified expert of the CeQuint certificate and has also coordinated international accreditations and the international evaluation of joint programmes in accordance with the European Approach for Quality Assurance of Joint Programmes. In addition she has collaborated with the Universitat Oberta de

Catalunya (UOC) at the Master programme on "Evaluation and Management of Quality of Higher Education".

12.2 SCHEDULE OF SITE VISIT

ONLINE SITE VISIT ERASMUS MUNDUS JOINT MASTER DEGREE PROGRAMME ON THE INTEGRATED STEAM EDUCATION (MASTED) 17th October 2022		
Time	Activity	Attendees
14:30 – 15:15	Meeting with Teaching Staff	<p>Universidad de Burgos PhD ESTHER SANZ DE LA CAL Full professor of the Didactics of Language and Literature Area</p> <p>PhD RADU BOGDAN TOMA Assistant professor of the Didactics of Experimental Sciences Area</p> <p>Universidad de Jaén PhD MARÍA GEMA PARRA ANGUIA Full professor of the Ecology Area Vice Dean Faculty of Sciences</p> <p>PhD ANTONIO QUESADA ARMENTEROS Full professor of the Didactics of Experimental Sciences Area</p> <p>Universidade Federal da Bahia PhD LETÍCIA DOS SANTOS PEREIRA Assistant professor at Chemistry Institute and Professor at the Graduate Program on History, Philosophy and Science Teaching</p> <p>PhD CLIMÉRIO PAULO DA SILVA NETO Full professor of Physics and History and Philosophy of Science at the Institute of Physics</p> <p>Instituto Politécnico de Leiria PhD FILIPE SANTOS Assistant professor on the areas of Educational Technology, Digital Literacy and Media Accessibility</p> <p>PhD ISABEL PEREIRA Full professor at Education and Social Science School (ESECS) Pro-president for Pedagogical Innovation and director for the Distance Learning Unit (2018-2022)</p>
15:15 - 15:30	Disconnection pause	

15:30 - 16:30	Meeting with Steering Committee	<p>Universidad de Burgos PhD ILEANA M. GRECA DUFRANC (MASTED's Project Coordinator) Vice-Rector for Internationalization and Cooperation. Professor of the area of Didactics of Experimental Sciences. Director of the Consolidated Research Unit in the area of Education</p> <p>AINOA BARRÓN CARRANCIO (MASTED's Dissemination & Communication manager) MASTED's Project Manager</p> <p>Universidad de Jaén PhD MARTA ROMERO ARIZA Professor in the area of Didactics of Experimental Sciences</p> <p>Universidade Federal da Bahia PhD CHARBEL NIÑO EL HANI Associate Professor at the Institute of Biology Coordinator for the Laboratory of Teaching, Philosophy and History of Biology</p> <p>Instituto Politécnico de Leiria PhD RITA ALEXANDRA DIAS CADIMA Vice-President for Academic Affairs and coordinator of the Mobility and International Cooperation Office. Member of the Management Board and Academic Council</p> <p>ANA LÚCIA DUARTE (MASTED's Quality & Ethics Manager) Technician for Assessment and Quality Office</p>

12.3 LIST OF REVIEWED EVIDENCE

ANNEXES

1. Consortium Agreement

- *Annex 1: Joint Course syllabi*
- *Annex 2: Application, selection and admission procedure*
- *Annex 3: Study, credit recognition and assessment regulations*
- *Annex 4: Guest lecturers and invited scholars*
- *Annex 5: Multi-annual budget for the MASTED implementation*
- *Annex 6: Internal Quality Handbook*
- *Annex 7: Student Agreement*
- *Annex 8: Diploma supplement*

2. Diploma

3. CVs

4. Legal documentation

5. Quality procedures

ADDITIONAL INFORMATION

- 1. Website draft structure*

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