AQU CATALUNYA

European Approach

External review report for *ex ante* accreditation

Programme	Bachelor's degree in Software Development and Testing
Institutions	Universitat Oberta de Catalunya (UOC, coordinator) Open University of the Netherlands (OUNL) Universidad Nacional de Educación a Distancia (UNED)
Date of the visit	9th April 2025

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GLOSSARY

BTSD	Bachelor's degree in Techniques for Software Application Development
ECTS	European Credit Transfer System
EHEA	European Higher Education Area
EQAR	European Quality Assurance Register for Higher Education
EQF	European Qualifications Framework
ESG	Standards and Guidelines for Quality Assurance in the EHEA
QF-EHEA	Qualifications Framework for the European Higher Education Area
HEI	Higher Education Institution
ILO	Intended Learning Outcomes
ISCED	International Standard Classification of Education
IQAS	Internal Quality Assurance System
KSC	Knowledge, Skills, Competences
OUNL	Open University of the Netherlands
SER	Self-Evaluation Report
UNED	Universidad Nacional de Educación a Distancia
UOC	Universitat Oberta de Catalunya

INTRODUCTION

The Joint Bachelor's Degree Programme in Software Development and Testing is a collaborative initiative between the Universitat Oberta de Catalunya (UOC), the Open Universiteit (OUNL), and the Universidad Nacional de Educación a Distancia (UNED). This fully online programme, taught entirely in English, offers a comprehensive curriculum totalling 180 ECTS credits. The programme features flexible study options, allowing students to choose between full-time (3 years) or part-time enrolment. The programme offers students the unique advantage of earning a degree recognized by three European universities through a fully online format.

The aim of the bachelor's degree is to equip students with the knowledge and skills required to create usable, efficient, and high-quality software in any field of application.

The Self-Evaluation Report (SER) describes the background of the joint programme. The joint programme is the successor of the bachelor's degree in Techniques for Software Application Development (BTSD), an official 180 ECTS Bachelor's degree offered by UOC since 2021, which is going to be extinguished by the joint degree. The joint programme is expected to commence in the 2025-2026 academic year.

This report is an ex-ante evaluation as at present, the programme has not been yet implemented. Therefore, the assessment is less evidence-based than an ex-post evaluation.

The panel based its assessment on the Standards for Quality Assurance of Joint Programmes in the European Higher Education Area (EHEA), issued in October 2014 and approved by the EHEA ministers in May 2015. This European Approach for Quality Assurance of Joint Programmes is intended to be applied to quality assurance of international joint programmes when some of the cooperating higher education institutions require external quality assurance at the programme level. This procedure enables the possibility that a single evaluation process can lead to accreditation in multiple countries.

The panel members reviewed the programme's application documentation and submitted their preliminary findings to the secretary prior to the site visit. The secretary compiled and processed these findings for the preparatory meeting on 4th April 2025. Both the preparatory meeting and the site visit were conducted online. During the preparatory meeting, the panel discussed their preliminary findings, identified key issues, and planned the sessions with the delegations.

The online visit took place on 9th April 2025. The visit included interviews with the main stakeholders in the design stage: governing board, teaching staff and industry representatives. The visit was effective, giving the panel valuable inputs to better

understand the programme proposal, and provided sufficient evidence for a **conditionally positive** assessment of the joint programme.

Basic information of the programme proposal reviewed

Full name: Bachelor's degree in Software Development and Testing
EQF level: Level 6 (First cycle, bachelor's degree)
Degrees awarded: Bachelor's degree
ECTS: 180 ECTS - 3 years
ISCED field(s) of study: 0613 – Software and applications development and analysis

Panel composition

Chair: Wim Van Petegem Engineering Technology Education Research, KU Leuven Faculty of Engineering Technology
Academic: Anna Sikora Computer Architecture and Operating System, Universitat Autònoma de Barcelona
Student: Nienke Wessel Computing Science: Specialisation Data Science, Radboud University
Professional: Esther Andrés Pérez Information Technology and Communication, Instituto Nacional de Técnica Aeroespacial "Esteban Terradas"
Secretary. Teresa Pitarch Jovani Methodology, AQU Catalunya
Observer: Noèlia Grifo Castillo Methodology, AQU Catalunya

Agenda

9th April 2025

Time	Activity
08:30-09:00	Preliminary meeting of the panel members
09:00-10:00	Meeting with Programme Coordinators and management team
10:00-10:15	Break
10:15-11:15	Meeting with Teaching Staff
11:15-11.30	Break
11:30-12.15	Meeting with employers (if it is possible, industry representatives, future employers)
12:15-13:15	Internal work
13:15-13:30	Preliminary conclusions

List of evidence reviewed

Cooperation of Agreement
Self-Evaluation Report
Annexes

ASSESSMENT CRITERIA

1. ELIGIBILITY

1.1. 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 bachelor's degree in Software Development and Testing (SDT) is divided into three academic years of 60 ECTS each (180 ECTS) coordinated by the Universitat Oberta de Catalunya (UOC, Spain) together with the Open University of the Netherlands (OUNL, The Netherlands), and the Universidad Nacional de Educación a Distancia (UNED, Spain) as consortium joint programme partners.

The Self-Evaluation Report (SER) describes the background of the joint programme. The joint programme is the successor of the bachelor's degree in Techniques for Software Application Development (BTSD), an official 180 ECTS Bachelor's degree offered by UOC since 2021, which will be extinguished with this joint programme.

This degree has been developed within the framework of the OpenEU (The Open European University), a collaborative network of European virtual-learning institutions launched on December 1st, 2024. The OpenEU consortium, coordinated by UOC, includes the participation of several universities, with OUNL and UNED among its key partners.

The institutions delivering the joint programme 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 (Annex A.1):

- The Universitat Oberta de Catalunya (UOC) was officially created by the Law of the Parliament of Catalonia 3/1995 of April 6th.
- The Open Universiteit (OUNL) is officially a state university under Dutch law that derives its legal personality from the 'Wet op het hoger onderwijs en wetenschappelijk onderzoek' [Higher Education and Research Act].

- The Universidad Nacional de Educación a Distancia (UNED) was officially established as a public higher education institution by the Decree 2310/1972, of 18th August.

The respective national frameworks enable the three institutions to participate in the joint programme. Legislation in Spain and the Netherlands allows universities not only to collaborate in a joint programme but also to award a joint degree.

The joint bachelor programme is led by the UOC. Two of the three universities involved in developing the bachelor's degree in Software Development and Testing serve as degree-awarding institutions (UOC and OUNL), while the third acts as a partner institution (UNED). Upon successful completion of the joint bachelor's program, students will be awarded a joint degree from all degree-awarding partners, in accordance with the provisions of their respective national legislation.

Name of the institution	Higher education institution	Degree awarding institution	Role in the consortium
Universitat Oberta de Catalunya (UOC)	yes	yes	coordinator
Open Universiteit (OUNL)	yes	yes	member
Universidad Nacional de Educación a Distancia (UNED)	yes	no	member

Source: SER, page 7

According to the Cooperation agreement (article 1.4), successful completion of the programme leads to awarding a Joint bachelor's degree in Software Development and Testing by the Parties that have contributed at least 25% of the entire programme including the final project.

Spain and the Netherlands are signatories of the European Approach for Quality Assurance of Joint Programmes. Following the accreditation of the joint programme by AQU Catalunya, the programme will be officially recognized as a legal degree in both countries.

Graduates will be awarded a joint diploma, and a joint diploma supplement issued by the coordinating institution, UOC (Annex A.1.12). These diplomas will be integrated into the respective national systems following the agreements made by the three institutions.

Assessment

The consortium has provided comprehensive evidence regarding the eligibility to carry out joint programmes.

The institutions offering the joint programme are recognised as higher education institutions by their respective national authorities allowing them to participate in and award joint degrees. Each student who successfully completes the joint master's programme will be awarded a joint diploma and a joint diploma supplement issued by UOC as coordinating institution.

According to the Cooperation agreement, successful completion of the programme leads to awarding the Joint bachelor's degree in Software Development and Testing by the Parties that have contributed at least 25% of the entire programme including the final project.

The panel concludes that **the standard is compliant**.

1.2. Joint design and delivery

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

Evidence

The Consortium – comprising the three HEIs (UOC, OUNL, and UNED) – has established the working mechanisms, governing bodies, and management tools in the Cooperation agreement (Annex A.1.2.). According to the Consortium's organizational structure, all partner institutions participate in the design and delivery of the programme, although their contributions differ in scope and content. The design of the proposal has been led by UOC, acting as the coordinating higher education institution, in close collaboration with UNED and OUNL—being all of them members of the Open EU alliance.

While the provided documentation lacked specific details regarding the precise contributions of each partner institution to the program's design, discussions during the online visit clarified the collaborative nature of its development. Specifically, building upon the previous bachelor's degree programme offered by UOC, OUNL contributed by introducing its expertise in software testing and UNED enhanced the curriculum by incorporating its expertise in the human factors' perspective.

According to the Consortium's organizational structure, the Cooperation agreement outlines four governing bodies responsible for managing the programme:

> *The Coordination Committee* oversees matters related to the Joint Bachelor's Degree that involve all parties.

> *The Joint Programme Committee* provides advice on the promotion and safeguarding the quality of the Program.

> *The Joint Examination Board* ensures the program coherence and accreditation, manages student progression and exemptions, sets examination standards, manages fraud cases, recommends degree conferral, and issues diplomas.

> *The Joint Examination Appeals Board* establishes procedural rules for handling student appeals.

All governing bodies include representatives from each of the three HEIs, ensuring the active involvement of all partners in programme development.

According to the Cooperation agreement, the programme comprises three academic years of 60 ECTS each (180 ECTS in total). Students have the option to study either full-time or part-time.

The three partners have experience in delivering ICT bachelor's degrees in online format.

Assessment

The panel considers that the programme is offered jointly, involving all cooperating institutions in its design and delivery.

The panel concludes that **the standard is compliant**.

1.3. 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 Cooperation agreement (Annex A.1.2) covers thoroughly the items listed in the standard including:

a) Denomination of the degree(s) awarded in the programme

Joint bachelor's degree Programme in Software Development and Testing

b) Coordination, responsibilities and governance

- Article second "*Governance of the programme. Governing bodies of the bachelor's degree in software development and testing and mechanisms for assuring inter-university coordination*": Lists all the bodies that conforms the organisational structure.
- Clause 4 "*Coordination Committee*": This body is in charge of the coordination and management of the programme (manages policy and curriculum and education regulations, ensures quality through accreditation and evaluations, determines degree issuance, and manages student admissions and appeals). The committee is also in charge of the economic management, addresses partner admissions and proposes agreement changes.

c) Programme contents, structure and students' mobility

- Structure of the programme: Appendix 1
- Student mobility: This aspect has not been adequately addressed in the Cooperation agreement.

  During the online meetings, the consortium highlighted opportunities for both students and teachers, in line with the Open EU Alliance's work packages. However, the framework has not yet been developed and is expected to be finalized by the end of the year.

d) Admission and selection procedures for students

Article fifth covers:

- Admission and registration (selection criteria and admission and registration procedures)
- Recognition of qualifications

e) Services for students, rights and obligations

The agreement does not explicitly mention specific services for students (e.g., counselling, career services). However, it does mention the management of academic records, enrolment, and the issuance of diplomas, which are administrative services provided to students.

- Rights and obligations:

  Clause 8.4 "*Joint Examination Board*": This section outlines the rights and obligations of students in relation to examinations, including the granting of exemptions, handling of fraud, and the requirements for study progression and programme completion.

  Clause 9 "*Joint Examination Appeals Board*": This section provides students with the right to appeal decisions made by examiners or the Joint Examination Board that directly affect them.

Clause 12 "*Procedure for amending and discontinuing programmes of studies*": This section guarantees students' rights to complete the programme and obtain the joint degree within a minimum period of three subsequent years, even in the event of programme discontinuation.

Clause 13 "*Entry into force and duration*": This section ensures that students' academic and economic rights are protected in the event of the agreement's termination.

f) Examination regulations, student assessment methods and degree awarding procedures within the consortium

- Examination regulations: The Consortium establishes common Education and Examination Regulations (EER) which must align within the framework of the Open EU Alliance EER.
- Degree awarding procedure: Upon successful completion of the programme students will be awarded the Joint bachelor's degree in Software Development and Testing. The degree will be issued by those partner institutions that have contributed at least 25% of the total programme workload, including the final project.

g) Financial organization: Article 8 of the Consortium agreement outlines the financial terms and conditions in the joint programme.

Assessment

The programme's terms and conditions are clearly defined in the Cooperation agreement, except those concerning staff and student mobility. In online programmes, mobility may take the form of virtual mobility, involving cross-border learning through online collaboration, virtual exchanges, and shared digital platforms; or blended mobility, which combines online learning with short-term physical stays, such as summer schools or intensive workshops, to foster interaction and cultural exchange. Academic staff mobility may include joint teaching or online guest lectures delivered by faculty from partner institutions.

The panel concludes that **the standard is compliant with conditions**.

Requirement

- The Cooperation agreement should be updated to explicitly address the staff and student mobility in the context of online programmes.

2. LEARNING OUTCOMES

2.1. 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 18 intended learning outcomes (ILO) of the bachelor programme Software Development and Testing are aligned with the core qualifications of bachelor graduates as defined in the European Qualifications Framework (EQF), Level 6. However, the ILO are not explicitly mapped against key reference frameworks such as the Dublin Descriptors, the national qualifications frameworks of the participating countries, or the EQF. This lack of direct comparison makes it more difficult to evaluate the academic level and to determine whether the programme meets the expected learning outcomes of a Level 6 qualification.

Although an alignment table is included in the appendix, it consists of a table with hyperlinks to websites of the frameworks of Spain, the Netherlands and EQF, therefore, this table does not demonstrate how the ILO relate to these frameworks in a structured or comparative way.

Moreover, the academic orientation of the programme is unclear. In the Dutch higher education system, bachelor's degrees at EQF Level 6 are classified into two distinct types: HBO (Hoger Beroepsonderwijs – Higher Professional Education, 240 ECTS) and WO (Wetenschappelijk Onderwijs – Academic/Research-Oriented Higher Education, 180 ECTS). As a recognized WO institution, the Open University of the Netherlands is expected to offer academically oriented programmes. However, the design and content of the current programme appear to reflect a professional (HBO) rather than an academic orientation (WO), which raises concerns about its alignment with the Dutch national framework and the institutional mandate.

Assessment

The ILOs are aligned with EQF Level 6 descriptors; however, there is not a comparative matrix with frameworks such as the Dublin descriptors, the national qualifications' framework of the participating countries or EQF which limits the assessment whether the ILOs fully meet Level 6 expectations. Consequently, a proper matrix aligning the ILOs with the relevant national and European qualification standards is missing and it should be part of the evidence for the assessment of the current programme.

The programme consists of 180 ECTS, which aligns with the typical duration of academically oriented (WO) bachelor's programmes in the Netherlands. However, the

content and the ILOs have more professional orientation, which is more characteristic of HBO (higher professional education) programmes, typically consisting of 240 ECTS. This raises concerns about the programme's alignment with the Dutch qualifications' framework. Although the consortium acknowledged this ambiguity during the online visit and asserted that the programme is designed to meet academic standards, the documentation does not provide sufficient evidence of the programme's academic orientation.

The panel concludes that **the standard is compliant with conditions**.

Requirement

- The consortium should clearly demonstrate how the programme meets the academic standards required for a WO degree, particularly in the context of the Dutch qualifications' framework. This should include a justification of the academic level of the intended learning outcomes, the inclusion of research-oriented components, and the coherence with national criteria for WO programmes.

Enhancement Area

- Provide a proper matrix aligning the ILOs with the relevant national and European qualifications' frameworks.

2.2. Disciplinary fields

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

Evidence

The programme's learning outcomes are presented in the SER as aiming to span the spectrum of knowledge, skills, and competences relevant to the field of "*Software and applications development and analysis*", a subfield within ICT. However, there is no reference to international frameworks in the respective disciplinary fields, such as ACM (cf Curricula Recommendations) or EQANIE (cf Euro-Inf-Framework-Standards-and-Accreditation-Criteria-V-2016-10-24.pdf).

In addition, it is not indicated whether the programme has incorporated input from the professional field or other relevant stakeholders in the design of the learning outcomes. During the online visit, representatives from the professional field mentioned they had participated in EU-funded projects and provided input on the programme's needs – particularly in areas such as testing and cloud computing. However, this involvement appears to have taken place in an informal manner.

Finally, intercultural competences – or similar aspects - have not been addressed, which would be expected in international degree programme.

Assessment

The programme's ILOs are presented with the intention of covering a broad range of knowledge, skills and competences relevant to the field of Software and Applications Development and Analysis. However, references to internationally recognised disciplinary frameworks, such as those developed by ACM or EQANIE, appear to be limited. To strengthen the programme's academic grounding and international comparability, it may be beneficial to refer to well-established frameworks such as the ACM or EQANIE in the formulation of learning outcomes.

The programme might consider involving industry representatives or other stakeholders in the development of its ILO. Additionally, including elements related to intercultural competence or similar aspects could further enhance the programme's relevance and responsiveness, particularly given its international orientation.

The panel considers that **the standard is compliant**.

Recommendations

- Consider referencing international frameworks to strengthen the programme's academic foundation and enhance its international comparability.
- Establish a formal mechanism for the stakeholder involvement in the development and periodic review of the ILO.
- Consider including elements related to the intercultural competence or similar dimensions, in the design of the ILO.

2.3. Achievement

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

Evidence

The knowledge, skills, and competences (KSC) are clearly articulated, and each subject in the curriculum (Section 3.1) is explicitly linked to relevant learning outcomes. Each subject includes both a subset of the overall programme-level intended learning outcomes (ILO), and a set of subject-specific learning outcomes tailored to its content. This structure allows for a clear mapping between the curriculum and the intended outcomes, making it evident that all ILOs can be achieved through successful completion

of the individual subjects. Furthermore, all defined KSC are comprehensively addressed across the curriculum.

Students are assessed continuously throughout the programme using a variety of teaching, learning, and assessment methodologies. To graduate successfully, students are required to meet the minimum achievement thresholds in all assessments.

Assessment

Based on the materials submitted to the panel and the discussions held during the online visit, the panel considers that the intended learning outcomes of the programme can be achieved as designed.

The panel concludes that **the standard is compliant**.

3. STUDY PROGRAMME

3.1. Curriculum

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

Evidence

The curriculum is structured over six semesters (three years) and follows a clear division into basic, compulsory, and optional courses, organised within nine subject areas. For each subject area, the documentation describes how it contributes to the achievement of the intended learning outcomes (ILO) and provides brief descriptions of the courses included. The curriculum assigns 30 ECTS credits per semester for full-time students and offers a well-balanced distribution of courses with adequate credit allocation. A final project is included, with sufficient time allocated to support the achievement of the ILO.

The structure of organising the curriculum by subjects and further dividing them into courses is clearly presented. The topics covered in the courses include the core areas relevant to the field of software and applications development and analysis. However, some topics such as security and embedded systems appear inconsistently across the documentation. For instance, they are not mentioned on certain pages (e.g., p. 23) but do appear on others (e.g., p. 25), leading to some confusion regarding their inclusion.

Information regarding learning activities, methodologies, and assessment methods is outlined in Annex A.2.1. This annex presents the assigned hours for each learning activity and the evaluation methods applied within each subject. The documentation shows a range of learning and assessment methodologies used throughout the programme.

The joint structure of the programme is not prominently emphasised in the documentation provided. While a table is provided showing which institution is responsible for teaching specific courses, it remains unclear how each partner contributes uniquely to the curriculum. There is no explicit explanation of how the joint delivery enhances learning opportunities in ways that would not be possible within a single institution. Additionally, the documentation does not detail how the curriculum integrates the distinct expertise, resources, or educational environments of the partner institutions. Although some of this information can be inferred from supporting materials, such as teacher CVs and the cooperation agreement, it is not clearly presented in the SER.

Assessment

The curriculum is well-structured and clearly presented, with a logical progression across six semesters and a comprehensive division into nine subject areas. The documentation demonstrates that each subject contributes to the achievement of the intended learning

outcomes (ILO), and that the curriculum includes a balanced distribution of courses, appropriate credit allocation, and sufficient time for the Final Project. Learning activities and assessment methods are described in a consistent and adequate manner.

However, there are some areas where clarity could be improved. Certain important topics—such as security and embedded systems—are inconsistently represented across different parts of the documentation, which may lead to ambiguity regarding their inclusion in the programme. Software testing is important for the degree, however, there is only one course that treats them (Software testing on 5th semester). As the degree contains software developing and testing, the curriculum doesn't sufficiently treat testing-related aspects, especially from the practical point of view.

The panel devoted some time during the online visit to discussing the jointness of the programme. Through these conversations, it became evident that the three partner institutions have established a collaborative relationship and each institution contributes with its area of expertise to the programme. This ongoing cooperation reflects a shared commitment to the joint delivery of the degree even though the written documentation was not sufficiently detailed on this topic.

The panel concludes that **this standard is compliant**.

Enhancement areas

- Review the curriculum (courses or at least the content of already included courses) to treat software testing aspects in more detail.
- It would be beneficial to reflect the 9 subject areas in the overview curriculum on page 14 to give more insight into the structure of the curriculum.

Recommendations

- Ensure consistent presentation of curricular content across all documentation. Key topics should be clearly identified and consistently referenced where relevant.

3.2. Credits

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

Evidence

The proposed degree follows the European Credit Transfer System (ECTS) and consists of 180 ECTS credits distributed over three years of full-time study. The curriculum is organized into six semesters, each comprising 30 ECTS credits. Typically, full-time students take five courses of 6 ECTS credits per semester, except in the final semester,

which may include three courses of 5 credits and a Final Project worth 12 credits. The credit distribution is clear and appropriate, with approximately 27% allocated to basic courses, 53% to compulsory courses, 13% to electives, and 7% to the Final Project. The application of the ECTS system is consistent, and the credit structure is clearly defined and suitable for both full-time and part-time study tracks.

Assessment

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 compliant**.

3.3. 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.

Evidence

The program consists of 180 ECTS credits, structured over three years for full-time study or six years for part-time study. The total student workload is well distributed, with 30 credits allocated per semester, supporting both full-time and part-time pathways. This credit structure is consistent with the requirements of a standard 180 ECTS degree, and the workload division appears appropriate and aligned with the course content.

Assessment

The panel considers that the workload is evenly distributed over the 180 ECTS of the bachelor's degree programme.

The panel concludes that **the standard is compliant**.

4. ADMISSION AND RECOGNITION

4.1. Admission

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

Evidence

The Cooperation agreement, specifically Clause Fifth, outlines that the Coordinating Committee—comprising representatives from UOC, OUNL and UNED—is responsible for defining the selection and admission criteria. This committee also determines the minimum and maximum number of students to be admitted.

Applications for the program are submitted exclusively to UOC. Upon receipt of the applications, UOC verifies whether the access requirements are met, such as the possession of appropriate prior qualifications. Once eligibility is confirmed, the Coordination Committee undertakes the final selection of candidates. This selection is based on the previously approved admission criteria and is subject to the availability of places in the program. Enrolment is also processed solely by UOC, which collects tuition fees and maintains academic records. Information about enrolled students is shared electronically with the partner institutions, OUNL and UNED, to support coordinated academic management.

The program applies the general entry requirements for bachelor's degrees as set out in Title 1 of UOC's academic regulations. In addition to these general requirements, applicants must demonstrate English language proficiency at a minimum of level B2. This language requirement is specific to the joint program and is uniformly applied to all candidates.

Furthermore, the program includes provisions for accessibility. Support measures are in place for students with accessibility needs, following the standard policy already implemented at UOC for its academic offerings.

Assessment

The admission requirements and selection procedures demonstrate a structured and collaborative approach that aligns with joint degree governance principles. The shared responsibility between institutions, particularly through the Coordination Committee, suggests an effort to ensure transparency and mutual accountability.

The inclusion of a standardized English proficiency requirement reflects an awareness of the linguistic demands of a cross-border online program.

The existing support measures for students with accessibility needs indicate a commendable commitment to inclusivity.

The panel concludes that **the standard is compliant.**

4.2. 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

The recognition of prior knowledge and credit transfer for the joint degree program is defined primarily according to the academic regulations of the UOC. This is described in the Cooperation Agreement under Clause Six, titled "*Management of Academic Records and Certificates*." According to this clause, the academic management of students is the responsibility of UOC, which also processes all academic records and certifications related to the program.

The UOC has established procedures for the recognition of prior learning in its other degree programs. These procedures are formally documented and form the basis for handling recognition within the joint degree program as well.

The specific recognition criteria provided include the following limits: a maximum of 45 ECTS credits may be recognized for vocational training, with the possibility of an additional 12 ECTS under specific conditions. For professional experience and non-official university degrees, a maximum of 24 ECTS may be recognized. Additionally, up to 168 ECTS may be recognized for students from the previous degree that is now discontinued (Bachelor's Degree in Techniques for Software Application Development).

Assessment

The programme applies a uniform, centralised, and standardised recognition policy across the consortium based on UOC's academic regulations. A structured framework is applied for the recognition of prior learning, including vocational training, professional experience, non-official degrees, and credits from discontinued programs.

All participating institutions operate in accordance with the principles of the Lisbon Recognition Convention, ensuring a reliable approach within the joint degree context.

The panel concludes that **the standard is compliant.**

5. LEARNING, TEACHING AND ASSESSMENT

5.1. 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 degree program is divided into three categories of courses: basic, mandatory, and optional.

The basic courses introduce fundamental concepts, such as information systems, programming, computers, and mathematics. These courses serve as the foundation for more complex subjects and skills that students will encounter later in their studies. Some examples of basic courses are "Fundamentals of Information Systems," "Fundamentals of Programming," and "Mathematical Foundations I & II."

Mandatory courses form the core of the degree program and cover essential topics that all students must complete. These include courses such as "Cloud Computing," "Database Design," "Operating Systems," "Software Architecture," and "Web Programming." These courses aim to equip students with the necessary technical knowledge to work in various areas of computing.

Optional courses provide students with the flexibility to explore specialized topics of interest. These courses allow students to delve into subjects like "Blockchain and Smart Contracts," "Security in Computer Networks," and "Embedded Systems." Additionally, the optional "Internship" course gives students the opportunity to gain real-world experience in the field of computing, although it is not a mandatory part of the program.

Because of the international character of the programme and the diverse international staff and students, the language of instruction, teaching, and examination is English. Therefore, the name of the programme is also in English.

The degree program incorporates various learning activities to ensure that students develop both theoretical knowledge and practical skills.

The programme presents a variety of teaching and learning methods designed to support the achievement of the intended learning outcomes (ILO). These include both traditional and innovative approaches, such as debate, information search, case studies, written exposition, oral presentations, programming exercises, and practical activities. Methodologies such as guided instruction, learning by doing, case-based learning, project- and problem-based learning, and collaborative learning are all incorporated to support student engagement and skills development. However, there is limited

information on how the proposed learning activities and methodologies will be implemented in a fully online environment.

The degree does not include mandatory internships, but students may opt to take a 12 ECTS internship. This provides students with the opportunity to gain practical, real-world experience, although participation in the internship is not compulsory for graduation. Details about this optional course are provided in Annex A.2.2.

The documentation provided does not include strategies or measures to address student diversity, including differences in cultural backgrounds.

Assessment

The SER indicates that the teaching and learning approaches are intended to align with the ILO. However, the documentation does not provide specific information on how these methods will be applied in a fully online environment and how the student diversity will be addressed.

Additionally, as previously noted in point one, the panel considers that the program should integrate virtual or blended mobility. According to the panel, this could serve as a valuable, inclusive, and sustainable enhancement to the programme which is highly valued by students.

The panel concludes that **the standard is compliant.**

Recommendations

- Provide detailed information on how teaching and learning methods will be adapted for online delivery, including student-teacher interactions and use of digital tools.
- Address how the programme will accommodate diverse cultural and educational backgrounds to ensure inclusivity.

5.2. 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

The programme incorporates a range of assessment methods, with a focus on continuous assessment. These methods include tests, practical activities, synthesis tests, final projects, and exams. The combination of these different assessment types is deemed appropriate for the programme's objectives. In addition to the pedagogical

components, the programme also addresses technical aspects of the assessment process, such as student authentication and academic integrity.

To ensure academic integrity, UOC employs identity verification measures such as the use of ID documents, cameras, microphones, or other technologies during assessment activities. Tools and strategies are also used to detect and prevent plagiarism. Article 113 of UOC's academic regulations outlines behaviours considered as irregular conduct and details the corresponding disciplinary procedures. The university routinely reviews its assessment mechanisms and academic outcomes to support continuous improvement.

Final projects are evaluated through a public and synchronous defence before a board of examiners. This board is composed of the student's supervising course instructor, the coordinating professor of the final project, and a third expert who may be an academic from one of the participating institutions or an affiliated faculty member. Throughout the semester, students submit partial deliverables defined in the course plan, which are used to track progress and provide feedback.

The final submission consists of a project document outlining objectives, planning, execution, and results; a video presentation summarizing key aspects of the work; and, in most cases, a product such as an application, tool, or service. The defence takes place following a review of these deliverables. During the session, the board poses questions to the student about the development and results of the project, and student responses may prompt further clarification. The final mark reflects continuous work over the semester (evaluated by the supervisor), along with the quality of the project document, presentation, product (if applicable), and the student's performance during the defence. The board compiles an assessment report based on these components.

Assessment

While the documentation provides a detailed account of the assessment mechanisms used by UOC, it does not include specific information on how these methods will be aligned across the three institutions involved in the joint programme. It is not clear whether rubrics or standardized assessment criteria will be uniformly applied across the consortium. Furthermore, there is no mention of whether grading systems have been harmonized or if conversion tables will be used.

During the visit, in response to questions regarding assessment standardization, the programme indicated that rubrics will be used to align evaluation practices across institutions, and efforts to harmonize assessments are currently underway. Meetings have been scheduled to continue this alignment process. However, it was confirmed that no conversion or translation table for grading systems currently exists. The programme explained that rubrics will serve to eliminate the need for such a table, providing a consistent and transparent assessment framework. These rubrics have not yet been developed.

This clarification demonstrates an awareness of the need for alignment, but the absence of detailed procedures or finalized systems in the documentation suggests that further development is still in progress.

Although UOC's academic regulations leave it to each program's discretion to decide whether the tutor may be part of the final project examination board during the presentation and defence—stating that "*the participation of the bachelor's or master's degree final project tutor is at the discretion of each program*"—the programme has chosen to include the tutor in all parts of the thesis assessment.

Given the tutor's ongoing involvement in supervising the project, their participation in the assessment panel may raise concerns about the perceived impartiality of the evaluation process. It is therefore recommended that the programme reconsiders the composition of the examination board during the presentation and defence. Clarifying this aspect could enhance transparency and reinforce confidence in the objectivity of the final assessment.

The programme should reconsider the composition of the examination board during the presentation and defence to help ensure impartiality and reinforce confidence in the objectivity of the final assessment.

The panel concludes that **the standard is compliant with conditions.**

Requirements

- The programme must establish standardized rubrics and assessment criteria across all institutions. A unified grading system or conversion table should also be created to harmonize grading practices. These measures must be finalized before the implementation of the programme.

Recommendations

- The programme should reconsider the composition of the examination board during the presentation and defence to help ensure impartiality and reinforce confidence in the objectivity of the final assessment.

6. 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 SER describes that UOC provides an online support channel to ensure accessible assistance for its students. Evidence of this support system is detailed in the Student Guide and includes the following:

- *Online Availability*: UOC's support services are accessible every day of the week, at any time and from any location. This 24/7 availability underscores the institution's commitment to flexibility and responsiveness.
- *Help Service via Virtual Campus*: The primary channel for assistance is the Help Service located within the Virtual Campus. This platform serves as a centralized system for students to submit queries and receive personalized responses.
- *Social Media Support*: UOC maintains active social media accounts, which are also used as support points. These platforms provide an additional method for students to seek help and stay informed.
- *Incident-Specific Channels*: For particular situations such as final tests or project defences conducted online, UOC establishes temporary, specialized channels to address issues quickly. This ensures that technical or procedural concerns during critical academic moments are efficiently resolved.

Assessment

The documentation demonstrates UOC's structured and student-centric approach to online academic support. The panel notes that, although it became evident during the online visit, it would be advisable to explicitly indicate that all student support will be managed through the centralized UOC platform. It could also be more clearly indicated that all partner universities involved in the project have contributed to this support framework. Additionally, the documentation should provide more information regarding any special provisions in place to address potential issues arising from the joint nature of the degree. It also does not specify whether support is available for securing internships (elective credits), nor does it clarify the type of supervision that will be provided during the internship period.

The panel concludes that **the standard is compliant.**

Recommendations

- Provide detailed information on internship support, including assistance with placement and the supervision structure.
- Clearly indicate that all student support is centralized through the UOC platform and specify the contributions of all partner universities.

7. RESOURCES

7.1. Staff

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

Evidence

The SER includes a profile of the involved professors, highlighting their most significant scientific and teaching contributions and professional experience as well as the courses they will teach (Annex A.1.10). They cover all the subjects of the degree.

The proposal outlines a teaching staff of 15 professors from UOC, 3 from UNED, and 8 from OUNL, of which 9 are associate professors, 6 are lecturers or senior researchers, 4 are full professors and 7 are assistant professors. This teaching staff possesses the necessary academic qualifications, external recognitions, and relevant experience to ensure high-quality training. According to the evidence provided, they are also actively engaged in research projects and have contributed to research within the programme's field.

However, in the cooperation agreement there are no indications that each partner university agrees to provide staff who possess the appropriate (national) qualifications and credentials necessary to deliver and manage the joint bachelor programme effectively. This includes ensuring all staff meet the relevant pedagogical, professional, English-language and accreditation requirements as per the national standards of the country where the programme is offered.

Staff training will cover facilities, learning, and teaching approaches; however, there is no mention of training related to online learning, nor indication on whether lecturers master English sufficiently.

During the visit, clarification was provided regarding the qualifications and language proficiency of the teaching staff. It was noted that all lecturers involved in the programme hold doctoral degrees. While not all possess formal qualifications in English, the language is considered the standard means of communication in the field of Informatics, implying a generally sufficient level of proficiency among staff. Moreover, most of them have substantial international teaching experience and are proficient in the English language.

Regarding administrative staff, the programme does not clearly specify the staff assigned to administrative or coordination activities.

Assessment

The panel considers that the staff meets the necessary requirements in terms of number, qualifications, professional expertise, and international experience to effectively deliver the study programme and teach in English. Nevertheless, it would be useful to have more information of pedagogical qualifications, particularly regarding online learning. Also, more information about the staff assigned to administrative and coordination activities could help in evaluating the staffing adequacy. Given these points, the panel considers that while many aspects are satisfactory, additional details in these areas would be welcome to provide a fuller perspective.

The panel concludes that **the standard is compliant**.

Enhancement areas

- Provide evidence of teaching staff qualifications in online teaching methodologies and outline plans for training where needed.
- Clarify the staff assigned to administrative or coordination activities within the study programme.

7.2. Facilities

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

Evidence

The SER outlines the online facilities available for the courses and provides links to video tours and relevant information on the university's official website for further reference, since the visit has taken place online.

The Cooperation Agreement also states that the Joint Bachelor's Degree will be delivered online via the UOC's Virtual Campus (1.7). Within this platform (Canvas), students can access the virtual classroom, consult the UOC library, complete administrative procedures, interact with the UOC community, and find answers to their inquiries. The teaching staff of OUNL and UNED have transferred their courses to UOC's Virtual Campus, with the goal of offering students a unified and aligned view of the degree.

The virtual classroom provides students with access to their enrolled courses, including the teaching plan, learning resources (including video materials), activities, and a record of evaluation results. Additionally, it facilitates interaction between teaching staff and students. The platform includes two primary communication spaces: the teacher's announcements and discussion forums.

The teaching methodology varies by course type. Standard courses follow a common learning plan with a maximum of 70 students per classroom. Courses with special dedication focus on individualized learning have a maximum of 50 students, and project courses should not exceed 40 students. Final projects require personalized tutoring, with a maximum of 10 to 15 students per class, often fewer.

Assessment

The online facilities provided by the programme are well-aligned with the requirements of the curriculum and are conductive to the achievement of its intended learning outcomes. The panel views the use of a unified platform for all students positively. This approach enhances transparency and is therefore considered an asset to the programme.

The adequacy of these facilities, especially when combined with the programme's academic resources and support services, indicates that the programme is well equipped to deliver a comprehensive educational experience that enables students to succeed in the fields of software development and testing.

The panel considers the online facilities both sufficient and appropriate to meet the needs of the programme.

The panel concludes that **the standard is compliant.**

8. 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

According to the SER, public information will be available on the bachelor's degree website. This programme will be listed among the academic options on the UOC's website, with a dedicated page providing relevant information in English through the "Study at the UOC" section. For this specific programme, a Student Guide will be published for each academic course. This guide will present essential information for new students, including the process for enrolment, the key features of the UOC's educational model, and the various services provided by the university before, during, and after the completion of studies.

Additionally, information concerning the quality of the programme will be available to the public through the "Quality of the Degrees" section of the university's website. Public information will also be accessible regarding the Faculty of Computer Science, Multimedia and Telecommunications, the academic unit responsible for this programme. On the student guide, prospective students will find guidance on the virtual campus, support and answers to questions, available grants, career and employment and diversity support.

Assessment

The SER outlines that public information about the programme will be offered. Although the process is still ongoing, the panel recommends clearly describing the documentation and information that will be made publicly available to students. This should include specific details regarding the programme's admission requirements, structure, curriculum, and education and examination regulations (EER) related to the joint degree.

The panel concludes that, as other programmes are already clearly described on the university's website, it is expected that once the website for this programme is launched, the relevant information will also be well presented and easily accessible to students.

The panel concludes that the **standard is compliant**.

Enhancement area

- Provide a clear and detailed description of the documentation and information that will be made publicly available to students. This should include specific

information on the programme's admission requirements, structure, curriculum, and education and examination regulations (EER), particularly in relation to the joint degree.

9. QUALITY ASSURANCE

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

Evidence

The SER indicates that the Internal Quality Assurance System (IQAS) that will be applied to guarantee the quality of this programme is that of the UOC. This system is robust, formally certified, and aligns with both national and international quality assurance standards in higher education.

The Cooperation Agreement demonstrates a structured approach to quality assurance in line with the ESG, particularly Part 1 (ESG 1.1 to 1.10). The agreement establishes governance mechanisms, collaborative processes, and accountability measures that collectively ensure the programme meets the required standards for internal assurance in joint higher education programmes.

The agreement establishes a Coordination Committee responsible for policymaking, curriculum oversight, and quality assurance, ensuring alignment with the European Approach for Quality Assurance of Joint Programmes. The Education and Examination Regulations (EER) are designed to comply with the Open EU Alliance framework, reinforcing a shared commitment to quality. The programme's governance structure ensures that all partner institutions contribute to maintaining high academic standards.

The programme is delivered entirely online via UOC's Virtual Campus, ensuring accessibility and flexibility for students. Assessment practices are overseen by the Joint Examination Board, which ensures fairness, consistency, and adherence to academic integrity. Procedures for handling student appeals and academic fraud are clearly defined, reinforcing a transparent and equitable learning environment.

Admission criteria are determined by the Coordination Committee, with UOC managing centralised enrolment. The Joint Diploma is awarded upon successful completion, and the programme follows the ECTS system facilitating credit recognition and mobility.

Each institution provides qualified faculty for its respective courses, ensuring that teaching standards are met. The Joint Programme Committee, composed of academic representatives, oversees teaching quality and curriculum coherence. Learning resources, including digital materials and student support services, are facilitated through UOC's platform, with contributions from all partners.

The Coordinating University (UOC) manages student data and academic records, ensuring consistency in reporting. Key performance indicators, such as enrolment statistics and progression rates, are monitored and shared among partners.

The Coordination Committee conducts internal evaluations every two years to assess the programme's effectiveness. The Joint Examination Board submits annual reports on assessment practices, while the Joint Programme Committee advises on curriculum

enhancements based on feedback and performance data. The agreement mandates compliance with external accreditation requirements, ensuring cyclical quality reviews.

Assessment

The agreement provides a solid framework for quality assurance, aligning with ESG standards through collaborative governance, structured review processes, and accountability mechanisms. However, there are areas where improvements could be made to further strengthen compliance and promote continuous improvement. Specifically, the consortium should consider to explicitly take for consideration some key quality indicators and analysis such as student satisfaction with their programmes and career paths of graduates, which would enhance compliance with ESG 1.7. Additionally, the consortium should consider publishing annual IQAS review reports that would help demonstrate a commitment to continuous improvement and meet the requirements of ESG 1.9.

Overall, the programme meets the European quality assurance standards, and the panel concludes that the **standard is compliant**.

Enhancement areas

- Establish mechanisms to measure key quality indicators for consideration and analysis, such as student satisfaction with their programme, career paths of graduates, and other relevant factors.
- Publish annual IQAS review reports.

DECISION

Summary of the assessment

STANDARD	ASSESSMENT
ELIGIBILITY	**Compliant**
- ***Status***	Compliant
- ***Joint design and delivery***	Compliant
- ***Cooperation agreement***	Compliant with conditions
LEARNING OUTCOMES	**Compliant**
- ***Level***	Compliant with conditions
- ***Disciplinary fields***	Compliant
- ***Achievement***	Compliant
STUDY PROGRAMME	**Compliant**
- ***Curriculum***	Compliant
- ***Credits***	Compliant
- ***Workload***	Compliant
ADMISSION AND RECOGNITION	**Compliant**
- ***Admission***	Compliant
- ***Recognition***	Compliant
LEARNING, TEACHING AND ASSESSMENT	**Compliant with conditions**
- ***Learning and teaching***	Compliant
- ***Assessment of students***	Compliant with conditions
STUDENT SUPPORT	**Compliant**
RESOURCES	**Compliant**
- ***Staff***	Compliant
- ***Facilities***	Compliant
TRANSPARENCY AND DOCUMENTATION	**Compliant**
QUALITY ASSURANCE	**Compliant**

This External assessment committee recommends to the Institutional and Programme Review Commission of AQU Catalunya the favourable ex-accreditation of the programme evaluated with the level of "**Compliant with conditions**".

The Chair of the external evaluation committee states that this document constitutes the assessment report.

Digitally signed by Wim Van Petegem
Date: 2025.05.30 08:39:09 +02'00'

Wim Van Petegem

Leuven, 29/05/2025

Summary of requirements

1. Eligibility

- The Cooperation agreement should be updated to explicitly address the staff and student mobility in the context of online programmes.

2. Learning Outcomes

- The consortium should clearly demonstrate how the programme meets the academic standards required for a WO degree, particularly in the context of the Dutch qualifications' framework. This should include a justification of the academic level of the intended learning outcomes, the inclusion of research-oriented components, and the coherence with national criteria for WO programmes.

5. Learning, teaching and assessment

- The programme must establish standardized rubrics and assessment criteria across all institutions. A unified grading system or conversion table should also be created to harmonize grading practices. These measures must be finalized before the implementation of the programme.

Summary of enhancement areas

2. Learning Outcomes

- Provide a proper matrix aligning the ILOs with the relevant national and European qualifications' frameworks.

3. Study Programme

- Review the curriculum (courses or at least the content of already included courses) to treat software testing aspects in more detail.
- It would be beneficial to reflect the 9 subject areas in the overview curriculum on page 14 to give more insight into the structure of the curriculum.

7. **Resources**
    - Provide evidence of teaching staff qualifications in online teaching methodologies and outline plans for training where needed.
    - Clarify the staff assigned to administrative or coordination activities within the study programme.

8. **Transparency and documentation**
    - Provide a clear and detailed description of the documentation and information that will be made publicly available to students. This should include specific information on the programme's admission requirements, structure, curriculum, and education and examination regulations (EER), particularly in relation to the joint degree.

9. **Quality Assurance**
    - Establish mechanisms to measure key quality indicators for consideration and analysis, such as student satisfaction with their programme, career paths of graduates, and other relevant factors.
    - Publish annual IQAS review reports.

Summary of recommendations

2. **Learning Outcomes**
    - Consider referencing international frameworks to strengthen the programme's academic foundation and enhance its international comparability.
    - Establish a formal mechanism for the stakeholder involvement in the development and periodic review of the ILOs.
    - Consider including elements related to the intercultural competence or similar dimensions, in the design of the ILOs.

3. **Study Programme**
    - Ensure consistent presentation of curricular content across all documentation. Key topics—such as security and embedded systems—should be clearly identified and consistently referenced where relevant.

5. **Learning, teaching and assessment**
    - Provide detailed information on how teaching and learning methods will be adapted for online delivery, including student-teacher interactions and use of digital tools.
    - Address how the programme will accommodate diverse cultural and educational backgrounds to ensure inclusivity.
    - The programme should reconsider the composition of the examination board during the presentation and defence to help ensure impartiality and reinforce confidence in the objectivity of the final assessment.

6. **Student support**
    - Provide detailed information on internship support, including assistance with placement and the supervision structure.
    - Clearly indicate that all student support is centralized through the UOC platform and specify the contributions of all partner universities.