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FINAL REPORT

METHODS AND TECHNOLOGIES FOR SUSTAINABLE AVIATION PROPULSION AND POWER GENERATION (MASTER OF SCIENCE)

OFFERED BY

RUHR-UNIVERSITY BOCHUM (GERMANY)

ÉCOLE CENTRALE DE LYON (FRANCE)

UNIVERSITÉ DE LIÈGE (BELGIUM)

UNIVERSITY OF NAPLES "FEDERICO II" (ITALY)

February 2026

Assessment following the European Approach for Quality Assurance
of Joint Programmes



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DECISION OF THE AQAS STANDING COMMISSION ON THE STUDY PROGRAMME

- **METHODS AND TECHNOLOGIES FOR SUSTAINABLE AVIATION PROPULSION AND POWER GENERATION (MASTER OF SCIENCE)**

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- **RUHR-UNIVERSITY BOCHUM (GERMANY)**
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- **UNIVERSITY OF NAPLES “FEDERICO II” (ITALY)**

Based on the report of the expert panel and the discussions of the AQAS Standing Commission in its 28th meeting on 23 February 2026, the AQAS Standing Commission decides:

1. The study programme “**Methods and Technologies for Sustainable Aviation Propulsion and Power Generation**” (**Master of Science**) jointly offered by **Ruhr-University Bochum**, Germany, **École centrale de Lyon**, France, **Université de Liège**, Belgium, and **University of Naples “Federico II”**, Italy is accredited according to the Standards defined in the European Approach for Quality Assurance for Joint Programmes.

The study programme complies with the requirements defined by the criteria and thus the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) and the European Qualifications Framework (EQF) in their current version.

2. The accreditation is given for the period of **six years** and is valid until **31 March 2032**.

The following **recommendations** are given for further improvement of the programme:

1. When revising the intended learning outcomes after the programme has started and some experiences were gained, it is recommended to check them for redundancies, and aspects of sustainability should be highlighted more clearly.
2. The information in the module handbook regarding the number of hours per credit should be edited to make clear that 27 hours are estimated per CP.
3. From the start of the programme, particular attention should be paid to ensuring that students receive adequate support in finding housing in each mobility phase.
4. In order to provide students with a low-threshold point of contact, it is recommended that a student coordinator/contact person be established at each university.

With regard to the reasons for this decision the Standing Commission refers to the attached assessment report.

I. Preamble

AQAS – Agency for Quality Assurance through Accreditation of Study Programmes – is an independent non-profit organisation supported by nearly 90 universities, universities of applied sciences, and academic associations. Since 2002, the agency has been recognised by the German Accreditation Council (GAC). It is, therefore, a notified body for the accreditation of higher education institutions and programmes in Germany.

AQAS is a full member of ENQA and is also listed in the European Quality Assurance Register for Higher Education (EQAR) which confirms that our procedures comply with the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), on which all Bologna countries agreed as a basis for internal and external quality assurance.

AQAS is an institution founded by and working for higher education institutions and academic associations. The agency is devoted to quality assurance and quality development of academic studies and higher education institutions' teaching. In line with AQAS' mission statement, the official bodies in Germany and Europe (GAC and EQAR) approved that the activities of AQAS in accreditation are neither limited to specific academic disciplines or degrees nor to a particular type of higher education institution.

II. Accreditation procedure

This report results from the external review of the Master's programme "Methods and Technologies for Sustainable Aviation Propulsion and Power Generation" (MENTOR) offered jointly by the degree-awarding universities Ruhr-University Bochum (Germany), École Centrale de Lyon (France), Université de Liège (Belgium), and University of Naples "Federico II" (Italy) as well as the associate partner institutions Von Karman Institute for Fluid Dynamics, Rhode-Saint-Genèse (Belgium), and San Diego State University, San Diego (USA).

1. Criteria

The programme is assessed against the criteria defined by the European Approach for Quality Assurance of Joint Programmes. The criteria are based on the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) 2015.

2. Approach and methodology

Initialisation

The university consortium mandated AQAS to perform the accreditation procedure in February 2025. The university consortium produced a Self-Evaluation Report (SER). In August 2025, the consortium handed in a draft of the SER together with the relevant documentation on the programme and an appendix. The appendix included, e.g.:

- information on the legal basis
- the partnership agreement
- the CVs of the teaching staff/supervisors
- information on student services
- academic regulations
- a draft of the Diploma Supplement

AQAS checked the SER regarding completeness, comprehensibility, and transparency. The accreditation procedure was officially initialised by a decision of the AQAS Standing Commission on 8 September 2025. The final version of the SER was handed in December 2025.

Nomination of the expert panel

The composition of the panel of experts follows the stakeholder principle. Consequently, representatives from the respective disciplines, the labour market, and students are involved. Furthermore, AQAS follows the principles for the selection of experts defined by the European Consortium for Accreditation (ECA). The Standing Commission nominated the aforementioned expert panel in September 2025. AQAS informed the university consortium about the members of the expert panel and the university consortium did not raise any concerns about the composition of the panel.

Preparation of the site visit

Prior to the site visit, the experts reviewed the SER and submitted a short preliminary statement including open questions and potential needs for additional information. AQAS forwarded these preliminary statements to the university consortium and to all panel members in order to increase transparency in the process and the upcoming discussions during the site visit.

Site visit

After a review of the SER, a site visit to the university took place on 13 and 14 January 2026. On site and online, the experts interviewed different stakeholders, e.g. the management of the higher education institution, the programme management, teaching and other staff, as well as students and labour market representatives in separate discussion rounds. The visit concluded by the presentation of the preliminary findings of the group of experts to the consortium's representatives.

Reporting

After the site visit had taken place, the expert group drafted the following report, assessing the fulfilment of the criteria. The report included a recommendation to the AQAS Standing Commission. The report was sent to the consortium for comments.

Decision

The report, together with the comments of the university consortium, forms the basis for the AQAS Standing Commission to make a decision regarding the accreditation of the programme. Based on these two documents, the AQAS Standing Commission took its decision on the accreditation on 23 February 2026. AQAS forwarded the decision to the university consortium. The university consortium had the right to appeal against the decision or any of the imposed conditions.

In March 2026, AQAS published the report and the result of the accreditation, as well as the names of the panel of experts.

III. General information on the universities

“Methods and Technologies for Sustainable Aviation Propulsion and Power Generation” (MENTOR) is a two-years English taught Master’s programme jointly offered by:

- Ruhr-University Bochum (RUB) (coordinating institution)
- École Centrale de Lyon (ECL)
- Université de Liège (ULiège)
- University of Naples “Federico II” (UNINA)

Also, two associated partners are included (non-degree awarding):

- Von Karman Institute for Fluid Dynamics for testing theoretical knowledge and gaining hands-on experience on technological devices (Belgium)
- San Diego State University with its Center for Industrial Training and Engineering Research, for including students in industrial research activities (USA)

The programme aims at training its students for the energy transition for power generation and propulsion in industry and research in the fields of aerospace engineering or energy transformation for power generation by a synergistic and holistic treatment of the topics shared between these areas. The programme is planned as encompassing a portfolio of methodological fundamentals, soft skills modules, and technology-specific courses, including mobility between the partner universities, and it will include practical training and a Master’s thesis.

As stated in the SER, the partners are all recognised in the higher education system of their countries. The following table shows the legal basis of the degree-awarding universities for accreditation following the European Approach and awarding of the joint Master’s degree:

Name of the institution	Relevant External Quality Assurance Agency (if any)	European Approach allowed (yes/no)	Additional information: Legal basis for accreditation and awarding of the joint Master’s degree
RUB	Accreditation Council (Akkreditierungsrat) through AQAS accreditation agency (signatory to the Multilateral Agreement on the Mutual Recognition of Accreditation Results regarding Joint Programmes [MULTRA])	Yes	Act on the Universities of the State of North Rhine-Westphalia of 16 September 2014 (GV.NRW.Page 547). State Treaty on the Organisation of a Joint Accreditation System for Quality Assurance in Studies and Teaching at German Universities of June 2017. Student Accreditation Decree (StudakVO) NRW of 25.1.2018.
ULiège	Gouvernement of the French Community of Belgium and Académie de Recherche et d’Enseignement supérieur (ARES)	Yes	Decree of the 7 th of November 2013
UNINA	Academic Senate approval decree (after Departmental proposal and School approval)	Yes	University Master Regulation (Rector’d decree 230-26th January 2022)
ECL	Ministère de l’Enseignement Supérieur et de la Recherche (MESR)	Yes	Order of 24 June 2022 accrediting École Centrale de Lyon with a view to awarding national diplomas. Accreditation number (mechanical engineering field): 20160476

IV. Assessment of the study programme

1. Eligibility

1.1 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.

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

1.3 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.

Description

MENTOR was developed as a joint degree programme by the four universities and two associated partners mentioned above. According to the self-evaluation report, one of the main aims of the new Master's programme is to bring together the partners' different research areas and make them available to students in one joint programme. The design and delivery of the programme are based on the partnership agreement, accompanied by documents such as the module handbook, the examination regulations, the student handbook, the consortium student agreement, the quality handbook, and the joint degree parchment as well as the diploma supplement.

Among other things, the cooperation agreement regulates the following aspects:

- Programme governance (including roles and duties as well as the joint governing bodies)
- Distribution of responsibilities (with RUB functioning as the coordinating institution that bears the financial and legal responsibility, and acting on behalf of and in cooperation with the partner universities vis-à-vis external partners)
- Semester structure and mobility paths
- Student administration
- Staff and stakeholders
- Quality assurance

The following governing entities are explained to be established:

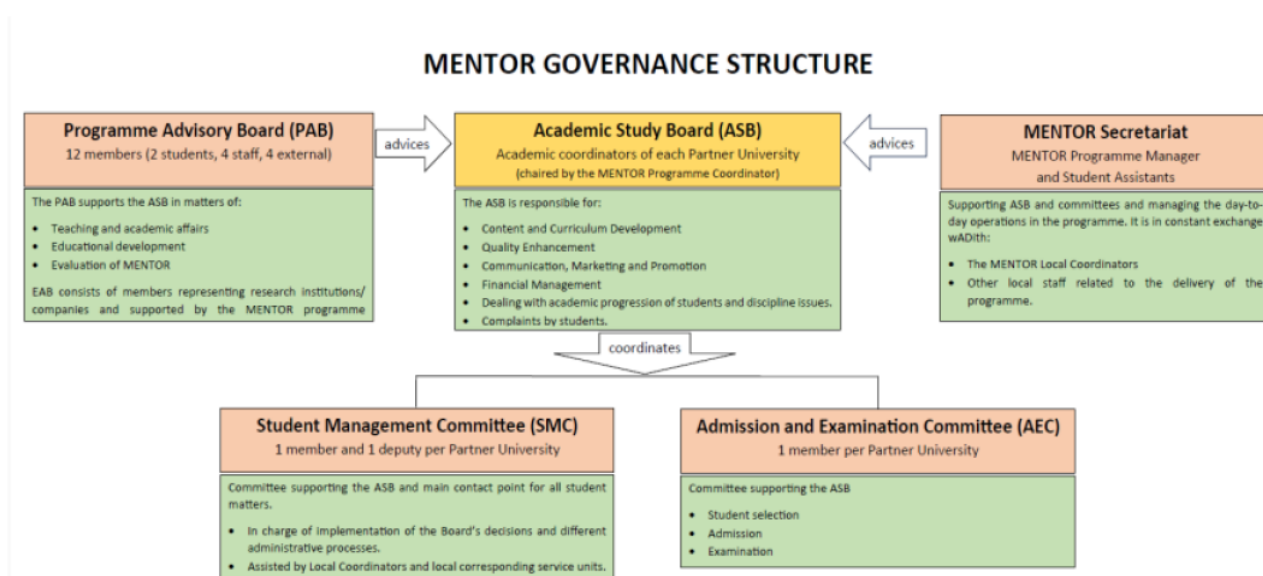
- Each partner appoints a MENTOR Director responsible for the implementation and execution of the programme at their institution.
- The MENTOR Programme Coordinator (the Director of RUB) is responsible for the overall coordination of the programme, tasks related to ERASMUS-MUNDUS scholarships (in case the funding is granted), discussing the operation, coordination, and quality assurance of the programme with the Academic Study Board and other stakeholders, including the programme's external communication, finance, and activities involving MENTOR stakeholders.

- The MENTOR Programme Manager (at RUB) will assist the Programme Coordinator, manage day-to-day operations (financial management, counselling of students, etc.), exchange with the programme’s local coordinators, quality management, etc.
- Each partner institution appoints a MENTOR Local Coordinator to assist the Local Director to carry out day-to-day administrative and technical tasks.

In addition, the following governing bodies are listed in the SER:

- The Academic Study Board, chaired by the Programme Director, is responsible for general and strategic matters, supervision, and approval of major processes, e.g., content and curriculum development, quality enhancement, financial management, academic progression including complaints at programme level by students, etc. It will also be in exchange with and report to the senior management of the MENTOR partner universities.
- The Admission and Examination Committee will be formed by a delegate from each partner university.
- The Programme Advisory Board will consist of two students enrolled in MENTOR, four members of the teaching staff, and four external experts.
- The Student Management Committee, consisting of one member and one deputy per partner university, will oversee the implementation of the Academic Study Board’s decisions and of different administrative processes to manage the programme, and will also be the main contact point for student matters.

The governance structure is depicted as follows:



Expert evaluation

The Master’s programme “Methods Technologies for Sustainable Aviation Propulsion Power Generation” (MENTOR) is offered as a joint programme by a consortium of recognised European higher education institutions, coordinated by Ruhr-Universität Bochum and planned in co-operation with École Centrale de Lyon, Université de Liège, and Università di Napoli “Federico II”, with additional contributions from the above-mentioned associated partners.



Based on the review of the Self-Evaluation Report and the annexed documents, as well as the discussions during the site visit, the following can be confirmed:

- The participating universities are higher education institutions in their respective countries and, based on the provided documentation, seem to be legally entitled to participate in a joint degree programme and to award a joint degree.
- The programme appears to be genuinely offered jointly, with all partner institutions involved adequately.
- A cooperation agreement is in place which, based on the information provided, covers the key elements required for the operation of the joint programme.
- The joint character of the programme is consistently described across the Self-Evaluation Report and the annexed documents.
- From an industry and labour-market perspective, the described institutional and legal framework appears sufficiently robust to support the intended implementation of the programme. This was also confirmed by industry representatives from Germany and France, with whom the experts were able to exchange views during the site visit.

The programme is positioned at EQF Level 7, comprises 120 ECTS credits over two years, and is aligned with the European Standards and Guidelines for Quality Assurance in Higher Education. This assumes the recognised status of the participating institutions within their national higher education systems (see table in the first chapter). While the documentation does not explicitly state the national recognition of each institution as a higher education institution, such recognition is implicitly evidenced through their degree-awarding roles, EQF alignment, and participation in the joint accreditation process.

The legal and organisational framework of the MENTOR programme supports joint delivery and authority through a comprehensive partnership agreement complemented by formal academic instruments such as the Examination Regulations, Student Handbook, and Module Handbook. These documents collectively establish the terms and conditions of cooperation, including governance structures, financial management, quality assurance, admission procedures, student progression, and termination arrangements. However, while the joint nature of the programme is clearly planned, the documentation would probably benefit from a more explicit confirmation that the national legal frameworks of all partner countries enable participation in a joint programme and the awarding of a joint degree; this could be taken into consideration for the ongoing development of the programme. The description of the legal form of the final degree awarded is stated in the draft diploma supplement provided as an annex to the SER and is therefore documented for graduates.

MENTOR is jointly designed, with all partner institutions involved in curriculum development, teaching, assessment, supervision, and quality assurance, as stipulated in the partnership agreement. The programme structure includes mandatory student mobility across the partner institutions, guaranteeing that learning outcomes are achieved through exposure to diverse academic environments including the Belgian Von Karman Institute and visits to San Diego State University for some students. Admission and selection procedures are clearly defined, jointly managed, and based on rather transparent criteria regarding academic and linguistic skills. Jointness and integration are further ensured through a clear governance structure: each partner institution appoints a MENTOR Director, a senior academic responsible for all MENTOR-related matters at their university and for liaising with counterparts in the consortium, while the MENTOR Director at RUB acts as Programme Coordinator, ensuring clear roles, effective coordination, and coherent implementation across the partnership. During their site visit, the experts were able to experience the involvement of the staff from the partner universities and their high commitment to the programme from which the implementation will benefit.

The programme's examination regulations, assessment methods, and quality assurance processes are generally clearly described, with appropriate assessment formats and continuous feedback mechanisms. Credit recognition and student assessment are jointly managed, and quality enhancement is supported through regular evaluation cycles aligned with European standards. While the programme title is clearly identified, the documentation does not yet specify the exact degree title as it will appear on the diploma, nor does it fully detail the joint degree-awarding procedure. These elements represent formal clarifications rather than substantive gaps and could be addressed through explicit provisions within the cooperation agreement or its annexes in the follow-up processes of the programme's quality assurance in the next years.

Overall, the MENTOR programme meets the core academic, organisational, and quality assurance requirements for a joint master's degree. The terms and conditions of the joint programme are clearly stipulated in the partnership agreement which ensures the joint delivery of the programme as well as shared responsibilities among all partners. The remaining areas for improvement relate primarily to the explicit articulation of the legal recognition, joint degree-awarding capacity, and degree denomination, rather than to the programme's academic design, delivery, or governance, which are comprehensively and convincingly established. These formal clarifications could help to document the convincing programme in full for stakeholders from different academic systems and backgrounds. However, the documents submitted are already understandable and comprehensible in themselves. There is no urgent need for action to make any adjustments.

Conclusion

The criterion is fulfilled.

2. Learning outcomes

- 2.1 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).*
- 2.2 The intended learning outcomes should comprise knowledge, skills, and competencies in the respective disciplinary field(s).*
- 2.3 The programme should be able to demonstrate that the intended learning outcomes are achieved.*
- 2.4 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.*

Description

The Master's programme aims at level 7 of the Qualifications Framework of the European Higher Education Area (QF-EHEA). It was developed by the partners to train young professionals who are supposed to be educated to shape up the future of energy transition for power generation and propulsion in industry and research. In this way, MENTOR aims at helping to professionalise education in sustainable propulsion and power generation for aviation through research-oriented teaching and including practical elements carried out in cooperation with external stakeholders. Thus, the programme aims at qualifying graduates who are supposed to be highly competent not only in the fundamentals of physical principles but will recognise synergies and will be able to transfer and apply acquired methodological knowledge in a flexible manner across technology as well as scientific sectors. Graduates are supposed to become new energy and propulsion specialists who can approach complex issues from a systemic, holistic viewpoint. Besides, they are also supposed to be able to skilfully communicate at various levels (society, industrial stakeholders, policy and lawmakers) to fulfil their role in steering and shaping up the transition to a climate neutral industrial economy.

The target group of the programme are students that have acquired a qualified Bachelor's degree (Level 6 QF-EHEA) or an equivalent degree that gives them access to a Master's degree programme and who have demonstrable experience in areas related to the topic of MENTOR, including (but not limited to) the following fields: Mechanical Engineering, Energy Engineering, Aircraft Engineering, Civil Engineering, Environmental Engineering, and related fields of study.

The programme's overall learning outcomes are listed in the following overview:

Competences & Intended Learning Objectives	Intended Learning Objective 1:	Intended Learning Objective 2:	Intended Learning Objective 3:
Personal Competences	<i>Time management & self organisation</i> Learn how to deliver high-quality results in a timely and effective manner managing a complex and strict time-schedule		
Professional Competences	<i>Effective Project Management</i> Determine the requirements to design and implement a multi-partner project in a given time	<i>Creative and Transversal Thinking</i> Develop new perspectives for sustainable aviation propulsion and power generation, think beyond disciplinary boundaries and explore and generate new ideas that can be applied to current and emergent needs.	<i>Effective Team Management</i> Engage in dynamic team processes in international projects and intercultural encounters
Disciplinary Competences & Skills Competences that give graduates the capacity to navigate the MENTOR core academic fields	<i>Engineering Design & Operations</i> Knowledge of design and operation principles for complex power generation and propulsion system, acquired knowledge of industrial design and production procedures and management	<i>Independent and Critical Scientific Analysis</i> Develop a research topic independently and apply appropriate theoretical and methodological approaches <i>Context Analysis and Understanding</i>	<i>Interdisciplinary methodological skills</i> Having the ability to integrate disciplinary knowledge in interdisciplinary and transdisciplinary research and practical projects.

		collect and analyse data from complex system and extract inferences and identify synergies as well as trends to define optimisation and further development paths	
Professional Values Competences that give graduates the capacity to act as leading professionals in their field		<i>Professional Ethics</i> Embrace professional ethical practices and responsible conduct in their own work.	<i>Transversal and inclusive thinking in technical contexts</i> Encourage dialogue between approaches and perspectives
Transversal Competences & Leadership Abilities that cross one or several competence fields	<i>Inclusiveness</i> Developing awareness of the means to include others, using inclusive language and critically using different media. <i>Sustainable Development Competences</i> Demonstrate knowledge of SDGs, the capacity to apply and take action on SDGs, critical thinking skills	<i>Intercultural competences in technical fields</i> Critically reflect on research and development practices in different national contexts <i>Effective Communication</i> Capacity for effective communication to audiences characterised by different technical competence levels.	<i>Structural and Systemic knowledge</i> Position their own research findings in the broader context of sustainable aviation propulsion and power generation research and practice.

The learning outcomes are to be achieved at module level as follows:

I. Academic Research		Relevant Modules
Knowledge & Understanding	<ul style="list-style-type: none"> Have knowledge of design and operation principles for complex power generation and propulsion system. Have acquired knowledge of industrial design and production procedures and management. 	M1-1, M1-2, M1-3, M1-5, M2-1-4/M2-2-4, M2-1-5/M2-2-5, M2-1-8, M2-1-9/M2-2-8, M2-2-1, M2-2-3, M2-2-6, M2-2-7, M3-1-4, M3-1-5, M3-1-6, M3-1-7, M3-2-1, M3-2-3, M3-2-4, M3-2-8
Skills	<ul style="list-style-type: none"> Develop a research topic and apply appropriate theoretical and methodological approaches. Can collect and analyse data from complex system and extract inferences and identify synergies as well as trends to define optimisation and further development paths. Are capable of recognising and critically assessing the potential of different technologies based on a sound knowledge of the driving physical principles. Critically reflect on research and development practices in different national contexts. 	M1-2, M1-3, M1-4, M1-7, M2-1-1/M2-2-2, M2-1-2, M2-1-3, M2-1-6, M2-2-3, M2-2-5, M3-1-1, M3-1-2, M3-1-3, M3-1-4, M3-1-8, M3-2-2, M3-2-5, M3-2-6, M3-2-7, M2-1-9/M2-2-8, M4
Professional Values	<ul style="list-style-type: none"> Determine the requirements to design and implement a multi-partner project in a given time. Embrace professional ethical practices and responsible conduct in their own work. Encourage dialogue between approaches and perspectives. 	M1-7, M2-2-1, M3-1-3, M3-1-7, M3-1-8, M3-2-8, M4
II. Context Analysis and Reflection		
Knowledge & Understanding	<ul style="list-style-type: none"> Can apply the acquired knowledge of design and operation principles for complex power generation and propulsion system to develop/design these systems in a flexible and adaptable manner, considering the sustainability and local availability of the primary energy sources and possible socio-economic impact of new technologies. Contribute to broader debates on sustainability pathways, transformative governance and adaptation approaches. 	M1-5, M2-1-7, M2-1-8, M2-2-1, M2-2-6, M3-2-2, M3-2-5, M3-2-7,
Skills	<ul style="list-style-type: none"> Possess advanced research, professional, digital design and analysis skills in engineering Develop new perspectives for sustainable aviation propulsion and power generation 	M1-5, M2-2-1, M2-1-9/M2-2-8, M4

	<ul style="list-style-type: none"> Engage in dynamic team processes in international projects and intercultural encounters. 	
Professional Values	<ul style="list-style-type: none"> Position their own research findings in the broader context of sustainable aviation propulsion and power generation research and practice. 	M2-1-9/M2-2-8, M4
III. Leadership		
Knowledge & Understanding	<ul style="list-style-type: none"> Understand the importance of mind shift to enhance transformative change management processes. Exchange knowledge across the various sub-disciplines of the design and operation principles for complex power generation and propulsion system. Explain the opportunities and challenges of current trends in methods and technologies for sustainable aviation propulsion and power generation. 	M2-1-8, M3-2-4, M3-2-1, M3-2-3, M3-2-7, M3-2-5, M2-1-9/M2-2-8, M4
Skills	<ul style="list-style-type: none"> Are able to communicate to experts as well as laypersons, academia, industry, equipped with broad knowledge in the various sub-disciplines of the field. Are capable to think beyond boundaries and to explore and generate new ideas that can be applied to current and emergent needs. 	M3-2-2, M3-2-7 M2-1-9/M2-2-8, M4
Professional Values	<ul style="list-style-type: none"> Think beyond disciplinary boundaries and explore and generate new ideas that can be applied to current and emergent needs. 	M2-1-9/M2-2-8, M4

The minimum agreed training conditions specified in the European Union Directive 2005/36/EC or relevant common trainings frameworks established under the Directive are not relevant for this Master’s programme.

Expert evaluation

The learning outcomes of the MENTOR programme are, in general, clearly described and appropriately aligned with Level 7 of the European Qualifications Framework and the Framework for Qualifications of the European Higher Education Area. They reflect the advanced level of knowledge, skills, and competences expected from a joint Master’s programme and are structured coherently and transparently. They are transparently described in the programme’s documentation.

By organising the learning outcomes into thematic areas, the programme demonstrates a comprehensive and balanced competence profile that integrates academic depth, applied research capability, and professional responsibility. When revising them in the future, however, some sections of the tables listed in the description above should be adapted since they are quite identical, e.g., graduates “are capable to think beyond boundaries and to explore and generate new ideas that can be applied to current and emergent needs” and “think beyond disciplinary boundaries and explore and generate new ideas that can be applied to current and emergent needs” (**finding 1**).

In academic research, the learning outcomes align strongly with the requirements of second-cycle qualifications. Graduates are expected to acquire comprehensive and specialised knowledge of the design and operation of complex power generation and propulsion systems, combined with an understanding of industrial design processes, production procedures, and management principles. This knowledge base is complemented by advanced skills that enable students to independently develop research topics, apply appropriate theoretical and methodological approaches, and analyse complex technical systems. The emphasis on identifying synergies, optimising technologies, and critically assessing research practices across different national and institutional contexts is particularly well suited to a joint and international programme. The inclusion of professional values, such as the ability to design and implement multi-partner projects and a commitment to ethical and responsible research conduct, further reinforces the programme’s alignment with Level 7 descriptors, particularly in terms of autonomy, responsibility, and professional integrity.



From an industry perspective, the learning outcomes place a clear emphasis on system-level understanding, interdisciplinary integration, and the analysis of complex propulsion and energy systems. These competencies are generally consistent with qualification profiles required for advanced engineering, R&D, and system integration roles in industry. Sustainability-related aspects are primarily addressed through efficiency, optimization, and system-level performance considerations; other dimensions commonly associated with sustainable aviation propulsion (e.g., electrification, hybrid architectures, energy storage, and lifecycle-oriented assessment) appear less explicitly reflected in the learning outcomes. These should also be integrated when revising the intended learning outcomes in the next years (**finding 1**).

Overall, the learning outcomes are well formulated, clearly linked to recognised European qualification frameworks, and consistent with the academic and professional objectives of the MENTOR programme. They demonstrate an appropriate balance between theoretical knowledge, research-oriented skills, and professional and ethical competencies, thereby providing a solid foundation for graduates to engage in advanced professional practice, doctoral studies, or research-intensive careers in sustainable power generation and aviation propulsion.

Conclusion

The criterion is fulfilled.

3. Study programme

- 3.1 *The structure and content of the curriculum should be fit to enable the students to achieve the in-tended learning outcomes.*
- 3.2 *The European Credit Transfer System (ECTS) should be applied properly and the distribution of credits should be clear.*
- 3.3 *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 doctor-ates there is no credit range specified. The workload and the average time to complete the programme should be monitored.*

Description

The programme structure is depicted as follows:

Semester 1: Advanced Fundamentals at RUB, Germany		30 CP
Semester 2: Advanced Methods + Specializations at ULiège and VKI, Belgium		30 CP
Profile 1: Aviation (ULiège / VKI)	Profile 2: Energy (ULiège / VKI)	
Semester 3: In Depth Studies at UNINA, Italy or ECL, France		30 CP
Profile 1: Aviation (UNINA)	Profile 2: Energy (ECL)	
Semester 4: Master Thesis at one of the MENTOR Partner Institutions		30 CP

Studying includes at least two compulsory physical mobility periods and the choice between the two profiles “Aviation Propulsion” or “Energy”.



A typical timeline looks as follows:



The first semester is taught to all students at RUB. In the second semester, all students move to Belgium to attend courses at the University of Liège and the Von Karman Institute for Fluid Dynamics. They also select their specialisation and a topic for their Master thesis. The students choosing the energy profile then move to École Centrale de Lyon, whereas the students of the aviation specialisation move to the University of Naples “Federico II”. The thesis can be written in a research lab at any of the four partner universities or the two associated partners. The thesis will be co-supervised by colleagues from all MENTOR partners. Outstanding students will have the opportunity to spend a three-month scholarship-financed period at San Diego State University to write their thesis.

While the content studied in the first semester is identical for both profiles, first differences start emerging in the second semester, and the taught topics are further differentiated in the third semester. During the second and third semesters, attention is supposed to be focused on fluid energy machines, and particularly on thermal turbomachines. Propulsion and power generation systems, intended as thermal machines and their integrated surrounding environment (airframe or power plants, respectively), are introduced in the third semester. Besides, the students will also be involved in planning and advisory activities for sector-coupling in local communities.

The teaching on site is usually taken from existing local Master’s programmes which will be combined with newly designed modules for this programme. To give the students the opportunity to attend courses not offered at their current place of residence in semesters two to four, offering selected virtual teaching formats is planned.

The MENTOR programme has a study load of 120 credit points according to the ECTS (60 CP per year), whereby one credit is equivalent to 27 hours of study. As explained in the SER, the workload will be continuously validated based on the results of the evaluations of the courses. Responsibility for the analysis of the evaluation results and the adequacy of the workload lies with the Academic Study Board (ASB). The ASB is responsible for taking actions to modify the workload based on the evaluation results.

The curriculum structure is depicted as follows:

MENTOR Module Identifier	MENTOR Module Title	CP	Responsible Partner
SEMESTER 1	30 CP ECTS		
1-1	Advanced Fluid Mechanics	5	RUB
1-2	Gas Dynamics	5	RUB
1-3	Thermochemistry	5	RUB
1-4	Thermodynamics of Mixtures	5	RUB
1-5	Turbomachines for Propulsion and Power	5	RUB
1-6	Introduction to Measurement Techniques in Fluid Dynamics	2	VKI
1-7	High Resolution Aerodynamic Simulation	3	Liege
SEMESTER 2	30 CP ECTS		
Track 1	Aviation		
2-1-1	Boundary Layers and Unsteady Phenomena in Turbomachinery	5	VKI
2-1-2	Mechanical Design and Vibrations	5	Liege
2-1-3	Numerical Gas Dynamics for Propulsion and Power	2	RUB
2-1-4	Introduction to Ground Testing Facilities	1	VKI
2-1-5	Turbomachinery Experimental Laboratory Exercise	2	VKI
2-1-6	Introduction to Static and Dynamic Aeroelasticity	3	SDSU
2-1-7	Electromagnetic Energy Conversion	5	Liege
2-1-8	Sustainable Aeronautic Propulsion Systems	5	Liege, RUB
2-1-9	Master Orientation Seminar	2	RUB, VKI, Liège, SDSU, UNINA
Track 2	Energy		
2-2-1	Wind Energy	5	Liege
2-2-2	Boundary Layers and Unsteady Phenomena in Turbomachinery	5	VKI
2-2-3	Cooling and Low-Temperature Heating Systems	5	Liege
2-2-4	Introduction to Ground Testing Facilities	1	VKI
2-2-5	Turbomachinery Experimental Laboratory Exercise	2	VKI
2-2-6	Thermal Power Plants and Combined Heat and Power	5	Liege
2-2-7	Electromagnetic Energy Conversion	5	Liege
2-2-8	Master Orientation Seminar	2	RUB, VKI, Liège, SDSU, Lyon
SEMESTER 3	30 CP ECTS		
Track 1	Aviation		
3-1-1	Flight Mechanics	5	UNINA
3-1-2	Aircraft Aerodynamics	5	UNINA
3-1-3	Design Methods for Aircraft Aerodynamics	2,5	UNINA
3-1-4	Aircraft Design	5	UNINA
3-1-5	Aircraft Onboard Systems	2,5	UNINA

3-1-6	Engine-Airframe Integration 1 (Aircraft Noise Pollution)	2,5	UNINA
3-1-7	Engine-Airframe Integration 2	2,5	UNINA
3-1-8	Aerodynamics of Propellers	5	UNINA
Track 2	Energy		
3-2-1	Electrical Grids	3	Lyon
3-2-2	Climate Change	3	Lyon
3-2-3	Nuclear Power Plants	5	RUB
3-2-4	Energy Conversion and Storage	5	Lyon
3-2-5	Atmospheric Boundary Layers	3	Lyon
3-2-6	River Hydraulics	3	Lyon
3-2-7	Water Resources	3	Lyon
3-2-8	Hydraulic Power Plants	5	Liege, Lyon
SEMESTER 4	30 CP ECTS		
4-1	Master Thesis	30	All
Extracurricular			
AE-1	Language Courses	--	All

Expert evaluation

The structure and content of the curriculum are well aligned with the intended learning outcomes, as the programme progresses from advanced fundamentals to methods, technologies, systems, and finally independent research. The strong emphasis on thermodynamics, fluid mechanics, turbomachinery, and systems integration directly supports the goal of producing graduates with deep physical understanding and transferable methodological skills. The gradual specialisation into Energy and Aviation Propulsion profiles is logically scheduled and pedagogically sound, allowing students to build a shared knowledge base before departing. Thus, the curriculum regarding its structure and content is fit to enable students to achieve the intended learning outcomes, as it follows a coherent, modular, and research-oriented design. The common first semester in Bochum provides a reasonable foundation for managing heterogeneous student backgrounds, while the subsequent profile differentiation allows for focused competence development without excessive early specialisation. The inclusion of systemic, holistic perspectives across power generation and propulsion closely aligns with the learning outcome of avoiding compartmentalised knowledge. The mandatory mobility structure is well integrated into the curriculum design and appears feasible from an organisational and workload perspective.

The European Credit Transfer and Accumulation System (ECTS) is properly applied; the defined workload of 27 hours per credit and the transparent distribution of credits across modules and semesters are appropriate and clearly documented in the draft of the examination regulations. However, the hours per credit point stated in the module handbook largely do not correspond to this specification; in some cases, 30 or even 36 hours per CP are estimated. The experts assume that these are merely editorial errors and that necessary adjustments will be made before the programme starts so that regulations and documentation are consistent (**finding 2**). With a total of 120 credits over four semesters, the programme constitutes a full Master's degree in line with European and national requirements. Mechanisms for monitoring the workload and study progression are described and appear appropriate to identify potential issues during programme implementation. Workload peaks and stress risks are explicitly recognised, which suggests active reflection on student workload that is already given; based on this, it is to be expected that adjustments will be made in the future, if necessary.

Conclusion

The criterion is fulfilled.

4. Admission and recognition

4.1 The admission requirements and selection procedures should be appropriate in light of the pro-gramme's level and discipline.

4.2 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.

Description

As explained in the SER, candidates must have a Bachelor's degree in Engineering Science with proven experience and knowledge in Thermodynamics, Mathematics, Physics, Chemistry, Fluid Mechanics. In addition, English language proficiency at least at B2 level according to the Common European Framework of Reference (CEFR) must be proven by an international certificate (e.g., TOEFL).

Applicants that hand in complete documents on time and meet the requirements are then chosen based in their individual fit to the programme (type and level of academic qualifications, motivation and concern for topics taught in MENTOR, type and level of research experience, etc.) and an admission test. The Admission Committee is responsible for the selection and admission of students in accordance with the joint procedures and criteria specified in the Examination Regulations. Selected applicants will receive an admission notification with information about enrolment. The related stipulations are defined in the Partnership Agreement and the Examination Regulations.

According to the SER, recognition is carried out according to the Lisbon Recognition Convention for credits, competence and professional skills from previous studies if they are comparable. A corresponding regulation can be found in § 13 "Recognition, transferring, exemption of academic credits, examinations and prior learning" in the Examination Regulations.

Expert evaluation

The admission requirements and selection procedures appear appropriate and well aligned with the programme's level and disciplinary focus. Requiring at least a first cycle (EQF level 6) degree in a relevant engineering or science discipline, together with demonstrated knowledge in core subjects such as thermodynamics, mathematics, physics, and fluid mechanics, ensures that admitted students possess the necessary academic foundation for master-level studies. The English language requirement at CEFR level B2, supported by internationally recognised certificates, is suitable for a programme delivered fully in English and supports academic success in an international learning environment. The criteria-driven selection process, which considers academic qualifications, motivation, research and professional experience, and performance in an online admission test and including online interviews, reflects a comprehensive and merit-based approach consistent with international Master's programmes. The structured, multi-step procedure managed by the Joint Admission and Examination Committee contributes to transparency, consistency, and fairness in decision-making. The involvement of the joint committee and the clear, defined procedures in formal regulations further support the appropriateness of the selection framework for the joint degree programme. However, care should be taken to ensure that the weighting of the individual components of the application process is clear to applicants. Motivational letters in particular can be biased in their assessment, not only because of the possibility of generating them using AI, and may not be the best way to find the right students. The extent to which the planned selection process is viable remains to be seen when the programme will have started.

The provisions for recognition of qualifications and prior learning are applied in line with the principles of the Lisbon Recognition Convention and its subsidiary documents. Recognition is granted unless substantial differences in competences are demonstrated, and the process explicitly avoids a schematic comparison, favouring an overall assessment of learning outcomes that is fully consistent with the Lisbon principles. The

possibility to recognise both prior higher education achievements and relevant non-university learning, up to a defined maximum, demonstrates openness to diverse learning pathways while safeguarding academic coherence. The inclusion of recognised grades where grading systems are comparable, and the use of a “pass” qualifier where they are not, reflects established European good practice. Overall, the recognition framework is comprehensive, fair, and legally sound, and it adequately supports student mobility and progression within the European Higher Education Area.

Conclusion

The criterion is fulfilled.

5. Learning, teaching and assessment

5.1 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.

5.2 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.

Description

The Examination Regulations include stipulations on aspects such as application, selection and admission procedures, formats of teaching and assessment, grade formation, compensation, credits, the Master thesis, and the awarding of the diploma.

In the Module Handbook, each module is documented including the intended learning outcomes, the teaching methods and learning formats, programme and training activities, workload and corresponding credits, and modes of assessment.

The examination performance types comprise written examinations, oral examinations, seminar contributions, presentations, essays, student projects, practical examinations, or colloquium lectures. The teaching methods include lectures, readings, discussions, design-based learning, system thinking, peer learning, learning by doing, challenge-based learning, face-to-face and virtual team teaching of lecturers from different partner universities. Research-oriented teaching is explained to be the overarching basis of the programme’s teaching approach.

Interaction between students from different countries is supposed to be emphasised with the aim to create an international mindset and an appreciation of different cultures. Intercultural awareness and cultural sensitivity are planned to be enhanced, and skills such as teamwork, problem solving, language competencies, and communication skills are supposed to be further developed.

The Joint Admission & Examination Committee (AEC) will be installed as a coordinating, monitoring, and reviewing institution in addition to the local examination committees. The AEC is responsible for the programme’s overall assessment standards and assessment regulations, has the authority to issue the thesis topics and to decide on fraud, plagiarism cases, as well as other matters as specified in § 14 of the Examination Regulations.

As specified in § 6 of the Examination Regulations, graded or ungraded module examinations can be provided in the form of a written examination, an oral examination, a contribution to a seminar, a presentation, an essay, a project, a practical examination, or a colloquium lecture. The Master thesis has to be assessed usually by two examiners from at least two different universities and needs to follow the regulations as specified in § 17–21 of the Examination Regulations. Where there are alternative options, the final form of the examination performance

and the resources permitted are supposed to be announced at the start of the semester during which the module takes place. For the grades obtained by MENTOR students, a conversion scheme was agreed upon.

Expert evaluation

The programme is well designed to correspond with the intended learning outcomes, as learning, teaching, and research are closely interconnected and consistently aligned through a structured, modular curriculum. The applied learning and teaching approaches, particularly the strong emphasis on research-oriented teaching, challenge-based learning, active learning, and peer learning, are well-suited to achieving the intended academic competencies. The combination of traditional and innovative, student-centred teaching methods supports deep learning, critical thinking, and practical problem-solving combined with practical training at specialised facilities, and collaboration with industrial stakeholders. The examination regulations and assessment methods are closely aligned with the intended learning outcomes, following the principle of constructive alignment as described in the Joint Programme and Module Handbook. A broad range of assessment formats ensures that both theoretical knowledge and practical, research-based competencies are adequately evaluated. Consistency across all partner institutions is ensured through the Joint Admission & Examination Committee, the joint Master thesis supervision from at least two universities, and annual quality monitoring. From an industry perspective, the inclusion of project-based and application-oriented assessment formats is particularly valuable.

The programme respects and addresses the diversity of students and their needs, especially given different cultural backgrounds, through international collaboration, intercultural exchange, and mobility among partner universities. Intercultural awareness, teamwork, communication skills, and cultural sensitivity are embedded in the learning environment and learning activities. Student diversity and needs are comprehensively addressed through welcome events at each partner university, language courses, dedicated local coordinators, counselling services, disability accommodations, while compulsory mobility across four countries naturally enhances intercultural awareness. Transparent administrative structures, guidance throughout the student journey, and supportive measures for students with disabilities, family responsibilities, or other special circumstances further demonstrate a commitment to equal opportunities. The diversity of teaching methods and the international learning environment are well-suited to the heterogeneous and mobile student cohort.

Conclusion

The criterion is fulfilled.

6. Student support

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

Description

Student support is supposed to be offered in a combination of existing services at each partner university and new offers created exclusively for MENTOR students. To inform the MENTOR students, it is explained that they receive the Programme and Module Handbook, the Student Handbook and the Examination Regulations, information on the start dates and the welcome event of the MENTOR programme as well as information on extracurricular language courses after admission.

At the beginning of the first semester at RUB, a welcome and information event for MENTOR students is planned to take place in which the students can meet the MENTOR Directors, lecturers and coordinators from the different partner universities. The event will be accompanied by informal events to socialise and to get to

know the local context. It is explained in the SER that the international offices at the other partner universities also coordinate services such as introduction sessions, language courses, university guidance service, social assistance service, support in contracting private health insurance, funding opportunities, sports and cultural activities, etc. Information on hosting facilities and services regarding visa applications as well as general matters related to studying are said to be published on each institution's website.

Regular online and face-to-face counselling is supposed to be offered, especially regarding the planning and decisions of individual study plans and mobilities. Thus, it is explained in the SER that the importance of counselling and support should be made clear to students from the start. The MENTOR Programme Manager is the first point of contact and can direct students to specialised student support services (if necessary) and may mediate in case there are any conflicts involving more than one partner university. If certain problems arise at one of the partner universities, the students can contact the local Programme Coordinator. At each partner university, student and alumni support services or career centres offer students guidance with regard to the student's transfer into employment.

As stated in the SER, the MENTOR Consortium strives for equal and inclusive access for students, mobile staff and invited scholars with individual needs linked to long-term physical, mental, intellectual, or sensory impairments. Existing services for students are said to be made available at each campus, and students with disabilities will be granted opportunities to take examinations with assistance or extra provisions. Also, maternity protection as well as family and care obligations are considered. The related regulations can be found in § 10 of the Examination Regulations. Applications can be made to the Joint Examination Committee. Service centres for students with disabilities at the partner universities can provide support.

Expert evaluation

The student support services in the MENTOR programme contribute to achieving the intended learning outcomes by providing a stable academic, social, and administrative framework that enables students to focus fully on their studies. Comprehensive orientation measures and early access to key academic documents ensure that students understand programme structures, requirements, and expectations from the outset, supporting effective learning progression. Continuous counselling and personalised study-planning guidance help students make informed decisions about mobility paths and course choices, directly supporting the successful completion of learning outcomes. The availability of a dedicated programme management and local MENTOR coordinators ensures consistent academic and administrative support across institutions, which is essential in a joint programme that includes several phases of mandatory student mobility. Language learning opportunities enhance the students' ability to integrate into local academic and social environments. Nevertheless, students may encounter cultural challenges in the respective country or in general. The different study cultures can cause difficulties in adapting and may require close support. All coordinators should keep this in mind from the very beginning. To support students by offering low-threshold contact points at each university involved in the programme, it is recommended to involve student coordinators on each site (**finding 4**).

Career guidance and employer engagement activities align academic learning with professional competencies, reinforcing outcome-oriented education. Overall, the integrated and mobility-aware support system effectively addresses the specific needs of mobile students. Academic counselling, administrative support, and integration measures are clearly described and appear sufficient to support student success. From a labour-market perspective, the inclusion of career guidance and employability-oriented support is positive and aligns with the programme's stated objectives.

However, short-term accommodation for mobility periods of around six months may be challenging for MENTOR students. While some partner institutions provide dedicated support to assist international students in finding housing, others follow standard procedures designed primarily for domestic students. This variation could present a potential obstacle to the smooth implementation of the MENTOR mobility programme. Therefore, the experts

recommend paying particular attention to ensuring that students receive adequate support in finding housing from the start of the programme. After a few years, a robust network will surely have been established, enabling students to help each other and share recommendations on reliable landlords and good offers. Until then, however, the local coordinators should pay particular attention to this potential challenge (**finding 3**). This will probably be a special challenge for students that will have to opportunity to go to San Diego. The experts therefore recommend keeping the special circumstances there in mind (costs of living, finding housing, rather no reliable public transport) and that an appropriate scholarship is needed; however, the opportunity for students is excellent.

Conclusion

The criterion is fulfilled.

7. Resources

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

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

Description

At each partner university, academic staff distinguished in research in different disciplines relevant for the programme (such as Numerical Methods, Fluid Mechanics, Energy Technology, Aerospace Engineering) is explained to be involved. In total, fourteen professors and two post-doc lecturers are listed as teaching staff. One professor from RUB is appointed as Programme Coordinator. For the organisational day-to-day management and coordination of the programme, administrative staff is involved, including the Programme Manager at RUB and a Local Coordinator at each partner university.

Since MENTOR students are enrolled at all partner universities, it is explained in the SER that they have access to all resources available to local students, such as learning and ICT-facilities on campus (seminar rooms and lecture halls, libraries, workstations and research lab facilities, free eduroam WiFi, sports facilities, student counselling, supporting social services, social facilities). Additionally, students will be granted access to a joint online-learning environment in which they are supposed to have access to supporting material of the modules (including recorded lectures), primary source material, assessment guidance, reading lists and digitised articles, additional practical exercises, and other materials. This is said to also include access to Massive Open Online Course.

Expert evaluation

The MENTOR programme is supported by sufficient and highly qualified academic staff whose expertise directly aligns with the programme's core disciplines and intended learning outcomes. The involvement of distinguished scholars across key research areas ensures strong subject coverage and research-led teaching at all partner universities. The international composition and research standing of the academic staff further strengthen the programme's capacity to deliver advanced, interdisciplinary education in a joint setting.

While the programme is primarily academically driven, the inclusion of associated partners and externally oriented expertise strengthens its relevance for industry. The experts anticipate that this connection will be further strengthened in the future. Representatives from renowned companies with whom the experts were able to exchange during the site visit pointed to the support that has already been agreed upon. This will give students the opportunity to perform their Master's thesis in companies, enabling them to quickly transition into the local job market after graduation.

Academic governance is ensured through the appointment of MENTOR Directors at each institution, which supports consistency and coherence across the programme. Administrative and coordination structures are adequately staffed and well defined. The pooling of complementary facilities and teaching environments across the partner universities provides students with access to excellent infrastructure that supports high-level learning and research activities. Students have access to a high-quality learning infrastructure including seminar rooms, lecture halls, libraries, research labs, free WiFi, and access to joint online learning environments with recorded lectures, MOOCs, and virtual resources. Students enrolled at all partners gain access to resources available to local students, including counseling services, sports facilities, and some childcare options.

Overall, the combination of qualified staff, robust coordination mechanisms, and high-quality facilities is adequate and well-suited to achieving the intended learning outcomes of the MENTOR programme.

Conclusion

The criterion is fulfilled.

8. Transparency and documentation

8.1 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.

Description

All relevant information about the programme such as admission requirements and procedures, the course catalogue, examination and assessment procedures etc. are explained to be made accessible via the MENTOR website, including the Programme and Module Handbook and the Study and Examination Regulations.

The Programme and Module Handbook provides information on the structure of the programme, the mobility options, and the standards and requirements regarding the Master thesis and the degree. Moreover, the Student Handbook provides practical information (e.g., related to housing) and introduces each local context to students.

The core management tools used for the administration of the programme at RUB are eCampus and the Information Management System (IMS), a central web portal with different services, e.g., management portal, financial information, decentralised budget information. In addition, the consortium explains in the SER that it will set up a joint document management and student data exchange system to grant the Local Coordinators access to relevant documents and information for the management of the programme.

Expert evaluation

Relevant information about the MENTOR programme is comprehensively documented and made easily accessible through a centralised website and clearly structured official documents, supporting transparency for prospective and enrolled students. The availability of key materials, such as the Programme and Module Handbook and the Study and Examination Regulations, on the internet ensures that mobile students can plan their studies and mobility paths in an informed manner. The commitment to continuously updating the documentation based on student evaluations demonstrates responsiveness to student needs, including those arising from mobility experiences. Clear rules on confidentiality, intellectual property, and the shared use of resources provide legal clarity and consistency across the partner universities, which is particularly important in a joint programme.

The planned online publication of Master's theses and the integration into an alumni network further enhance academic visibility and continuity beyond graduation. Overall, the structured, accessible, and mobility-aware

information provision adequately supports mobile students in navigating academic, administrative, and regulatory aspects of the programme.

Conclusion

The criterion is fulfilled.

9. Quality assurance

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

Description

The joint quality management includes established instruments of the individual partners and new joint instruments such as the External Advisory Board. The responsibility for the joint quality management lies with the Quality Assurance Committee. It has developed a quality handbook on the programme's evaluation processes, outlining the procedures and instruments for evaluation. The students will be asked to give questionnaire-based feedback on all modules each semester, and a survey on service quality and regular graduate surveys are planned as well as collecting benchmark data on student experience to compare student experience across all partner institutions and identify areas of concern. It is explained in the SER that the experience and findings with the first cohort will be included in the development of the programme. Also, regular feedback from members of the Programme Advisory Board is supposed to be considered.

The Joint Admission and Examination Committee will be in charge to report annually on the number of examinations taken and passed, and possible recommendations resulting from the analysis of the data. This is supplemented by evaluation results that the partner universities collect as part of their internal quality management. The results shall be cross-checked between the partners and then be discussed in the Quality Assurance Committee. It is explained in the SER that the MENTOR faculty, i.e., all academics teaching in the programme, convene once per year to discuss ways to enhance content and cohesion of the curriculum. This annual internal programme review, overseen by the MENTOR Board of Directors and the External Advisory Board, is supposed to identify strengths and weaknesses of the programme and plans for improvement (including analysis of programme statistics, student evaluations of modules, staff evaluations, response to any issues, action plan with feedback to the programme team). Measures taken are supposed to be discussed and agreed upon by the Programme Advisory Board, involving its student members. Each measure or change is said to be checked for effectiveness in the next evaluation cycle and modified again, if necessary.

Expert evaluation

The MENTOR programme has established a comprehensive and robust quality assurance framework that is fully aligned with the ESG and the European Approach for Quality Assurance of Joint Programmes. The use of a structured "plan-do-check-act" cycle ensures systematic monitoring and continuous enhancement of learning, teaching, and assessment across all partner institutions. Clearly defined governance structures, including the Academic Study Board, Programme Advisory Board, and Joint Admission and Examination Committee, support coherent decision-making and shared responsibility across institutions. The combination of internal and external quality assurance instruments allows for evidence-based evaluation of programme delivery, student performance, and service quality. Strong and formalised student involvement in assessments, surveys, and advisory bodies ensures that student perspectives directly inform quality enhancement measures. Overall, the integrated and transparent QA system is well-suited to maintaining programme coherence, addressing joint and mobility-related challenges, and supporting continuous improvement of the

MENTOR programme. Including external expertise, also from the industry, additionally ensures that requirements and experiences with students of the programme in industry can be incorporated into its further development. From an industry perspective, the involvement of external stakeholders through advisory structures is a positive element, supporting continuous alignment with labour market needs.

Conclusion

The criterion is fulfilled.

V. Recommendation of the panel of experts

The panel of experts recommends accrediting the study programme “Methods and Technologies for Sustainable” offered by Ruhr-University Bochum (Germany), École Centrale de Lyon (France), Université de Liège (Belgium), and University of Naples “Federico II” (Italy) without conditions.

Commendation:

The experts have gained positive impressions on the programme that is well documented. The discussions on site were helpful to answer questions the experts had in advance. Therefore, the experts confirm that MENTOR is a well-structured, planned and balanced programme that was discussed with different stakeholders in advance and thus different perspectives and requirements were already taken into account during the planning stage. Of particular relevance are the agreements that have already been made with companies to enable the Master's thesis to be performed in practice, as well as at one of the highly qualified institutions in the consortium. This strong academic background and industry support will give graduates good job opportunities, well aligned with the needs of the industry and academia. The inclusion of mandatory mobility phases will have a positive impact on the personal and academic development of MENTOR students, and the programme will have an international and intercultural student body which also have a positive influence on the development of students' skills.

Findings:

1. When revising the intended learning outcomes after the programme has started and some experiences were gained, it is recommended to check them for redundancies, and aspects of sustainability should be highlighted more clearly.
2. The information in the module handbook regarding the number of hours per credit should be edited to make clear that 27 hours are estimated per CP.
3. From the start of the programme, particular attention should be paid to ensuring that students receive adequate support in finding housing in each mobility phase.
4. In order to provide students with a low-threshold point of contact, it is recommended that a student coordinator/contact person be established at each university.