Decision of the Accreditation Commission of AQAS

on the study programme European Master of Medical Technology and Healthcare Business (EMMaH) (M.Sc.)

offered by **Hochschule für Angewandte Wissenschaften Hamburg (HAW), Germany in cooperation with** University of Lille 2 **Health and Law (ILIS), France**, Instituto Politécnico Do Porto – **Escola Superior De Technologia Da Saúde Do Porto (IPP), Portugal**

Based on the report of the expert panel, the discussions of the Accreditation Commission in its 73rd meeting on 3/4 December 2018, and the circulation procedure of 1 February 2019 the Accreditation Commission decides:

1. The study programme **"European Master of Medical Technology and Healthcare Business" (EMMaH)** with the degree "**Master of Science"** offered by **Hochschule für Angewandte Wissenschaften Hamburg (HAW)**, in cooperation with University of Lille 2 Health and Law (ILIS), France and Instituto Politécnico Do Porto – Escola Superior De Technologia Da Saúde Do Porto (IPP), Portugal is accredited according to the criteria and procedures defined in the European Approach for Quality assurance of Joint Programmes.

   The accreditation is **conditional**.

   The study programme essentially complies with the requirements defined by the European Approach for Quality assurance of Joint Programmes and the European Qualifications Framework (EQF) in their current version. The required adjustments can be implemented within a time period of nine months.

2. The condition has to be fulfilled. The fulfilment of the conditions has to be documented and reported to AQAS no later than **30 November 2019.**

3. The accreditation is given for the period of **six years** and is valid until **30 September 2025**.

Condition:

1. The function and responsibilities of the "Joint Committee" have to be defined and documented transparently in a binding way.

The conditions were fulfilled on time.
The Standing Commission confirms this with its decision of 17.02.2020.

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

1. Elective courses/modules should be integrated in the curriculum in order to allow a stronger individualization of the qualification and to strengthen labour market orientation.
2. Bridging courses for technical subjects should be offered prior to students taking the respective modules.

3. A more joint approach in the selection procedure should be implemented to further increase fairness, transparency and equality.
4. The support for students to find accommodation in Porto should be improved.
5. Substitutes for key positions in the programme should be defined in order to prevent delays in case of absence of duty.

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

Experts' Report

on the study programme European Master of Medical Technology and Healthcare Business (EMMaH) (M.Sc.)

offered by **Hochschule für Angewandte Wissenschaften Hamburg (HAW), Germany in cooperation with** University of Lille 2 **Health and Law (ILIS), France**, Instituto Politécnico Do Porto – **Escola Superior De Technologia Da Saúde Do Porto (IPP), Portugal**

Visit to the university: 15–16 November, 2018

Panel of Experts:

Prof. Dr. Hendrik Jürges	University of Wuppertal (Germany), Schumpeter School of Business and Economics, Chair for Health Economics and Management
Prof. Dr. Holger Timinger	Landshut University of Applied Sciences (Germany), Institute for Project Management and Information Modelling (IPIM)
Dr. Thorsten Jürgens	Olympus Surgical Technologies Europe, Department Manager; Hamburg (Germany) (representative of the labour market)
Sara Nogueira	Ph.D. student at University of Mainz (Germany) (student expert)

Coordination:

Ronny Heintze	AQAS, Cologne, Germany

I. Preamble

The accreditation procedure covers a Master programme at state (public) or state (publicly) recognised universities.

All Bachelor and Master programmes must be accredited in Germany by law, as laid down in the statutes of the Standing Conference of the Ministers of Education and Cultural Affairs of the Federal States (Länder) in the Federal Republic of Germany (Kultusministerkonferenz).

Each federal state implements these rules and regulations in accordance with their own respective Higher Education Law.

The evaluation of the study programme was carried out in accordance with procedures and standards defined in the European Approach for Quality Assurance of Joint Programmes.

II. Accreditation procedure

This report results from the external review of the master programme in “European Master of Medical Technology and Healthcare Business (EmmaH)” offered by HAW Hamburg, Germany in cooperation with Instituto Politécnico Do Porto – Escola Superior De Technologia Da Saúde Do Porto (IPP), Portugal, and University of Lille 2 Health and Law (ILIS), France.

1. Criteria

The assessment of the programme is in accordance with the European Approach for Quality Assurance of Joint Programmes, which has been approved by the European Higher Education Area ministers in May 2015.

2. Approach and methodology

Initialisation

HAW Hamburg mandated AQAS to perform the accreditation procedure in February 2017.

The university prepared a Self Evaluation Report (SER). In October 2017, the university handed in a draft of the SER together with the relevant documentation of the study programme and an appendix.

The appendix included an overview over statistical data of the student body, CVs of the teaching staff, information on student services, core information on the main library and undergraduate academic regulations.

The accreditation procedure was officially initialised by a decision of the AQAS Accreditation Commission on December 2017.

AQAS assessed the SER draft for completeness, comprehensibility and transparency. The final version of the SER was handed in in March 2018.

Nomination of the expert panel

Composing the expert panel follows the stakeholder principle. Consequently, representatives from the respective discipline/s, the labour market and students are involved. Furthermore, AQAS follows the principles for the selection of experts by the European Consortium for Accreditation (ECA).

The Accreditation Commission nominated the expert panel in June 2017. AQAS informed the universities thereafter about the members of the expert panel and they did not raise any concerns against the composition of the panel.

Preparation of the site visit

Prior to the site visit, the experts reviewed the SER to get an overview of upcoming points of discussion during the site visit.

Site visit

After reviewing of the Self Evaluation Report, the site visit to the university took place from 15–16 November 2018. On site, the experts interviewed different stakeholders in separate discussions, such as the management of the university, the programme management, teaching and other staff as well as students, and consulted additional documentation as well as examples of graded work from students' achievements. The visit concluded with presenting preliminary findings by the experts to the university's representatives.

Report writing

Following the site visit, the expert group drafted the following report assessing the fulfilment of the European Approach criteria for programme accreditation. The report includes a recommendation to the Accreditation Commission. The report was sent to the university for comments.

Decision

The experts' report, together with the comments by the university, form the basis for the AQAS Accreditation Commission to decide regarding the accreditation of the programmes. Based on these documents, the Accreditation Commission decided on the accreditation in February 2019. AQAS forwarded the decision to HAW Hamburg and the cooperation partners. The university had the right to appeal against the decision or any of the imposed conditions.

In March 2019 AQAS published the report and the accreditation result of the accreditation along with the names of the panel of experts.

III. General Information on the Universities

EMMaH is an international joint Master programme developed and offered by the three universities Hochschule für Angewandte Wissenschaften Hamburg (HAW), Instituto Politécnico Do Porto – Escola Superior De Technologia Da Saúde Do Porto (Portugal), and University of Lille 2 Health and Law (France). The programme is coordinated by HAW Hamburg. The programme leads to a Joint Degree from the three participating universities.

The EMMaH programme at the HAW Hamburg is offered by the Department of Biomedical Engineering as part of the Faculty of Life Sciences at the HAW Hamburg. EMMaH is the first faculty's programme to be organised by universities from three different countries.

The field of Biomedical Engineering covers Bachelor and Master programmes such as Biomedical Engineering, Hazard Control, and Rescue Engineering for the Bachelor degree courses and Biomedical Engineering and EMMaH for the Master degree. The major focuses of research are topics like pain research, toxicology and environmental analysis or imaging processes in medicine. At the moment the Department consists of 18 professors, research and technical assistants and employees, and personnel from external funds.

At Université de Lille 2 Health and Law the programme is based in the Faculty of Engineering and Health Management (ILIS). The main focus of the core curriculum is on current healthcare issues such as elderly care, hospital quality management, clinical research or sales of drugs and medical devices. The faculty's objective is to contribute to the development of society, aiming for the creation, transmission and dissemination of culture and knowledge through teaching and learning in health, food and environment engineering related areas. As highlighted in the Self Evaluation

Report, the university merges together with its sister universities Lille 1 and 3 in 2018 to reinforce the universities national and international recognition.

In Portugal, EMMaH is part of the largest Portuguese higher education institution in the area of healthcare technologies, the School of Health, which is part of the Instituto Politécnico do Porto (IPP). Having 2.200 students, more than 300 teaching staff members, 12 undergraduate degrees and seven Master's degrees, the School of Health is the third biggest department at IPP.

Due to the willingness to extend an already existing connection, the HAW Hamburg and Université de Lille 2 started to seek for a third partner in 2013. In 2015 the joint programme EMMaH was designed and the resulting programme was developed.

The implementation of EMMaH as a cross-country programme has been regulated by the cooperation agreement of October 2016 between the three participating universities, which was signed in December 2016.

IV. Eligibility of the study programme

Description

The European Master in Medical Technology and Healthcare Business (EMMaH) is organised jointly by the three higher education institutions HAW Hamburg, ILIS and IPP. The programme starts each year in September (2017 for the first time). The three institutions explain that they work together closely as agreed in the cooperation agreement and the three partners agreed on a common course programme. The course programme shall reflect the comprehensive strength of each partner university. Each partner institution decides its own study and examination regulation based on the common course programme. Graduates will receive the joint degree "Master of Science" of all three partner institutions. The education language of the joint master programme is English. Students study their first semester at HAW Hamburg, their second at Escola Superior de Saúde in Porto (IPP) and the third at ILIS in Lille. The fourth and last semester will be again at their home institution in order to write the master thesis.

EMMaH students will remain a member of their home institution for the full duration of the programme. According to the SER, tuition fees will only be acquired for students from IPP but matriculation fees or semester contribution have to be paid each semester by every student in line with the country they are studying in that particular semester.

The HAW Hamburg is classified as a state university of the Free and Hanseatic City of Hamburg, whereas the University of Lille 2 has a scientific, cultural and vocational character. IPP's legal status is statutorily defined according to the legislation in force in health technologies areas.

The cooperating institutions agreed on relevant issues concerning a jointly offered Master's programme in a Consortium Agreement. Each institution will nominate two persons to a joint committee, which meets at least once a year. The members of the committee are supposed to revise the content of the joint programme and assure the programme's quality by appropriate means. Any changes of the content of the joint programme as well as changes to common study and examination regulations shall be confirmed by the committee.

Experts' Evaluation

As documented in the SER as well as explained during the site visit all three institutions are equally involved in the design and delivery of the study programme. Courses take place in Hamburg, Porto and Lille and have equal weight in the curriculum (30 CP each). Course content taught at the three institutions shows strong complementarity covering engineering, medical and economic aspects underlining a holistic approach. The EMMaH programme builds on a long-standing cooperation between two nodes, Hamburg and Lille, and adds a third partner that brings

different perspectives in terms of country, culture, and content. The programme is part of the international strategy of the three universities, aiming to increase research connections and increase the number of incoming and outgoing students, and to broaden the view of life of students. Overall, the programme clearly is more than just the sum of the three partners' parts. Thus, eligibility of the programme to be accredited as a joint European programme is clearly fulfilled.

The balanced management and organization are reflected in the fact that the coordinating body of the programme, the so-called Joint Committee, has two members from each institution. It has a central role in all strategic and academic decisions, including decisions on the admission of students. Yet the on-site visit has shown that considering the importance of this body, its responsibilities, tasks and duties should be made more explicit and transparent. Article 5 of the cooperation agreement contains too little information and should be amended in a more specific, publicly available document **(Finding 1)**. Other relevant and required aspects of the cooperation agreement are appropriately designed and fit for purpose.

Considering the status of the contributing institutions the expert panel recognizes that all three institutions are recognized as higher education providers in their respective countries, and their legal frameworks do not prevent them from participating in a joint programme. The awarded degree of a Master of Science is accepted in all three academic systems of the participating countries.

Conclusion

The criterion is substantively fulfilled. However, the tasks and responsibilities of the Joint Committee should be defined more explicitly in the cooperation agreement.

V. Learning outcomes

Description

The EMMaH learning outcomes are defined as follows. As stated by the universities, graduates will be able to solve complex problems and acquire new knowledge fields by using scientific methods. Graduates also shall have the ability to isolate problems and apply a scientific approach in order to develop their own solutions. Regarding these main learning objectives, the joint master programme intends on a general basis to promote educational experiences on a high European degree education level and, thus, the ability to adapt to the challenges of the international market. Since the programme does not target only research but also companies' production divisions or technical functions in research institutes as a working field, the master programme aims at developing skills of management and products marketing and combine them with the applications in the medical field.

According to this, the SER allocates skill acquisition goals such as knowledge and comprehension, analysis of objectives and tasks, or reflection and communication to the different modules of the EMMaH programme. A target matrix with a general overview has been provided.

Applying an interdisciplinary approach, the programme has a different range of learning aims which enables the students to work in health care institutions, industry or academia in working fields such as Innovation management, controlling or project management. Being a new programme, which has started in winter semester 2017/18, EMMaH cannot display any numbers of graduates at the moment.

Experts' Evaluation

Based on the information provided in the SER and the on-site visit, the study programme is well designed. A broad range of relevant competencies will be acquired by the students. The module catalogue lists appropriate technical, economical and in general professional competencies which are required by the graduates to be able to work in the specified fields. The learning outcomes

comprise knowledge, skills and competences in the respective (broad) disciplinary field. The on-site visit included discussions with lecturers and students and visits of laboratories that helped understanding the links between the different elements even better. These demonstrated that the listed competencies and learning outcomes are actually achieved in the semesters that are already running. The experts furthermore conclude that generally, the exams are appropriately designed in order to assess the specified learning outcomes.

A specific characteristic of the study programme under evaluation is the international setting. Right from the beginning, students are taught in English. They are required to study at least 2 semesters abroad as the consortium is set up of three partners. This setting supports the acquisition of international and intercultural as well as language competencies which fits perfectly into the ambition of future graduates to work in an international market like the medical and healthcare industry.

The levels of competencies are found to be appropriate for a master programme and are in accordance with the Framework for Qualifications in the European Higher Educational Area as well as the respective national qualification frameworks.

The result of the equal participation of the three partners with their different profiles is a very broad qualification of graduates. A potential downside of this equal contribution is that it is less clear at first sight what kind of jobs within the medical technology industry the typical future graduate would be working in, i.e. more on the engineering or more on the management side. It seems that more focus in terms of labour market prospects could benefit the potential match between applicants and the programme. While this observation does not contradict the level of the qualification it was understood that the graduate survey would also serve to sharpen the focus of the programme in that respect. Considering the curricular structure, currently the programme lacks the possibility to choose between elective modules. It might be wise to integrate some elective courses in order to allow more individual profiles for graduates **(Finding 2)**. This would allow keeping the broad profile while at the same time strengthening labour market orientation of the qualification on individual level.

Conclusion

The criterion is fulfilled. The integration of elective modules is recommended.

VI. Study programme

Description

EMMaH is a consecutive two-year master programme. The teaching language of all modules will be English. The programme applies the European Credit Transfer System (ECTS) with a total of 120 credit points. The full-time study is designed for four semesters. Each semester students have to enrol at least 30 credit points. One CP is the equivalent to 30 work hours. The work load calculation is defined in the module description and module exams complete every module. In the case that a student fails one module, he or she has the right to repeat the exam during the next semester at another partner institution. Every student has three attempts for each module. Not having passed a module three times is considered as a final failure. HAW's examination regulations cover all issues regarding the repetition of examinations.

The curriculum contains the following educational blocks:

Faculty of Life Sciences of Haw Hamburg (30 ECTS credits)

Escola Superior de Saúde do Politécnico do Porto (30 ECTS credits)

Faculté Ingénerie et Management de la Santé at Lille (30 ECTS credits)

Master thesis (30 ECTS credits).

In accordance with national and institutional regulations, the institution is responsible for the grading scale for each module. The national grades will be translated into the indicative ECTS system. Graduates of the programme will receive one joint diploma which will be issued in English and will contain the logos of the three institutions of the programme. Students will also receive a Diploma Supplement.

Experts' Evaluation

The programme of EMMaH is described in a transparent way, and the goals of the course of study include both professional and soft-skills. The involvement of three universities as well as different faculties also ensures the development of cross-disciplinary qualifications.

Based on the reviewed course content, work results (seminar papers, copies of examinations) and the student interviews, the volume and level of the study programme seemingly meet the expectation of a curriculum with 30 ECTS credits per semester.

The three institutions have created means to deal with the additional complexity and challenges arising from the repeated re-location of the students. Vital for a smooth development of competencies it is also possible to repeat examinations from a previous semester on any campus of the EMMaH programme. Furthermore, it should be positively mentioned that students can select any professor as supervisor of their master thesis independent of their home institution.

The student interviews indicated consistently that the interdisciplinary set-up is requested and accepted by the students. However, it was also mentioned by a majority of students that parts of the technical study subjects in Hamburg present a challenge for those students who enter into the programme with a non-technical bachelor's degree. It seemed to the experts that this challenge was already discussed within the consortium, and the experts clearly support the intention to introduce bridging courses as they will help to increase student success in the technical subjects **(Finding 3)**.

Within the self-evaluation report and also during the interviews, the programme was described with the intention to "increase the employability over a huge spectrum of positions and responsibilities, for example in the field of Research and Development, Product Management, Marketing and Sales, Quality Management, Maintenance and Repair, Training and Education, Safety Advisor and Hospital Planning". Clearly this is a very broad spectrum of qualification and preparing graduates effectively and evenly for each of these fields is challenging. At the same time the interviews with teaching staff and students indicated that students who enroll in the programme seek a prospective employment in the sector of product management and marketing, which fits to a specific interpretation of the layout of the programme. The panel believes that following that no later than with the first graduate survey the programme management should critically review if certain parts of the broad programme should be readjusted in order to sharpen the profile of the degree towards product management and marketing of the health care industry. Also, aspects like artificial intelligence/machine learning that are not yet part of the programme should be considered for the future development of the programme as they will clearly be of importance in the future career fields of graduates.

Conclusion

The criterion is fulfilled. The offer of a bridging course for non-engineering students before the start of the semester in Hamburg should be considered.

VII. Admission and recognition

Description

As stated in the SER, the access requirements for prospective students for the EMMaH programme is in accordance with the general admission regulations of all the participating universities. A student should have completed one of the HAW Hamburg undergraduate degrees Medical Technology, Rescue Engineering or Hazard Control, or an alternative undergraduate course with an equivalent content or an undergraduate course in a technical or scientific discipline with at least 180 credit points each.

Additionally, HAW Hamburg points out that a prospective student candidate must show certain English competencies which have to be demonstrated by a certificate or a recognized English test such as TOEFL, IELTS or CAE. Furthermore, international students who did not complete their undergraduate course in Germany must demonstrate the successful participation of a language course “German as a foreign language” with at least 200 teaching units.

According to the universities, the criteria of the selection procedure are three-parted. Study places are awarded according to the result of the undergraduate degree (regarding the total score), specialist knowledge in terms of course content and special abilities based on professional knowledge. A ranking list is prepared according to the result of the selection criteria. Nevertheless, and in alliance with the cooperative form of EMMaH, each institution elects up to five students to participate in the joint master programme which leads to a total number of 15 students each year.

The selection of prospective students will be made by a selection committee which consists of a study advisor of the course, the Chairman of the examination committee, and another member of the academic staff.

Experts’ Evaluation

The SER revealed that the admission requirements and selection procedures are in accordance with the general admission regulations of all the participating universities. A student should have completed an undergraduate course in a technical or scientific discipline with at least 180 credit points. Additionally, a prospective student candidate must show certain English competencies (see description above) which is an appropriate requirement assuring student success.

What came as a surprise for the panel of experts was the requirement to successfully participate in a language course “German as a foreign language” for students who enrol at HAW Hamburg and did not complete their undergraduate course in Germany. While the on-site visit demonstrated that this admission rule is due to state regulations of Hamburg state, it clearly is unfit for the specific situation of this international programme – particularly since such a requirement is not imposed at any of the other partners. Any chance to eliminate this restriction from the admission requirements should be used as it creates an imbalance in the admission requirements.

The criteria of the selection procedure are three-parted and regulated by a selection committee at the institutions. In fact, five students are elected by each home institution following a local procedure of attributing marks. It seems well possible to the panel of experts to move forward with a more joint approach in the selection procedure to further increase fairness, transparency and equality **(Finding 4).** The role of the selection committee in the procedure must be highly transparent and documented.

The experts conclude that based on the provided documentation and particularly student interviews the recognition of qualifications and of periods of studies (including recognition of prior learning) are applied in line with the Lisbon Recognition Convention and subsidiary documents.

Conclusion

The criterion is fulfilled. A more joint approach in the selection procedure should be implemented to further increase fairness, transparency and equality.

VIII. Learning, Teaching, Assessment

Description

All students start their first semester at HAW Hamburg. For the second and the third semester, students move, respectively to Porto and Lille. The last semester is dedicated to their master thesis.

The three participating universities have selected different academic subjects upon which the master programme has been built. Whilst HAW Hamburg puts their focus more on medical hardware subjects, IPP aims for the clinical application of the technical knowledge and ILIS approaches a more business-oriented subject. Thus, HAW Hamburg centers theoretical and practical courses on data processing or modelling methods with a practical work within each module. The second topic is based on the practical expertise of IPP and focuses modules like applied clinical imaging, medical imaging technologies and devices or human-technology interaction on clinical environment. In contrast, Lille with its work business related contents, offers module like international healthcare marketing and business, legal and regulatory considerations in the healthcare industry, industrial purchasing or outsourcing in the healthcare industry.

In general, the courses will be carried out by professors, assistant and associated professors of the respective field and from different departments.

According to the SER, the teaching methods of the courses will combine theoretical and practical aspects of the different study subjects and will combine didactical concepts of research and application orientation. The master courses will have a student group size between 9 and 25 persons (for lectures). The form of seminar teaching shall facilitate an active learning atmosphere. At HAW Hamburg courses which use simulations are constantly increasing, so the important role of the simulation lab (SIMLAB) becomes more evident. Students can learn phenotypical and physiological characteristics by using the SIMLAB via medical body models and training scenarios and have an experience-oriented teaching method.

The assessment of students is regulated by the General Examination and Study Regulations for Bachelor and master's degree programmes in Engineering, Science, Life Sciences and Computer Science at Hamburg University of Applied Sciences. The assessment can either have an examination character (graded) or can be carried out via study credits in which students only can pass or fail a course.

As stated in the module descriptions, courses can either have a project or a seminar character where the presence of the students must be more than 80 %. Assessments of the courses take either written (between 60 and 240 minutes) or oral (between 15 and 45 minutes) forms or can be carried out by a written based oral presentation of a seminar paper (between 15 and 45 minutes) or a home project with a colloquium followed. Project seminars are done in a group of five students with the aim of completing and presenting an industry-oriented project at the end of the semester.

At the end of the EMMaH programme, students must submit a final thesis on an independent research project, which comprises a total of 30 credit points. The master's degree is graded based on the examination and study credits of the first three semesters and the Master thesis. The overall grade is calculated with 25% of the Master thesis grade and 75% of the remaining module grades weighted with the respective CPs as regulated by the HAW's general examination regulations.

Experts' Evaluation

A common problem in multi-disciplinary projects and programmes is that each single discipline has an incentive to shift the focus in its direction. If this is done by everyone, an unmanageable workload might arise. In the case of EMMaH this problem is neatly avoided by the three-semester-at-three-institutions structure. Thus, despite the multidisciplinary nature of the degree, the course content and connected workload are generally appropriate for a master's degree and the learning process seems balanced and well structured

The programme does not offer any elective courses. Consequently, it has to be recognized that there is no freedom at all, to choose courses or modules according to student's individual interests. From the consortium's point of view this is justified by a reduction in study complexity that could be helpful steering students through an otherwise fairly complex study programme. Moreover, the frequent joint attendance of the same courses is expected to foster an atmosphere of close collaboration and companionship building a close-knit group of individuals from different background. While this is plausible and actually seems to work, it does not mean that all courses have to be taken together. Rather, possibilities could be created for students to choose for instance one elective per semester (and institution) from a pre-defined selection of courses that may or may not include language courses in the respective countries **(Finding 2**; also see chapter 6**)**.

The joint programme uses a wide variety of examination types (written exams, oral exams, projects, homework) in different mixes at the participating institutions. This reflects not only different academic traditions and legal requirements at different institutions in various countries but also the commitment to match learning outcomes to exam types. As mentioned before, comparable assessment and a fair aggregation of grades across institutions is currently being developed. One important organizational issue is to define how failed exams can be retaken in following semesters when students are no longer at the institutions where they have to sit the re-examination. The close collaboration between the three universities already at this point appears to ensure this.

A critical issue that has emerged during the site visit is the heterogeneous academic background of first year students, even among applicants that have a bachelor's degree from one of the participating institutions. It is therefore necessary to be aware of and address this heterogeneity. For instance, bridge courses should be offered that enable students to catch up on relevant methods in a structured and goal-oriented way, e.g. to help students with limited technical background to easier find their ways into the study programme **(Finding 3)**.

Conclusion

The criterion is fulfilled.

IX. Student support

Description

Being an intercultural programme, EMMaH intends to consider the special necessities for its students. According to the university, the student support can be shown as tripartite.

The EMMaH coordinator is supported by the study center in order to coordinate the mobility of the students. In order to this, students will get support to apply for Erasmus+ mobility and EU grants. HAW Hamburg coordinates the application time limits for each participating university and carries out the admission of the students in the Registrar's Office of HAW Hamburg.

In the first weeks of the programme, students will also get support via a tutor programme from medical technology students to get a first impression over the official procedures and formalities as well as cultural and leisure activities of the city.

The Support Services at the Faculty of Life Sciences are also one of the key instruments for an early integration of the EMMaH students. According to the universities' statement, a Welcome Day and different informational events will take place at the campus. Outgoing students will also be advised in questions regarding the ERASMUS+ application process or the travel preparation to the partner universities.

Furthermore, an extracurricular service of HAW Hamburg considers the integration via language as an important point to integrate EMMaH students. Therefore, cost-neutral courses in French, Portuguese and Specialist English are offered to the students as well as a course "German as a Foreign Language" will be implemented in winter 2018.

Provisions regarding students with disabilities, chronic illnesses, or under special circumstances are regulated by HAW's General Examination Regulations and concern e.g. extension of examination time or special deadlines.

Experts' Evaluation

Based on the explanation in the SER and the interviews with students during the on-site visit, the student support is adequate. A tripartite approach was implemented: coordination of student's mobility, tutoring and integration. These approaches meet the requirements of an international programme. The on-site visit included discussions with student support coordinators and students in different stages of the master programme. These demonstrated that the student support programme was mainly successfully implemented.

The students shared enthusiastically the support that they have been receiving by the coordinators of the programme. Specifically, all students were informed about the possible financial support and timelines involved, as well the living cost of each semester in the respective countries. In addition, EMMaH offers additional tutor lessons in order to improve the performance of students when they encounter difficulties due to the very despair backgrounds. These reveal great interest and care in the welfare of the student from the coordinating and teaching staff of EMMaH.

While a joint approach and understanding is practiced in many areas of EMMaH the field of student support also builds on general structures of the different institutions beyond the EMMaH specific offers. It became obvious that housing support differs at the institutions and when asked for the biggest challenge in their experience students listed housing in Portugal as a key challenge. Recognizing the different structures of consortium partners the expert panel believes that the programme coordination should aim for a stronger support for students in this regard as mobility is an integral part of the programme and students should be able to concentrate on the academic challenges **(Finding 5)**.

Conclusion

The criterion is fulfilled. The support for students to find accommodation in Porto should be improved.

X. Resources

Description

From the different institutions a total core of 40 academics are involved in the programme. With very few exceptions all teaching staff hold at least a PhD and are currently working as professors, associated or assistant professors. At HAW Hamburg the majority of the courses are used at the same time for the course of study of Biomedical Engineering: Signal Processing-, Imaging- and Control-Systems (M.Sc.), which accepts 10 students per semester. Thus, there will not be more than 25 students in the courses in total, having in mind that the EMMaH programme has a maximum admission number of 15 students each year.

In order to develop a wider didactic competency profile, HAW Hamburg offers didactic workshops to its professors, research assistants and lecturers which are led by the Department of Study and Didactics. In addition to this, HAW Hamburg uses a team of the cross-university “Hamburg Open University” for further training in media use e.g. digital teaching.

According to the SER, all of three participating universities have classrooms, auditoriums and computer rooms which are equipped with audio visual material, library and support areas to students and several laboratories. HAW Hamburg for example offers lecture rooms, with 36 rooms and a total capacity of 1.903 places for students. HAW’s library offers a total area of 865m² including one large reading room, one book scanner with USB connection and one room with 20 workings spaces. A digital library also opens access to more than 20.000 e-books and various literature databases. Students at HAW Hamburg can also use different laboratories which are cross-departmental and continually modernized. At IPP various specific equipment is available such as clinical audiometer, impedancimeter or two radiology advanced workstations.

Experts’ Evaluation

During the site visit HAW could present and demonstrate appropriate resources in order to conduct the EMMaH programme. Besides lecture rooms there is a sufficient amount of areas which students can utilize for individual learning or group work. A wireless network is available.

The library offers additional working space for concentrated work. While the majority of hard copies in the library are present in German language, students can access English text books and scientific journals online. The online access is also available from outside the university network via VPN. Besides literature also necessary software (e.g. laboratory tools, development environments) is offered as academic version to the students.

The campus in Hamburg operates several laboratories which are equipped with state-of-the art equipment and which are integrated into the programme.

Facilities at the two other institutions were assessed based on review of documents, web-presence and particularly indirect assessment by interviewing the students who are familiar with the resources. No reason for critic was identified. Furthermore, it should be positively mentioned the Portuguese partner provides direct access to clinical facilities which does not only create an added value for the students but also creates an important feature to the profile of the programme.

Conclusion

The criterion is fulfilled.

XI. Transparency and Documentation

Description

EMMaH uses the internet as a key channel to provide transparency and deliver information to students and potential students. All relevant information, guidelines and important documents can be found on the specific EMMaH website and on the website of the individual institution. Practical information such as examination schedules, examination regulations, curricula or overview of costs and financing can also be found bundled on the EMMaH website. The information is also available in English.

Experts’ Evaluation

Mainly all relevant information about the EMMaH programme is available and accessible to the students online. The on-site visit demonstrated that the students have access to mobility counselling which provides information on the specific needs of mobile students. Moreover, examination

schedules and regulations are available and explained to the students at the beginning of every semester including information on the specific regulations of the semester's university.

The information regarding admission procedures and the involvement of the coordinating body of the programme, the Joint Committee, regarding its responsibilities, tasks and duties were not sufficiently documented and transparently described in the key documents. Recognizing the key role of the Joint Committee that was explained at many different situations during the interviews, these responsibilities are not yet fully defined and should also be documented transparently in binding documents **(Finding 1**; also see chapter 4**)**. Equal transparency seems advisable for the currently developed regulations for the aggregation of grades across institutions.

Additionally, as an international master programme, EMMaH's official language is English. The official programme website is in English; however, the supplied website links of the home institutions are still in Portuguese, French or German. Moreover, some relevant documents as admission documents or applications are still provided in the home institutions language. While interested applicants can request all information also in English, soon EMMaH will probably not only receive students previously enrolled in the home institution or country but will also attract applicants from all over the world. Therefore, EMMaH's role as a front-runner of internationalization for its institutions should lead to an increased information offer in English language at all three host institutions.

Conclusion

The criterion is partly fulfilled. The function and responsibilities of the "Joint Committee" have to be defined and documented transparently in a binding way.

XII. Quality Assurance

Description

Quality assurance of the EMMaH programme is seen on local programme and consortium level. The evaluation of individual teaching activities (teaching activity evaluation) is autonomously implemented at each university.

The student course evaluation is centrally coordinated and implemented by the Evaluation, Quality Management, Accreditation unit (EQA) at HAW Hamburg. In addition to the evaluation of individual teaching activities, course evaluations are taken place on a regular basis and include bachelor and master graduates, current students and withdrawers to improve teaching quality and aca-emic success.

After the completion of each semester, course content and conditions are evaluated by the students. For this, a questionnaire is used which has been developed specifically for EMMaH. At the start of each semester, the students evaluate the preceding semester by means of an online survey.

The results of the course evaluation process will be discussed in the joint committee. As mentioned before, each partner institution of the consortium nominates two persons to a joint committee, which meets at least once a year. The members of the joint committee will revise the program and assure the program's quality by appropriate means.

At HAW Hamburg the results of this evaluation process will be discussed in QM meetings as well, where participants from the department, from the Faculty, and presidium and student representatives discuss the results in order to implement measures regarding the study programme.

Experts' Evaluation

Based on the experts' impression HAW Hamburg has a strong history in excellent quality assurance processes which already led to its system accreditation. International programmes, however, have to be accredited separately. The EMMaH programme uses means of the system accreditation process like the EQA unit and regular QM meetings.

At all institutions, module and total programme evaluation (e.g. by cohort evaluation) is found to be adequate using standard techniques like evaluation questionnaires and student feedback. Additionally, programme coordinators serve as central contact persons for the students in order to support in case of questions and organizational challenges.

For the future, complementary graduate surveys are planned which are currently under discussion by the participating universities. The experts believe that processing these graduate surveys jointly will not only increase efficiency but also facilitate to work with the results.

The on-site visit showed one aspect regarding the programme coordinators which offers room for improvements: in case that a programme coordinator is not able to follow his or her duties any more (illness, change of employment etc.), vacancies on this position should be prevented, e.g. by announcing substitutes who close the gap in student's support **(Finding 6)**.

A challenge in international programmes is the integration of quality assurance over several international sites. For this, the EMMaH partners initiated a joint committee (JC) with representatives from each participating university. The JC plays a central role in the admission process (selection of students after proposal from each site), coordinating overall evaluation analysis over all sites and future development and improvement of the study programme.

The on-site visit showed, that on operational level, the JC is working well. However, documentation of the selection process of the members of the JC, the duties, responsibilities, authority, meeting frequency, control loop with enforcement of improvement measures etc. seems to be incomplete. For this, it is strongly recommended to include a transparent and complete documentation of the JC in the quality system **(Finding 1**; also see chapter 4**)**.

Conclusion

The criterion is partly fulfilled. Regulations for representation of the programme coordinator should be implemented. Additionally, the duties, responsibilities, authority, meeting frequency, control loop with enforcement of improvement measures etc. of the joint committee should be described and integrated in the quality system.

XIII.Recommendations of the panel of experts

The panel of experts recommends accrediting the study programme **European Master of Medical Technology and Healthcare Business (EmmaH)** offered by **Hochschule für Angewandte Wissenschaften Hamburg (HAW), Germany**, in cooperation with Instituto Politécnico do Porto – Escola Superior De Technologia Da Saúde Do Porto (IPP), Portugal, and University of Lille 2 Health and Law (ILIS), France, **with conditions.**

Findings:

1. The function and responsibilities of the “Joint Committee” have to be defined and documented transparently in a binding way.
2. Elective courses/modules should be integrated in the curriculum in order to allow a stronger individualization of the qualification and to strengthen labour market orientation.
3. Bridging courses for technical subjects should be offered prior to students taking the respective modules.
4. A more joint approach in the selection procedure should be implemented to further increase fairness, transparency and equality.
5. The support for students to find accommodation in Porto should be improved.
6. Substitutes for key positions in the programme should be defined in order to prevent delays in case of absence of duty.