

Experts' Report
on the Accreditation of the Master's Programme
"Maritime Operations" (M.Sc.)
jointly offered by
Hochschule Emden-Leer and
Western Norway University of Applied Sciences
(File Nr. 1412-xx-1)



81. Meeting of the Standing Accreditation Commission on 18.07.2017

TOP 5.07

Study Programme	Degree	ECTS	Programme Duration	Type of Programme	Annual Intake Capacity
Maritime Operations	M.Sc.	120	2 years	full time	25

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Hanover, 6 June, 2017

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I. Final Vote of the Expert Panel and Decision of the Standing Accreditation Commission

1. Decision of the Standing Accreditation Commission (SAK)

The Standing Accreditation Commission follows the experts' report and recommendations and takes note of the consortium's response.

The commission appreciates all measures for improvement that the consortium has already taken or is planning to take in the near future. However, for final proof that the shortcomings identified in the report have been remedied, the course catalogue must be fully revised, and a viable concept for bridging courses must be developed.

In due consideration of the European Approach for the Quality Assurance of Joint Programmes, the Standing Accreditation Commission decides to accredit the Master's programme in Maritime Operations jointly offered by Hochschule Emden-Leer and Western Norway University of Applied Sciences under the following conditions:

- 1. All parts of the curriculum must clearly be designed at Master's level. Students should be offered extracurricular bridging courses to close knowledge gaps if necessary. The consortium must develop a viable concept for this (cf. European Approach, Section B, Chapter 3.1).*
- 2. The course catalogue must be thoroughly revised. Existing inconsistencies and imprecisions must be remedied, and the readability of the document must be improved. The course catalogue should also show how each educational unit contributes to achieving the intended learning outcomes of the programme (cf. European Approach, Section B, Chapter 8).*

The conditions must be fulfilled within the period of nine months. Failure to comply with the conditions in due time will result in withdrawal of the accreditation.

The accreditation of the study programme is valid for a period of six years.

2. Final Vote of the Expert Panel

2.1.1 Recommendations:

- The intended learning outcomes of the programme should be more strongly aligned with Bloom's taxonomy.
- The use of the term "sustainability" in the programme should be revised or at least clarified, as it currently refers to environmental issues only instead of encompassing economic and social aspects, too.
- Exam requirements should become more comparable across the programme. At least, it should be made transparent to the students and the general public in how far assessment methods, standards and evaluation criteria differ from each other at the two partner institutions. In the future quality assurance of the programme, a special focus should be taken on the topic of student assessment.
- All lecturers should obtain advice on the design of their assessments from external or internal colleagues on a regular basis.
- The partners should develop basic guidelines or regulations for the joint supervision of Master's theses.
- If no common website for the programme is to be created, the programme-related websites of the two partners should be directly linked to each other and should be harmonized as far as possible. All relevant information regarding the entire programme should be accessible on both websites, including an overview/illustration of the course schedule and the mobility track. The intended learning outcomes of the programme should also be described in more detail on both websites.
- The partners should define common standards, targets and performance indicators for the quality assurance of the programme. These joint quality standards should be laid down in a reference document.
- Alumni surveys should be introduced as a quality assurance tool across the entire consortium.
- For each educational unit, the essential reference/reading materials should be listed in the course description or in a separate handout.

1 Final Vote of the Expert Panel and Decision of the Standing Accreditation Commission

2 Final Vote of the Expert Panel

2.1.2 Recommendation to the Standing Accreditation Commission:

The expert group recommends the accreditation of the Master's programme "Maritime Operations" with the degree of Master of Science for the duration of six years under the following conditions:

- All parts of the curriculum must clearly be designed at Master's level. This goes especially for the units on Ship Propulsion and Ship Stability. In order to close existing knowledge gaps, students should be offered extracurricular classes (cf. European Approach, Section B, Chapter 3.1).
- The course catalogue must be thoroughly revised. Existing inconsistencies and imprecisions must be remedied, and the readability of the document must be improved. It should also become transparent how each educational unit contributes to achieving the intended learning outcomes of the programme (cf. European Approach, Section B, Chapter 8).

II. Evaluation Report of the Expert Panel

Introduction: Purpose, Design and Context of the Accreditation Procedure

The Master's programme in Maritime Operations was jointly developed by the Maritime Studies faculties at Hochschule Emden-Leer (University of Applied Sciences) in Germany (in short: HEL) and University College Stord/Haugesund in Norway. In January 2017, the college in Haugesund became part of the newly founded Western Norway University of Applied Sciences (Høgskulen på Vestlandet, in short: WNU), which was created through the fusion of three formerly independent higher education institutions. Hence, WNU is named as a degree-awarding partner in the self-report and in all central documents (cooperation agreement, certificates, Diploma Supplement etc.).

Graduates of the programme are to obtain a Master's degree jointly awarded by WNU and HEL. The first students are to be enrolled in the autumn of 2017.

ZEVA was commissioned by Hochschule Emden-Leer to conduct a quality review of the Master's programme based on the *European Approach for Quality Assurance of Joint Programmes*, which was approved by the EHEA ministers in May 2015 and introduced in Germany shortly afterwards. Accordingly, this report is structured along the standards of the European Approach, while disregarding specific national standards and criteria of accreditation.

As required by the European Approach, ZEVA assembled an international panel of experts from Norway, Germany and Sweden. The on-site talks took place at the HEL campus in Leer and involved students, faculty and staff from both universities. The consortium provided transparent oral and written information regarding the provisions at Haugesund, which was taken into account in the evaluation of the programme.

As the European Approach has not yet been implemented in Norway, the programme had to undergo a separate (paper-based) review procedure there. In February 2017, it obtained accreditation by the Norwegian agency NOKUT.

This report is based on the experts' assessment of the self-evaluation report jointly submitted by HEL and WNU and on the outcomes of the on-site talks in Leer. It will serve as a basis for ZEVA's Standing Accreditation Commission to decide on the accreditation of the joint Master's programme. In the case of a positive decision by the Commission, ZEVA will award the quality seal of the German Accreditation Council for a limited time period, after which the university can reapply for accreditation.

1. Assessment of the Study Programme

1.1 Eligibility

History and Motivation of the Partnership

Both Hochschule Emden-Leer and Western Norway University of Applied Sciences are fully recognised, state-owned higher education institutions entitled to award joint Master's degrees in their countries. A focus on Maritime Studies and Nautical Science is the common link between the two universities, both of which benefit from the long tradition and strong presence of the shipping and offshore industries at their locations in Leer and Haugesund.

The cooperation between the two Maritime faculties started with a guest lectureship in Haugesund, a twin city of Emden, about three years ago. Out of this grew the idea to develop a joint Master's programme, as the two faculties turned out to complement each other very well in terms of their profiles: while the faculty in Haugesund can contribute special expertise in the offshore industry, HEL puts a particular emphasis on the field of environmentally friendly shipping, which WNU intends to drive forward, too. These focus areas are reflected especially in the elective modules of the Master's programme (cf. Chapter 1.3).

Apart from the mutual benefit regarding the main areas of research and teaching, there were further strategic motivations for initiating the new programme. At HEL, it fills a gap in the programme portfolio, as, in spite of high demand, the faculty has not offered any Master's programme to date. In addition, the programme might be an important step on the way towards the long-term goal of introducing Ph.D. programmes in the field of Maritime studies in Germany, as it contributes to sharpening the faculty's research profile. Also, the programme is embedded into a general internationalization strategy, which includes the aim of attracting more students from abroad to HEL.

Cooperation Agreement

HEL and WNU have closed a cooperation agreement that outlines the underlying terms and conditions of the joint programme. A signed copy of this document is included in the self-evaluation report of the two faculties. Besides the mobility scheme and central formal aspects (degree-awarding procedures, programme duration, mutual recognition of examination results etc.), the agreement describes the responsibilities of all partners involved and the general procedures of student selection and admission.

According to the agreement, a Steering Committee consisting of four members of faculty and two students from both institutions is responsible for the management of all administrative, legal and financial matters of the programme. The members of the Steering Committee are to meet at least once a year.

Experts' Assessment

The experts have no doubt that the Master's programme in Maritime Operations is a joint programme in the actual sense of the word: from the very beginning, it has clearly been a common project of both partner institutions, and combines the particular strengths of both partners for the mutual benefit of the faculties and the students. Both partners bear equal responsibility for the management, coordination and quality assurance of the programme, and have closed a binding agreement on these central issues. Mobility and exchange of faculty and students form the core of the programme, that is, none of the two institutions could deliver it on its own.

During the on-site talks it became very clear that there is a high level of interest in the programme both from the side of Norwegian and German students. All in all, 16 persons had applied at the time of the on-site talks, including at least one applicant from outside Europe, which seems quite promising to the experts as regards the future prospects of the programme.

There is no quota as regards the nationality of the students, even though the consortium aims at creating a balanced mixture of students from Norway, Germany and other countries. The experts appreciate this, but nevertheless share the expectation of the universities that at least during the first years, the majority of applicants will most likely be Bachelor graduates of WNU and HEL. The programme is equally open to graduates of nautical sciences and (maritime) engineering, resulting in a relatively large potential target group.

The above described motives for developing the joint Master's programme seem plausible to the experts. As far as they can see, the two partners are good matches for each other and have found ways to ensure a functioning communication and collaboration. However, it will probably take the two institutions some more time to reach the desirable degree of integration at programme level. Due to the early stage of the co-operation, the consortium still lacks common quality standards in a number of important areas, as e.g. the formulation of intended learning outcomes, student assessment or the design of course descriptions (cf. chapters 1.2, 1.5 and 1.8 below). A truly holistic approach still needs to be developed over time, but to the experts' mind, it seems that the consortium is already on a good way.

From the experts' point of view, the Steering Committee should meet more often than just once a year (as stipulated in the Cooperation Agreement). During the on-site talks, the members of faculty agreed with this and mentioned that there was actually a more frequent exchange between the members of the committee via Skype or video conference.

1.2 Intended Learning Outcomes (ILOs)

The intended learning outcomes of the study programme are described in the Diploma Supplement. Based on the Norwegian Qualifications Framework for Lifelong Learning (NQF), the ILOs are divided into the categories "Knowledge", "Skills" and "General Competence". In detail, the qualification goals are as follows (cf. Diploma Supplement):

Knowledge:

The candidate:

- 1. has advanced knowledge in the academic field of maritime operations, giving an overview of the maritime environment*
- 2. has specialized insight in maritime operations and its processes*
- 3. can apply knowledge to new areas related to maritime operations*
- 4. has thorough knowledge of theories and methods in the field of maritime operations*
- 5. can analyse academic problems related to the maritime field on the basis of history, tradition, distinctive characters and the place in society of the maritime industry*
- 6. has thorough knowledge of theories about environmental friendly systems and can discuss these in an operational view*
- 7. can apply his/her knowledge about the clues of safe and environmental maritime operations to the academic field*

Skills:

The candidate:

- 1. can analyse existing theories, methods and interpretations e.g. system analysis, cost benefit analysis, optimisation and risk assessment, in the field of maritime operations*
- 2. can deal critically with various sources of information both in the maritime and related fields and use them to structure and formulate scholarly arguments relevant for maritime operations*
- 3. can use relevant methods for research and scholarly development to work independently on practical and theoretical problems related to maritime operations*
- 4. can carry out an independent, limited research or development project under supervision and in accordance with applicable norms for research ethics*
- 5. can analyze existing methods and interpretations in the maritime field and work independently on practical and theoretical problems relevant for maritime operations.*

General competence:

The candidate:

- 1. can apply his/her knowledge and skills in new areas in order to carry out advanced assignments and projects*
- 2. can communicate extensive independent work and masters language and terminology related to maritime operations, incl. rules, legislation and classification as well as knowledge of maritime technology and innovation*
- 3. can contribute to new thinking and innovation processes within the maritime field and independently initiate and implement academic and interdisciplinary collaboration*
- 4. can analyze relevant academic, professional and research ethical problems related to the maritime field*
- 5. can assume responsibility for own academic development and specialization and qualify for the PhD-program in nautical operations*

6. *can communicate about academic issues, analyses and conclusions related to maritime operations with both specialists or the general public*

Experts' Assessment

The experts regard the intended learning outcomes that have been formulated for the study programme as plausible and comprehensible. Even though the IOLs are described along the categories of the Norwegian Qualifications Framework, they are aligned with both the Framework for Qualifications in the European Higher Education Area (FQ-EHEA) and the Qualifications Framework for German Higher Education Qualifications (DQR). The Master's level (second cycle qualifications) as described in the frameworks is clearly reflected in the intended learning outcomes, which include imparting in-depth, specialized knowledge and advanced research skills, and increasing the students' capability for innovation and independent, critical thinking. However, the experts recommend aligning the ILOs more strongly with Bloom's taxonomy, as it is a central reference document in maritime education and training.

As far as the disciplinary affiliation of the programme is concerned, the ILOs have already undergone a revision in the course of the Norwegian accreditation procedure. Instead of Maritime Technology and Management (which had been the original name of the programme), the subject discipline of the Master's is now described as "Maritime Operations", even though both managerial and technological aspects still appear in the ILOs. The experts agree that this modification is more adequate with a view to the actual content of the programme.

In the course of the programme, students may focus either on environmental aspects or on offshore and subsea operations. While the environmental focus is clearly recognizable, offshore operations are not mentioned in the intended learning outcomes at all. It may be worthwhile to draw this element out more clearly in the descriptions of the study programme.

As yet, the experts are not entirely convinced that all parts of the study programme contribute to the achievement of the intended learning outcomes in a satisfactory way. A more detailed assessment of the curricular structure and content is given in Chapter 1.3 below.

1.3 Structure and Content of the Study Programme

Credits, Workload and Mobility Scheme

The joint Master's programme in Maritime Operations comprises two years (four semesters). The programme is studied full-time, but may also be offered in part-time mode in the future, for it may be of interest to working professionals in the field as a means of further qualification.

As a general rule, all students are to spend the first semester in Haugesund and the second semester in Leer. Students can then choose where to spend the second year of their course.

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1 Assessment of the Study Programme

In the third semester, they may specialize either on the field of “sustainable maritime operations” (Leer) or on “offshore and subsea operations” (Haugesund), or may even spend some time at another institution of their choice.

The fourth and final semester is fully dedicated to the Master’s thesis. On principle, it is possible (but not mandatory) to have the thesis jointly supervised by lecturers from Haugesund and Leer.

The European Credit Transfer System (ECTS) is consistently applied throughout the programme. Upon completion of each educational unit, ECTS credit points are awarded. The number of credit points per module is made transparent in the course handbook, ranging from 6 to 12 credits per unit. All in all, 120 ECTS credit points are awarded, which is in line with the formal requirements of the FQ-EHEA for second cycle qualifications. One credit point represents an average student workload of about 27 hours. This is in accordance with the ECTS conventions.

Curriculum

During the first semester in Haugesund, three compulsory modules must be absolved: one on Philosophy of Science and Research Methods, one on Maritime HTO and one on the topic of Ship Stability. The second semester in Leer comprises another module on scientific methods and a number of more specialized modules on different technical and managerial aspects of Maritime Operations.

Students who choose to spend their third semester at HEL study three modules on technical, operational and economical aspects of safe and environmental (friendly) shipping, and also work on a maritime project comprising 12 ECTS credit points.

Students continuing in Haugesund receive in-depth knowledge on subsea systems and operations, sea-keeping as well as ship operation and maintenance systems.

4. Semester	Masterthesis 30 ECTS				
3. Semester Profile	Sustainable maritime operations		Offshore and subsea operations		Mobility window to go to other university
	30 ECTS Leer		30 ECTS Haugesund		Main study
2. Semester	Scientific approach of complex problems	Financial Business Administration and Cost Accounting	Ship Propulsion Systems	Quality and risk management	Applied Approach to Tools of Optimization and Simulation
	6 ECTS Leer	6 ECTS Leer	6 ECTS Leer	6 ECTS Leer	6 ECTS Leer
1. Semester	Philosophy of science, Research Design and Methods		Maritime HTO (Human-Technology-Organization) and Cultural Understanding		Ship Stability
	10 ECTS Haugesund		10 ECTS Haugesund		10 ECTS Haugesund
					Basic study

Table 1: Curricular Structure of the Master’s programme in Maritime Operations

The academic calendars of the two partner universities are almost identical in structure. Hence, students have enough time for self-studying and for shifting locations in between semesters.

The programme is taught entirely in English, as students of different nationalities will continuously sit classes together for at least one year.

Experts' Assessment

The experts assert that, in formal terms, the study programme is in line with the standards of the European Higher Education Area: the ECTS is applied properly, and the distribution of credit points is clear. The average student workload calculated for the different educational units is plausible, and the size and scope of the modules seems, by and large, adequate. The curricular structure is well-designed, too: while the first year serves to provide a broad knowledge base and additional methodical skills, students may later specialize on a field of their choice.

By and large, the structure and content of the programme correspond well with the intended learning outcomes described above. The curriculum seems fit to enable the students to achieve the ILOs.

However, based on the course catalogue submitted and the information given on site, the peers have come to the conclusion that not all modules live up to the standards of a Master's programme. In particular, the two units on ship stability (Haugesund) and ship propulsion systems (Leer) are clearly at undergraduate level, probably in response to the different entrance qualifications of the students, whose background may be in nautical sciences or in engineering. The experts do not regard this as acceptable. From their point of view, all parts of a Master's programme should impart specific, in-depth knowledge instead of fundamentals, and should more strongly promote the students' capability for critical, independent analysis. Existing knowledge gaps should be closed through extracurricular classes as e.g. summer schools or bridging courses (including final assessment), but not as part of the Master's programme itself. Hence, the peers are of the opinion that the two modules must be redesigned and turned into Master's modules.

Furthermore, the experts have identified some minor flaws which concern issues of naming and wording, rather than matters of educational level or content. This applies especially to the elective area "Sustainable Maritime Operations" offered at HEL. Most of the modules in this part of the programme focus on "aspects of safe and environmental shipping". As the term "environmental shipping" does not actually exist, it should be exchanged for "environmentally friendly shipping" or "Green Shipping". Also, the module "Quality and Risk Management" should be renamed into "Quality and Environmental Risk Management", as this would more accurately reflect the teaching contents of the unit.

More importantly, the use of the term "sustainability" in the programme should be thoroughly revised. For instance, the title of the elective area "Sustainable Maritime Operations" is mis-

leading in the sense that the modules do not actually address the full concept of sustainability (which encompasses ecological, economic, and social aspects), but take quite a narrow focus on environmental aspects. The wording used in the course descriptions and the descriptions of the programme as a whole should accurately reflect this, or it should be clarified that in the context of this programme, the term sustainability is more narrowly defined.

Alternatively, other facets of sustainability could, of course, be included in the curriculum. One good example would be the topic of Green Shipping in third world countries, which combines social and environmental aspects. It must be kept in mind, though, that in order to widen the thematic scope, additional faculty with special expertise in the field of sustainability may be required.

In any case, the students should be well introduced to the concept and meaning of sustainability, ideally through a short introductory course.

1.4 Admission and Recognition

Selection and Admission of Students

There are several documents regulating the admission and selection procedures for the new programme. HEL has developed a separate regulatory guideline (“access and admission regulation”), which is available in English and German. The admission requirements and the selection criteria are also described in detail in the cooperation agreement between the two institutions. A general admission regulation for the College in Stord/Haugesund was also submitted (in Norwegian only), but should now be invalid due to the fusion process outlined above. It is therefore not clear which admission regulations apply to the programme on the Norwegian side. The experts have good reason to assume, though, that the Norwegian regulations will be in accordance with the documents at hand.

According to the HEL regulations, applicants must have an academic degree (Bachelor’s level or equivalent) in (marine) engineering, nautical science, maritime studies or a related field. Also, they must be able to demonstrate sufficient English language skills (CEFR B2 or equivalent level) and must submit a statement of purpose describing their motivation for studying the programme. Students are selected based on their academic background and the written statement of purpose.

Recognition

Hochschule Emden-Leer has generated programme-related exam regulations which include rules for the recognition of qualifications, periods of studies and prior learning (cf. § 17). These rules are in line with the Lisbon Recognition Convention.

The self-report also includes the “Guidelines for Transfers and Recognition of Previous Education for programmes” applied at University College Stord/Haugesund. However, as the college has ceased to exist as an independent institution, these regulations do not apply any longer. It is unclear whether a similar framework exists at WNU.

The experts kindly ask the consortium to provide additional information on this.

Experts' Assessment

The experts regard the admission requirements and selection procedures as appropriate for a Master's programme in the field of Maritime Operations. As already discussed above, the decision to admit students with relatively heterogeneous academic backgrounds entails some potential didactic problems, as different entrance qualifications and knowledge levels need to be accounted for (cf. Chapter 1.3). On the other hand, the interdisciplinary character of the programme may be especially attractive and beneficial for the students. Experience will show whether the target group of the programme needs to be narrowed down.

As the entire programme is fundamentally based on mutual recognition and encompasses studying in two countries within two years, it is not very likely that many students will choose to spend one semester at a third institution of their choice – even though, on principle, this would be possible. However, students might apply for the recognition of skills they have acquired in the course of their professional careers, or through other forms of prior learning. For such cases, all partners should have transparent regulations and procedures.

1.5 Learning, Teaching and Assessment

Learning and Teaching

At both HEL and WNU, classes will be mainly organized as seminars, including theoretical input, discussions, case studies and practical or software-assisted assignments, as well as lab work and, where applicable, simulator exercises. At both universities, projects are also a central teaching method.

According to the students who participated in the on-site interviews, lecturers are sufficiently proficient in English at both universities. Also, there seems to be an adequate supply of teaching and reference materials in English at both institutions. Those students who had spent time at both universities reported that there was a slightly stronger focus on project work in Haugesund. Therefore, student workload was more evenly distributed over the entire semester, and there was more time for self-studying, too.

Apart from these differences, didactic approaches seem to be quite similar at HEL and WNU. Hence, the exchange students will probably not experience too much of a “cultural clash” as regards teaching and learning. Studying in nationally mixed groups will also help students to adjust to their new learning environment during their time abroad.

Student Assessment

In the majority of the modules, a combination of different assessment forms is applied. Such “portfolios” may include short written tests or papers, literature reviews, case studies and exercises. In other modules, there is only one final written or oral examination, or a term paper.

Experts’ Assessment

As far as the experts can see, the methods of teaching and learning are adequate to achieve the intended learning outcomes of the programme. During the on-site talks, it became clear that the programme will also be embedded into the general research infrastructure of the universities. Students will have plenty of opportunity to participate in ongoing research projects, which the experts regard as particularly beneficial for the programme.

The experts assert that there is a good mixture of assessment forms applied in the programme. The examinations are apt to assess the students’ acquired knowledge, as well as a variety of key competencies (oral presentation skills, scientific writing, application of knowledge to practical problems, teamwork etc.). The assessment procedures appear to be consistent both with the intended learning outcomes and the teaching methods applied.

The on-site interviews with students and faculty have confirmed that the assessment systems at both universities seem to be working well. All relevant information concerning the examination procedures is included in official examination regulations, which are available in English, too. By and large, lecturers are expected to provide sufficient feedback to students regarding their examination results.

In some cases the scope of the exams does not seem to stand in a reasonable relation to the size and contents of the module. This applies, for instance, to the 10-credit modules “Ship Stability” and “Introduction to Sea-Keeping”, which finish with a 5-hour written examination and a 1-hour oral exam, respectively. This appears as an imbalance to the experts.

During the site visit, the Norwegian partners explained that the 5 hours were to be understood as the maximum time allowed – most students finished within a lot less time. However, this is not made sufficiently clear in the course catalogue or other documents (cf. Chapter 1.8).

Even though the experts are aware that the chosen forms of assessment are due to different national traditions, they recommend a stronger harmonization of exam requirements across the curriculum. At least, it should be made transparent to the students and the general public in how far assessment methods, standards and evaluation criteria differ from each other at the two institutions. In the future quality assurance of the programme, a special focus should be taken on the topic of student assessment. In addition, the experts recommend to all lecturers to regularly obtain advice on the design of assessments from external or internal colleagues.

As mentioned above, a joint supervision of the Master's thesis by Norwegian and German members of faculty is possible. The experts recommend developing basic common guidelines or regulations for this.

1.6 Student Support

Both universities provide special support services for mobile/international students, as e.g. introductory workshops or buddy programmes. Hochschule Emden-Leer offers a two-week introductory programme for international students prior to the start of the semester, including an intensive course in German.

The international offices of WNU and HEL offer advice in all typical matters of concern for foreign students (finding suitable accommodation, general orientation, insurance etc.) and also organize special events and excursions.

At both universities, there is an administrative coordinator for the study programme. Students may address the coordinators in all non-academic issues. The two coordinators are also in constant, close exchange with each other.

Experts' Assessment

During the on-site talks, the experts have gained the impression that international students are very well supported at both higher education institutions. German students who had spent some time in Haugesund reported that they had been very well received and comprehensively informed. At both universities, lecturers usually run an open-door policy and are always ready to provide advice if needed. The experts believe that this will be a great advantage for the new M.Sc. programme.

In summary, both HEL and WNU provide excellent conditions for exchange students that the students of the new Master's programme will also benefit from. In particular, the two coordinators will most likely be of great help to students during their stay abroad.

1.7 Resources

Staff

The consortium has provided transparent information on the teaching faculty involved in the new Master's programme. CVs and publication lists of both the German and the Norwegian lecturers have been included in the self-report. Also, it was laid out in detail how much time each lecturer devotes to the programme.

On the side of HEL, the majority of lecturers are Full Professors, whereas at WNU, most of the teaching is done by assistant professors. Other members of faculty are there to provide additional guidance and support to students if required. At WNU, some of the modules are

taught by personnel from other higher education institutions in Norway and abroad.

Both WNU and HEL offer didactic training courses to their faculty members.

Facilities

The two campuses in Leer and Haugesund provide modern infrastructure and facilities in the realm of maritime operations and marine engineering, including ship-handling simulators and different technical laboratories. At HEL, a new Center for Modeling and Simulation was recently launched that encompasses a variety of state-of-the-art technical devices, as e.g. a Virtual Reality lab. A further expansion of the infrastructure – including a manoeuvring basin/towing tank – is already in planning. In Haugesund, a new Maritime Center is currently being developed. Besides various simulators, the center will also include a model ship basin and wave basin.

Experts' Assessment

The experts have come to the conclusion that both higher education institutions provide a sufficient number of qualified teaching personnel to run the Master's programme. Even though the experts regret that only few full professors of WNU actively contribute to the programme, they regard the human resources of the programme as adequate in quantitative terms.

As far as the experts can see, the qualification profiles of the lecturers match their teaching areas very well. All faculty members have strong links to the maritime industry (in their research or their professional experience) and possess sufficient international experience.

The interviews with members of faculty from both HEL and WNU revealed that there is a lot more research activity at both faculties than is documented in the self-report. HEL has also forged strong collaborations with external research institutions in the field (University of Oldenburg, Fraunhofer Institut) that might also have a positive impact on the new Master's programme.

From the expert's point of view, both WNU and HEL provide adequate infrastructure and equipment for the purposes of the new Master's programme. Students get access to the latest technology in the field, which helps them to achieve the intended learning outcomes.

The experts strongly appreciate the further extension of the technical infrastructure at both campuses, not least because it strengthens the research element of the programme.

The strong local/regional industries (offshore industry, shipbuilding) in Haugesund and Leer are also advantageous, as they provide plenty of opportunities for co-operation.

The non-technical infrastructure is considered sufficient. This also includes the library services, even though the opening hours of the campus library in Leer could be further extended.

1.8 Transparency and Documentation

Course Catalogue

A course catalogue for the study programme has been compiled and submitted as part of the self-report. The catalogue contains basic data and information on all educational units, including the applied method of assessment, teaching methods, the central course contents and the intended learning outcomes. In their basic structure, the course descriptions follow Norwegian rules and regulations. For instance, the intended learning outcomes are categorized into knowledge, skills and general qualifications based on the Norwegian qualifications framework.

Other Sources of Information

Each of the two universities has already set up a website in English for the new study programme. Both websites outline the profile and basic contents of the programme, as well as the admission requirements and the application procedure. The course catalogue is also available for download both at WNU and HEL. On the HEL website, links to the WNU website are provided, too, especially as regards practical information on accommodation, visa etc.

Furthermore, both institutions provide English versions of their exam regulations.

Experts' Assessment

From the experts' point of view, the course catalogue is comprehensible for both German and Norwegian students and provides a solid basis for further work, but is in need of thorough revision in a number of ways. First of all, the readability of the course descriptions should be improved: the descriptions should be more clearly separated from each other by starting each one on a new page, and the typography should be harmonized throughout the document. Furthermore, the experts find it advisable to bring the intended learning outcomes more closely in line with Bloom's Taxonomy of Educational Objectives. There should also be a clear link in the course catalogue to the intended learning outcomes of the entire programme (cf. Chapter 1.2). It should become clear in how far each educational unit contributes to the achievement of the ILOs, as has already been demonstrated in the self-report (cf. Table 1, p. 15). The actual examination requirements should always become fully transparent (cf. Chapter 1.5 of this report).

Also, some inconsistencies should be remedied. For example, it does not always become transparent how the elements of a portfolio (as e.g. papers, exercises, written tests) are weighted for the final grade. The authors of the course catalogue should aim at a common style and should always include a list of the essential reading/reference material for each unit in the course catalogue. Alternatively, the essential reading material should be made known to students in some other form, ideally some time before the start of the semester.

The experts appreciate the partners' efforts to ensure full transparency for students and applicants regarding the programme in Maritime Operations. As the programme is only being started now, it is understandable that the relevant websites are not yet fully developed. Nevertheless, the panel would like to make some recommendations for further development:

If no common website for the programme is to be created, the programme-related websites of the two partners should be directly linked to each other and should be harmonized as far as possible. All relevant information regarding the entire programme should be accessible on both websites, including an overview/illustration of the course schedule and the mobility track. The intended learning outcomes of the programme should also be described in more detail on both websites.

1.9 Quality Assurance

As laid out in the cooperation agreement, the quality assurance of the study programme is a joint responsibility of both partners. Both partner universities apply their own quality assurance instruments and processes to the programme, with the central steering committee as the common link. One important goal of the regular meetings of the steering committee will be the discussion of quality-relevant data and survey results (and, if necessary, the taking of decisions regarding measures for improvement). The committee is supplemented by two external experts from industry (one from Norway, one from Germany) representing the employers' perspective.

During the on-site talks, students and lecturers of both universities described their internal approaches to quality assurance in detail. It became clear that both universities continuously monitor their students' progression and satisfaction by different means (oral and written course evaluation including the monitoring of student workload, surveys directed at different target groups as e.g. first-year students or graduates, establishment of student "reference groups" in each course etc.). A joint questionnaire for the evaluation of the programme is already in planning.

During the on-site talks, the students reported that from their point of view, quality assurance in teaching and learning worked well at their universities. The students felt that they were sufficiently involved in the quality assurance and further development of their programmes.

Experts' Assessment

As far as the experts can see, both partners apply quality assurance processes in line with Part 1 of the ESG (assuming that procedures in Haugesund will largely remain the same after completion of the ongoing institutional merging process). Both students and employers take an active part in these processes. However, some elements still appear underrepresented: for instance, it became clear that to date, the college at Haugesund has not conducted alumni surveys on a regular basis. The experts recommend introducing such an instru-

ment as soon as possible, or alternatively developing a common, programme-related tool for the entire consortium.

More importantly, the experts find that the joint element in the quality assurance of the programme should be further strengthened. As regards the quality standards applied, the partners should create a “roof” of common targets and performance indicators, which should be clearly defined and laid down in a reference document. Wherever standards applied at the universities differ substantially (for example, in the realm of assessment), these differences should be made sufficiently transparent to the students.

1.10 Resume: Findings and Impressions of the Expert Panel

The experts have come to the overall conclusion that the two higher education institutions have developed a convincing programme concept. In terms of size and profile, the two institutions are good matches for each other, and their reasons for developing a joint Master’s programme are obvious and fully plausible. The strong interest in the programme already shown by students and the general public gives reason to believe that the programme has good future prospects. Both institutions provide excellent infrastructure and facilities for a programme of this type, including functioning support structures for international students.

In a number of ways, the partners should develop a more holistic view. This applies particularly to the joint quality assurance of the programme, to student assessment and the design of the course catalogue. The partners should also aim at a common and clear definition of the sustainability concept and apply it consistently across all parts of the programme.

Furthermore, it must be ensured that all parts of the programme are taught at Master’s level.

All in all, the experts have no doubt that the co-operation of the two universities will be fruitful for all parties involved, and that the “joint” nature of the programme will be further strengthened over time.

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Recommendations from the Expert Panel:

“The intended learning outcomes of the programme should be more strongly aligned with Bloom’s taxonomy.”

It is clear for us that we have to revise the module descriptions. The pdf document is generated from a data base. Hence the format and readability have to be optimized. When doing this we will harmonize the module description with a view to Bloom’s taxonomy.

“The use of the term “sustainability” in the programme should be revised or at least clarified, as it currently refers to environmental issues only instead of encompassing economic and social aspects, too.”

The profile of “Sustainable Maritime Operations” is revised and the idea of sustainability is integrated with a more holistic approach. The module “Maritime Project” will include a seminar about the theory of sustainability. Following contents and competences will be added to the module:

Added Content:

This module includes a seminar on sustainability, where the theory of sustainability will be discussed. It is a holistic approach to understand the socio-ecological process of maritime operations characterized by the pursuit of a common ideal. Therefore the ideal has to be defined in a given time and space. However, it will be shown that persistently and dynamically approaching the ideal will be a process resulting in a sustainable system.

- Three pillars of sustainability with environment, social and economic pillars.
- The requirements of UN and IMO on a sustainable maritime industry
- Resiliency of the maritime environment and ocean
- Measurement of sustainability
- Consumption as major driver of human impact on earth
- Impact of human on the Ecosystem
- Sustainable development goals and how the maritime industry can participate
- How to decouple environmental degradation and economic growth in maritime industry
- The social dimension of the maritime industry
- The cultural dimension of the maritime industry

Added Knowledge:

The student knows the theory and concepts of sustainability

Added Skills:

The students can classify his/her results into the theory of sustainability

Please see also the cv of responsible lecturer/ professor for the seminar.

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Furthermore the other modules in the profile are renamed and competences concerning sustainability are added:

Technical Aspects of **Sustainable Shipping**
Operational Aspects of **Sustainable Shipping**
Economic Aspects of **Sustainable Shipping**

In all three modules the following competences are added:

Skills:

The students can classify the respective aspects into the frame work of sustainability.
The students can estimate the impact of the discussed aspects on the sustainability of the maritime operations

“Exam requirements should become more comparable across the programme. At least, it should be made transparent to the students and the general public in how far assessment methods, standards and evaluation criteria differ from each other at the two partner institutions. In the future quality assurance of the programme, a special focus should be taken on the topic of student assessment.”

The most popular examination form in this master program is portfolio. The examination form of “Ship Stability” will be revised to “Portfolio”, too! The examination requirements are public accessible in the module descriptions and examination regulations. Off course this can be optimized. In general the programme respects the examination traditions of each country. This was also written in the cooperation agreement. But it is true that we should have a special focus on this point in our quality assurance programme.

“All lecturers should obtain advice on the design of their assessments from external or internal colleagues on a regular basis.”

At both universities specialists are available to support the colleagues in designing assessments and developing lectures.

“The partners should develop basic guidelines or regulations for the joint supervision of Master’s theses.”

In general the examination regulations in each country manage this point. It depends where the student is applying for his Masterthesis. The task of the steering committee is to harmonize the procedures if the regulations of each country are too far away from each other. Hence if it is necessary the Steering Committee will develop guidelines.

“If no common website for the programme is to be created, the programme-related websites of the two partners should be directly linked to each other and should be harmonized as far as possible. All relevant information regarding the entire programme should be accessible on both websites, including an overview/illustration of the course schedule and the mobility track. The intended learning outcomes of the programme should also be described in more detail on both websites.”

We are working on this!

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“The partners should define common standards, targets and performance indicators for the quality assurance of the programme. These joint quality standards should be laid down in a reference document.”

This will be one of the tasks of the Steering Committee, this and next year.

“Alumni surveys should be introduced as a quality assurance tool across the entire consortium.”

We will do. But until now we have no student who has finished the master programme, because we start the programme this year.

“For each educational unit, the essential reference/reading materials should be listed in the course description or in a separate handout.”

If it is not listed in the module description it will be handed out in the first lesson of the module by the lecturer.

Recommendation to the Standing Accreditation Commission:

“All parts of the curriculum must clearly be designed at Master’s level. This goes especially for the units on Ship Propulsion and Ship Stability. In order to close existing knowledge gaps, students should be offered extracurricular classes (cf. European Approach, Section B, Chapter 3.1).”

According our understanding the master level of a programme is not necessarily obtained by having all modules clear on Master’s level and summing up this condition. The obtained overall qualifications/ learning outcomes have to be on Master level. The expert panel agrees on this point *“By and large, the structure and content of the programme correspond well with the intended learning outcomes described above. The curriculum seems fit to enable the students to achieve the ILOs.”* (Chapter 1.3, p. II-7). The Norwegian accreditation authority NOKUT already confirmed the Master level of the Joint Master “Maritime Operations”

As discussed at the on-site meeting we will develop a pre course based on e-learning to teach the basics of ship stability beforehand. Therefore the module description is revised. Additionally the module description for “Ship Propulsion” is revised, too. (see attached new module description of “Ship Stability” and “Ship Propulsion”)

The course catalogue must be thoroughly revised. Existing inconsistencies and imprecisions must be remedied, and the readability of the document must be improved. It should also become transparent how each educational unit contributes to achieving the intended learning outcomes of the programme (cf. European Approach, Section B, Chapter 8).

As written above we know about the deficiencies of the module descriptions. We will revise the module descriptions. The point *“It should also become transparent how each educational unit contributes to achieving the intended learning outcomes of the programme (cf. European Approach, Section B, Chapter 8).”* we have done in chapter 2.3 in our self-report. Due to this we do not understand this point. To overcome this I copy the table from the self-report below.

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Table 1: Learning outcomes of modules

Learning outcomes	Philosophy of Science, Research Design and Methods	Maritime HTO (Human- Technology- Organization) and Cultural Understanding	Ship Stability	Scientific Approach of Complex Problems	Financial Business Administration and Cost Accounting	Ship Propulsion Systems	Quality and Risk Management	Applied Approach to Tools of Optimization and Simulation	Technical Aspects of Safe and Environmental Shipping	Operational Aspects of Safe and Environmental Shipping	Economical Aspects of Safe and Environmental Shipping	Maritime Project	Subsea Systems and Operations	Introduction to sea-keeping	Ship Operation- and Maintenance Systems	Master thesis
Knowledge																
K1		X					X		X	X	X	X	X	X	X	
K2			X	X		X			X	X	X	X	X	X	X	
K3			X	X		X		X	X	X	X	X	X	X	X	
K4		X	X		X	X		X	X							
K5	X					X	X	X	X							
K6					X	X			X	X	X					
K7			X		X	X						X				
Skills																
S1	X			X	X			X			X		X			X
S2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S3			X	X					X	X		X	X			X
S4	X											X				X
S5				X				X				X				X
General competence																
GC1				X												X
GC2		X	X			X			X	X		X				X
GC3		X		X								X				X
GC4	X			X								X				X
GC5	X															X
GC6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

„K” is the abbreviation for knowledge and the number response to the point under “Knowledge” in 2.1 „S” is the abbreviation for skills and the number response to the point under “Skills” in 2.1 „GC” is the abbreviation for general competence and the number response to the point under “General Competence”

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Total learning outcomes for the master in Maritime Operations:

Knowledge:

The candidate:

1. has advanced knowledge in the academic field of maritime operations, giving an overview of the maritime environment
2. has specialized insight in maritime operations and its processes
3. can apply knowledge to new areas related to maritime operations
4. has thorough knowledge of theories and methods in the field of maritime operations
5. can analyse academic problems related to the maritime field on the basis of history, tradition, distinctive characters and the place in society of the maritime industry
6. has thorough knowledge of theories about environmental friendly systems and can discuss these in an operational view
7. can apply his/her knowledge about the clues of safe and environmental maritime operations to the academic field

Skills:

The candidate:

6. can analyse existing theories, methods and interpretations e.g. system analysis, cost benefit analysis, optimisation and risk assessment, in the field of maritime operations
7. can deal critically with various sources of information both in the maritime and related fields and use them to structure and formulate scholarly arguments relevant for maritime operations
8. can use relevant methods for research and scholarly development to work independently on practical and theoretical problems related to maritime operations
9. can carry out an independent, limited research or development project under supervision and in accordance with applicable norms for research ethics
10. can analyze existing methods and interpretations in the maritime field and work independently on practical and theoretical problems relevant for maritime operations.

General competence:

The candidate:

7. can apply his/her knowledge and skills in new areas in order to carry out advanced assignments and projects
8. can communicate extensive independent work and masters language and terminology related to maritime operations, incl. rules, legislation and classification as well as knowledge of maritime technology and innovation
9. can contribute to new thinking and innovation processes within the maritime field and independently initiate and implement academic and interdisciplinary collaboration
10. can analyze relevant academic, professional and research ethical problems related to the maritime field

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11. can assume responsibility for own academic development and specialization and qualify for the PhD-program in nautical operations
12. can communicate about academic issues, analyses and conclusions related to maritime operations with both specialists or the general public

Appendages:

new suggested module description for “Ship Stability”

new suggested module descriptions for “Ship Propulsion”

Lecturer cv for the seminar included in the module “Maritime Project” (Prof. Dr. Eric Mührel)