Report of the Expert Panel on the Reaccreditation of the University Postgraduate (Doctoral) Programme Applied Marine Sciences University of Split

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INTRODUCTION

The Expert Panel appointed by the Agency for Science and Higher Education (ASHE) created this Report on the Re-accreditation of the University Postgraduate (Doctoral) Programme *Applied Marine Sciences* on the basis of the Self-Evaluation Report of the Programme, other documentation submitted and a visit to the University of Split.

The Agency for Science and Higher Education (ASHE), a public body listed in EQAR (European Quality Assurance Register for Higher Education) and a full member of ENQA (European Association for Quality Assurance in Higher Education), re-accredits higher education institutions (hereinafter: HEIs) and their study programmes in line with the Act on Quality Assurance in Science and Higher Education (Official Gazette 45/09) and the Ordinance on the Content of a Licence and Conditions for Issuing a Licence for Performing Higher Education Activity, Carrying out a Study Programme and Re-Accreditation of Higher Education Institutions (OG 24/10). In this procedure parts of activities of higher education institutions and university postgraduate study programmes are re-accredited.

Expert Panel is appointed by the Agency's Accreditation Council, an independent expert body, to carry out independent evaluation of post-graduate university study programmes.

The Report contains the following elements:

- Short description of the study programme
- The recommendation of the Expert Panel to the Agency's Accreditation Council
- Recommendations for institutional improvement and measures to be implemented in the following period (and checked within a follow-up procedure)
- A brief analysis of the institutional advantages and disadvantages
- A list of good practices found at the institution
- Conclusions on compliance with the prescribed conditions of delivery of a study programme
- Conclusions on compliance with the criteria for quality assessment.

Members of the Expert Panel:

- Mark Davies, Professor, Faculty of Health Sciences and Wellbeing, Sunderland University, United Kingdom of Great Britain and Northern Ireland, President of the Expert Panel
- Matthias Senge, Chair of Organic Chemistry, Trinity College Dublin, Ireland
- R. J. Pieters, Chair of Chemical Biology of Multivalent Systems, Utrecht University, Netherlands
- Fabian Cerda, Max Planck Institute of Biochemistry, Germany
- Marianne Holmer, Professor, Head of Department of Biology, Syddansk Universitet, Denmark
- Isabel Sa Nogueira, Associate Professor, Head of Laboratory, Faculdade de Ciências e Tecnologia Universidade Nova de Lisboa, Portugal
- Inger Elisabeth Maren, Department of Biological Sciences, University of Bergen, Norway
- Peter Bennett, Reader in Biodiversity and Evolutionary Ecology, University of Kent, United Kingdom of Great Britain and Northern Ireland
- Domagoj Vugić, doctoral student, Institut Curie, France

- Maalte Braack, Director of Mathematical Seminar, Christian-Albrechts-Universität, Kiel, Germany
- Barbara Drinovec Drnovšek, Professor, Fakulteta za matematiko in fiziko, Univerza v Ljubljani, Slovenia
- Sebastian Eterovic, doctoral student, Mathematical Institute, University of Oxford, United Kingdom of Great Britain and Northern Ireland
- Donald Bruce Dingwell, Department for Earth and Enviromental Sciences Chair of Mineralogy and Petrology, Ludwig-Maximilians-Universität München, Germany
- Giovanni B. Andreozzi, Coordinator of the Ph.D. programme in Earth Sciences, Sapienza Universita di Roma, Italia
- Ponfa Roy Bitrus, doctoral student, Department of Geology and Petroleum Geology, University of Aberdeen, United Kingdom of Great Britain and Northern Ireland
- Anders Omstedt, Professor Emeritus, Department of Marine Sciences, The Faculty of Science, University of Gothenburg, Sweden
- Rafael Laso Pérez, doctoral student, Max Planck Institute for Marine Microbiology, Germany
- Kai-Olaf Hinrichsen, Professor, Technische Universitat Munchen, Germany
- Alexandra Pinto, Associate Professor, Director of PhD programme in Chemical and Biological Engineering, Universidade de Porto, Portugal
- Mohamed Hussien, doctoral student, Faculty of Chemistry and Pharmacy, L. M. Universitat Munchen, Germany
- Mikael Rinne, Associate Professor, Aalto University, Finland
- Anders Omstedt, Professor Emeritus, Department of Marine Sciences, the Faculty of Science, University of Gothenburg, Sweden.

The higher education institution was visited by the following Expert Panel members:

- Anders Omstedt, Professor Emeritus, Department of Marine Sciences, The Faculty of Science, University of Gothenburg, Sweden
- Mark Davies, Professor, Faculty of Health Sciences and Wellbeing, Sunderland University, United Kingdom of Great Britain and Northern Ireland
- Rafael Laso Perez, doctoral student, Max Planck Institute for Marine Microbiology, Germany.

In the analysis of the documentation, site visit and writing of the report the Panel was supported by:

- Alma Agović, coordinator, ASHE
- Lida Lamza, interpreter at the site visit and translator of the Report, ASHE.

During the visit to the Institution the Expert Panel held meetings with the representatives of the following groups:

- Management
- Study programme coordinators
- Doctoral candidates
- Teachers and supervisors
- Alumni

SHORT DESCRIPTION OF THE STUDY PROGRAMME

Name of the study programme contained in the licence: Applied Marine Sciences Institution delivering the programme: University of Split Institution providing the programme: University of Split and University of Dubrovnik Place of delivery: Split Scientific area and field: Scientific area of natural sciences, field of interdisciplinary natural sciences, or area of biotechnical sciences, field of interdisciplinary biotechnical sciences

Number of doctoral candidates: 23

Number of HEI funded doctoral candidates: 7 Number of self-funded doctoral candidates: 16 Number of inactive doctoral candidates: 12 (out of 23) Number of candidates who completed their study: 36 (2011-2017)

Number of teachers: 25 (24 employed at the University of Split or University of Dubrovnik, 1 external teacher).

Number of supervisors in total: 25

Number of official appointed supervisors: 7 Number of doctoral candidates to whom a supervisor was officially appointed: 7

Taught / research ratio: 45 ECTS/180 ECTS

Taught component: 45 ECTS (mandatory and elective courses)

Research component: - 15 ECTS publicly defended seminar paper

- 30 ECTS publishing scientific papers

- 90 ECTS credits are acquired for creation of doctoral thesis.

Learning outcomes of the study programme:

1. Apply advanced scientific principles in the research and development of new technologies, ideas or processes in the area of biotechnical and natural sciences related to the research of the sea, and fish and other marine organisms;

2. Create and evaluate new facts, procedures and theories that based on research results lead to the extension of knowledge boundaries in the field of scientific research;

3. As the author or co-author, write and successfully publish an original scientific paper in an internationally reviewed journal referenced in the CC or SCI-Expanded database;

4. Prepare and present a public statement of results and scientific knowledge at an international scientific conference;

5. Substantiate your opinion and defend your position in the discussion with other scientists in the field of research;

6. As an associate or project leader, devise scientific research related to the research of the sea and marine organisms;

7. Critically evaluate the published original scientific results of other authors in the area of their research;

8. Analyse and evaluate new and specialized knowledge, methods, tools and instruments in the field of scientific research;

9. Apply methods of defining and protecting intellectual property;

10. Collect and analyse information (search literature and databases);

11. Present and explain the results of scientific research to other scientists and non-professionals;12. Take on ethical and social responsibility for the success of research and the possible consequences of impact on the wider community;

13. Plan and run multidisciplinary international scientific projects (drafting of scientific research projects, research conduct organization, timely detection of potential problems, identifying the necessary resources, guiding the research team);

14. Writing and reporting (speaking skills and listening skills, ability to present data and research results);

15. Express personal, professional and ethical attitude;

16. Face the new challenges of society and economy and by applying the results of scientific research contribute to social and economic development.

RECOMMENDATION BY THE EXPERT PANEL TO THE ASHE'S ACCREDITATION COUNCIL

Upon the completion of the re-accreditation procedure and the examination of the materials submitted (Self-Evaluation Report etc.), the visit to the higher education institution and interviews with HEI members in accordance with the visit protocol, the Expert Panel renders its opinion in which it recommends to the Accreditation Council of the Agency the following:

Issue a confirmation on compliance for performing parts of activities (renew the licence).

RECOMMENDATIONS FOR THE IMPROVEMENT OF THE STUDY PROGRAMME

- 1. It is recommended that the Programme ensures that its teachers and supervisors generate findings that can be published in higher-ranking journals.
- 2. The HEI should ensure that students have legitimate access to the full range of bibliographic material needed for their studies.
- 3. The Panel recommends that the Programme takes steps to ensure alignment with internationally recognized standards for doctoral programmes.
- 4. The Panel recommends that the learning outcomes relating to the contribution to social and economic development is reviewed for its relevance and possibly deleted.
- 5. The HEI should ensure that staff makes use of the published learning outcomes in assessment.
- 6. The Programme should devise a scheme to continuously monitor the appropriateness of teaching methods, perhaps through review by colleagues.
- 7. The Programme should ensure that its expectation that general (transferable) courses are mandatory is effectively communicated to students and staff.
- 8. HEI/Programme should ensure that all information about the program in the website is available in English
- 9. It is recommended that the HEI/programme develop and implement a scheme for training supervisors in doctoral supervision.

ADVANTAGES OF THE STUDY PROGRAMME

- 1. Low ration of students : teachers/supervisors.
- 2. Commitment of the supervisor on the funding and promotion of the doctoral candidates.
- 3. Strong plans for the development of the program.
- 4. The people responsible of the program have a high-awareness of the program limitations.

DISADVANTAGES OF THE STUDY PROGRAMME

- 1. The relatively high proportion of students that are currently inactive.
- 2. Lack of transparency on how funds are spent.

EXAMPLE OF GOOD PRACTICE

1. High level of scientific communication between students and supervisors/teachers.

COMPLIANCE WITH THE PRESCRIBED CONDITIONS FOR THE DELIVERY OF A STUDY PROGRAMME

Minimal legal conditions:	YES/NO
	notes
1. Higher education institution (HEI) is listed in the Register of Scientific	YES
Organisations in the scientific area of the programme, and has a positive	
reaccreditation decision on performing higher education activities and	
scientific activity.	
2. HEI delivers programmes in the two cycles leading to the doctoral	YES
programme, i.e., first two cycles in the same area and field/fields (for	
interdisciplinary programmes), and employs a sufficient number of teachers as	
defined by Article 6 of the Ordinance on the Content of a Licence and	
Conditions for Issuing a Licence for Performing Higher Education Activity,	
Carrying out a Study Programme and Re-Accreditation of Higher Education	
Institutions (OG 24/10).	
3. HEI employs a sufficient number of researchers, as defined by Article 7 of	YES
the Ordinance on Conditions for Issuing Licence for Scientific Activity,	
Conditions for Re-Accreditation of Scientific Organisations and Content of	
Licence (OG 83/2010).	
4. At least 50% of teaching as expressed in norm-hours is delivered by	YES
teachers employed at the HEI (full-time, elected into scientific-teaching titles).	
5. Student: teacher ratio at the HEI is below 30:1.	YES
6. HEI ensures that doctoral theses are public.	YES
7. HEI launches the procedure of revoking the academic title if it is determined	YES
that it has been attained contrary to the conditions stipulated for its	
attainment, by severe violation of the studying rules or based on a doctoral	
thesis (dissertation) that has proved to be a plagiarism or a forgery according	
to provisions of the statute or other enactments.	
Additional/ recommended conditions of the ASHE Accreditation Council	
for passing a positive opinion	
1. HEI (or HEIs in joint programmes) has at least five teachers appointed to	YES
scientific-teaching titles in the field, or fields relevant for the programme	
involved in its delivery.	
2. In the most recent reaccreditation, HEI had the standard Scientific and	YES
Professional Activity marked as at least "partly implemented" (3).	
3. The doctoral programme is aligned with the HEI's research strategy.	YES
4. The candidate : supervisor ratio at the HEI is not above 3:1.	YES
5. All supervisors meet the following conditions:	
a) PhD, elected into a scientific title, holds a scientific or a scientific-teaching	a) YES
position and/or has at least two years of postdoctoral research experience;	
b) active researcher in the scientific area of the programme, as evidenced by	b) YES
publications, participation in scientific conferences and/or projects in the past	
five years (table 2, Supervisors and candidates);	
	c) YES

c) confirms feasibility of the draft research plan upon admission of the	
candidate (or submission of the proposal)	d) YES
d) ensures the conditions (and funding) necessary to implement the	
candidate's research (in line with the draft research plan) as a research project	
leader, co-leader, participant, collaborator or in other ways;	e) NO
e) trained for the role before assuming it (through workshops, co-supervisions	
etc.);	f) YES
f) received a positive opinion of the HEI on previous supervisory work.	
6. All teachers meet the following conditions:	
a) holds a scientific or a scientific-teaching position;	a) YES
b) active researcher, recognized in the field relevant for the course (table 1,	b) YES
Teachers).	
7 The supervisor normally does not participate in the assessment committees	VEC
7. The supervisor normany does not participate in the assessment committees.	YES
8. The programme ensures that all candidates spend at least three years doing	YES YES
8. The programme ensures that all candidates spend at least three years doing independent research (while studying, individually, within or outside courses),	YES
8. The programme ensures that all candidates spend at least three years doing independent research (while studying, individually, within or outside courses), which includes writing the thesis, publishing, participating in international	YES
8. The programme ensures that all candidates spend at least three years doing independent research (while studying, individually, within or outside courses), which includes writing the thesis, publishing, participating in international conferences, field work, attending courses relevant for research etc.	YES
 8. The programme ensures that all candidates spend at least three years doing independent research (while studying, individually, within or outside courses), which includes writing the thesis, publishing, participating in international conferences, field work, attending courses relevant for research etc. 9. For joint programmes and doctoral schools (at the university level): 	YES YES YES ¹
 8. The programme ensures that all candidates spend at least three years doing independent research (while studying, individually, within or outside courses), which includes writing the thesis, publishing, participating in international conferences, field work, attending courses relevant for research etc. 9. For joint programmes and doctoral schools (at the university level): cooperation between HEIs is based on adequate contracts; joint programmes 	YES YES YES ¹
 8. The programme ensures that all candidates spend at least three years doing independent research (while studying, individually, within or outside courses), which includes writing the thesis, publishing, participating in international conferences, field work, attending courses relevant for research etc. 9. For joint programmes and doctoral schools (at the university level): cooperation between HEIs is based on adequate contracts; joint programmes are delivered in cooperation with accredited HEIs; the HEI delivers the 	YES YES YES ¹
 8. The programme ensures that all candidates spend at least three years doing independent research (while studying, individually, within or outside courses), which includes writing the thesis, publishing, participating in international conferences, field work, attending courses relevant for research etc. 9. For joint programmes and doctoral schools (at the university level): cooperation between HEIs is based on adequate contracts; joint programmes are delivered in cooperation with accredited HEIs; the HEI delivers the programme within a doctoral school in line with the regulations and ensures 	YES YES YES ¹
 8. The programme ensures that all candidates spend at least three years doing independent research (while studying, individually, within or outside courses), which includes writing the thesis, publishing, participating in international conferences, field work, attending courses relevant for research etc. 9. For joint programmes and doctoral schools (at the university level): cooperation between HEIs is based on adequate contracts; joint programmes are delivered in cooperation with accredited HEIs; the HEI delivers the programme within a doctoral school in line with the regulations and ensures good coordination aimed at supporting the candidates; 	YES YES YES ¹
 8. The programme ensures that all candidates spend at least three years doing independent research (while studying, individually, within or outside courses), which includes writing the thesis, publishing, participating in international conferences, field work, attending courses relevant for research etc. 9. For joint programmes and doctoral schools (at the university level): cooperation between HEIs is based on adequate contracts; joint programmes are delivered in cooperation with accredited HEIs; the HEI delivers the programme within a doctoral school in line with the regulations and ensures good coordination aimed at supporting the candidates; at least 80% of courses are delivered by teachers employed at HEIs 	YES YES YES ¹

¹ Edited after ASHE information system MOZVAG was updated for joint delivery of the programme. Analytical appendix from MOZVAG was adopted at Accreditation Board Session.

QUALITY ASSESSMENT

1. RESOURCES: TEACHERS, SUPERVISORS, RESEARCH CAPACITIES AND INFRASTRUCTURE	
1.1. HEI is distinguished by its scientific/ artistic achievements in the discipline in which the doctoral study programme is delivered.	High level of quality This Programme includes high-quality science for applied marine sciences research in Croatia.
1.2. The number and workload of teachers involved in the study programme ensure quality doctoral education.	Improvements are necessary The workload of teachers is quite high, which does not let them spend more time supporting the candidates in other tasks like writing, lab work, etc. It is therefore recommended that the Programme/HEI finds a solution for this issue to enhance the effectiveness of the Programme.
1.3. The teachers are highly qualified researchers who actively engage with the topics they teach, providing a quality doctoral programme.	Improvements are necessary In general, outputs as publications and h-indices are modest, but output quantity can be considered good if teaching loads are taken into consideration. The Self- Evaluation Report noted outputs of more than two papers per person per year, but the statistics supplied by the Programme indicated only approximately 1 paper per person per year, and the Panel heard that the discrepancy was caused by management information software issues. While some papers are in high-ranking journals, there is a significant tail and therefore a propensity of publishing in more local and lower ranking journals. It is recommended that the Programme ensures that its teachers and supervisors generate findings that can be published in higher-ranking journals.
1.4. The number of supervisors and their qualifications provide for quality in producing the doctoral thesis.	 High level of quality A sufficient number of quality supervisors (with candidate : supervisor ratio below 3:1) are available. Supervisors' qualifications are appropriate, though h-indices and outputs are again modest, and participation in international and/or national scientific research projects is not a strong feature, but is adequate to support the Programme. An Ordinance prescribes an annual check by the Study Council of students' progress and the monitoring of teachers and supervisors comes from this. Two consecutive negative reports will result in the withdrawal of supervisory duties. This scheme is relatively new, and there

		has yet to be a full cycle such that any sanction could be applied.
1.5.	The HEI has developed methods of assessing the qualifications and competencies of teachers and supervisors.	High level of quality A University Ordinance stipulates good criteria for being a supervisor, based on research competence. These criteria are used when the Studies Council appoints staff as supervisors.
1.6.	The HEI has access to high-quality resources for research, as required by the programme discipline.	Improvements are necessary Students reported satisfaction with the facilities available to them, though much equipment is available outside the Department and Faculty, and some is at the external organisations at which some students are employed. The HEI has solid plans over approximately the next year to equip a number of laboratories with relevant equipment to support the development of the programmes. Students and alumni reported that they could assess the research articles they needed, but often not through the University's systems, and were reliant on opportunistic means. The HEI will want to ensure that students have legitimate access to the full range of bibliographic material needed for their studies.
2.	INTERNAL QUALITY ASSURANCE OF THE PROGRAMME	
2.1.	The HEI has established and accepted effective procedures for proposing, approving and delivering doctoral education. The procedures include identification of scientific/ artistic, cultural, social and economic needs.	High level of quality The Programme is a fundamental part of applied marine research in Croatia, and is aligned with the strategic program of the University.
2.2.	The programme is aligned with the HEI research mission and vision, i.e. research strategy.	High level of quality The Programme is aligned with the strategic program of the University.
2.3.	The HEI systematically monitors the success of the programmes through periodic reviews, and implements improvements.	Improvements are necessary The University should improve the monitoring and communicating the outcomes effectively to teaching staff, supervisors and stakeholders.
2.4.	HEI continuously monitors supervisors' performance and has mechanisms for evaluating supervisors, and, if necessary,	High level of quality The Programme has good balance of annual report of students and supervisor's interaction, and frequent contact

	changing them and mediating between the supervisors and the candidates.	between PhD students, teachers and supervisors create a good scientific environment.
2.5.	HEI assures academic integrity and freedom.	Improvements are necessary The existence of a course related to science in society and ethics and the student' declaration of originality is unclear; no systematic check of plagiarism.
2.6.	The process of developing and defending the thesis proposal is transparent and objective, and includes a public presentation.	High level of quality The process of defending is transparent and includes a public presentation. One external member of the defence committee is included, often from Croatia.
2.7.	Thesis assessment results from a scientifically sound assessment of an independent committee.	High level of quality There is a clear obligation to publish articles in international journals and students get financially support to attend conferences through supervisor's project money.
2.8.	The HEI publishes all necessary information on the study programme, admissions, delivery and conditions for progression and completion, in accessible outlets and media.	Improvements are necessary There was information, but we could not access it in completeness or pertinence because of its lack of accessibility; it was in Croatian. All information should be translated to English and the homepage need to be improved.
2.9.	Funds collected for the needs of doctoral education are distributed transparently and in a way that ensures sustainability and further development of doctoral education (ensures that candidates' research is carried out and supported, so that doctoral education can be completed successfully).	Improvements are necessary It is unclear how the funds are spend and transparency needs to be improved.
2.10	. Tuition fees are determined on the basis of transparent criteria (and real costs of studying).	Improvements are necessary It is unclear how the funds are spend and transparency needs to be improved.
3.	SUPPORT TO DOCTORAL CANDIDATES AND THEIR PROGRESSION	
3.1.	The HEI establishes admission quotas with respect to its teaching and supervision capacities.	High level of quality Admission quota is adequate to the number of supervisors.
3.2.	The HEI establishes admission quotas on the basis of scientific/ artistic, cultural, social, economic and other needs.	High level of quality This study programme represents a unique one in its field, since it interconnects basic marine science and applied marine researching. This allows the students to interact

		with scientists and companies. The fundamental role of the Programme for Croatia is reflected in the career success of their alumni.
3.3.	The HEI establishes the admission quotas taking into account the funding available to the candidates, that is, on the basis of the absorption potentials of research projects or other sources of funding.	High level of quality Candidates are only accepted with a proof of funding in order to ensure that they will be able to complete their doctoral thesis.
3.4.	The HEI should pay attention to the number of candidates admitted as to provide each with an advisor (a potential supervisor). From the point of admission to the end of doctoral education, efforts are invested so that each candidate has a sustainable research plan and is able to complete doctoral research successfully.	High level of quality All admitted candidates are assigned to a supervisor at the beginning of their studies. They must submit a research program for the application procedure.
3.5.	The HEI ensures that interested, talented and highly motivated candidates are recruited internationally.	Improvements are necessary Although the Programme selects the best candidates based on grades, interest and personal interviews, it is very difficult for international candidates to be recruited due to the lack of English information/publicity on the website.
3.6.	The selection process is public and based on choosing the best applicants.	High level of quality Selection process is public and they select the best candidates based on grades, interest and personal interviews.
3.7.	The HEI ensures that the selection procedure is transparent and in line with published criteria, and that there is a transparent complaints procedure.	High level of quality Selection procedure ensures that the applicants are informed about the process including the reasons of rejection in case this happens.
3.8.	There is a possibility to recognize applicants' and candidates' prior learning.	High level of quality There is an official procedure to recognize candidates' prior learning.
3.9.	Candidates' rights and obligations are defined in relevant HEI regulations and a contract on studying that provides for a high level of supervisory and institutional support to the candidates.	High level of quality Candidates are informed about their rights and obligations, including study requirements and thesis submission, supervision rights and responsible person to contact in case there is a problem.

3.10	There are institutional support mechanisms for candidates' successful progression.	Improvements are necessary The Programme ensures an adequate support for candidate progression through the supervisor's commitment to support and fund the doctoral thesis. However, the Programme should establish the reasons for student inactivity, analyse these data and devise a strategy to support students in order to avoid inactive students and make progress in the programme.
4.	PROGRAMME AND OUTCOMES	
4.1.	The content and quality of the doctoral programme are aligned with internationally recognized standards.	Improvements are necessary Interdisciplinarity is claimed by virtue of the Universities of Split and Dubrovnik cooperating, though the list of project titles supplied by the Programme did not show strong interdisciplinary. The Self-Evaluation Report was largely silent on alignment with internationally recognized standards, and the staff that the Panel met indicated that such alignment was in progress, and a shift to a more research focused programme will help in this respect. Nevertheless, the Panel considered the lack of alignment as a weakness and recommends that the Programme take steps to ensure alignment with internationally recognized standards for doctoral programmes
4.2.	Programme learning outcomes, as well as the learning outcomes of modules and subject units, are aligned with the level 8.2 of the CroQF. They clearly describe the competencies the candidates will develop during the doctoral programme, including the ethical requirements of doing research.	Improvements are necessary The programme learning outcomes (LO) are, in general, brief and generic enough to allow flexibility in meeting them. However, one LO addresses the contribution to social and economic development, and it was not clear where this was met in the Programme. Consequently, the Panel recommend that the LO relating to the contribution to social and economic development is reviewed for its relevance and possibly deleted. A short and effective course in research ethics is mandatory.
4.3.	Programme learning outcomes are logically and clearly connected with teaching contents, as well as the contents included in supervision and research.	High level of quality Programme learning outcomes have been mapped to the curriculum and, with the exception mentioned above, the mapping seems appropriate.
4.4.	The doctoral programme ensures the achievement of learning outcomes and competencies aligned with the level 8.2 of the CroQF.	Improvements are necessary The theses viewed by the Panel were clearly at doctoral level, showing doctoral level outputs as defined in the CroQF, and met some of the more generic learning outcomes set by the University. The Panel also viewed a small number of publications by students in journals of a range of quality.

	However, learning outcomes are not routinely used to guide assessments and assessment processes, and there may be an uncoupling of assessment outcomes and the achievement of LOs. The University should ensure that staff makes use of the published learning outcomes in assessment.
4.5. Teaching methods (and ECTS, if applicable) are appropriate for level 8.2 of the CroQF and assure achievement of clearly defined learning outcomes.	Improvements are necessary The teaching methods, which often involve individualised and interactive sessions, based around research literature and practice, provide a firm basis for doctoral study and are appreciated by students who valued being treated more like colleagues than students. However, as regard to the level, the teaching methods, and the ECTS attracted by the courses, show some alignment to the LOs and level 8.2 of the CroQF, but the Panel was not convinced that all teaching was at doctoral level, and there was some blurring between doctoral and master's levels. Accordingly, the Panel recommend that all teaching be reviewed to ensure that it is firmly situated at level 8.2 of the CroQF. The Panel heard that teaching quality and teaching methods are assessed only by the performance of students and evaluation by students. The Programme should devise a scheme to continuously monitor the appropriateness of teaching methods, perhaps through review by colleagues.
4.6. The programme enables acquisition of general (transferable) skills.	Improvements are necessary There are some general courses at both University and programme level on, for example, project development and methods in scientific research, which students reported were of high quality. However, the Panel heard contradictory reports on whether these courses were mandatory or not. The Programme should ensure that its expectation that these courses are mandatory is effectively communicated students and staff.
4.7. Teaching content is adapted to the needs of current and future research and candidates' training (individual course plans, generic skills etc.).	High level of quality This is a strong feature of some elements of the Programme, and is determined by the number of students following a course: if the number is low, each student receives individual tuition, focused on developing her/his thesis topic; if the number is greater, then more didactic methods are used. Nonetheless, all students experience a significant proportion of flexible delivery.
4.8. The programme ensures quality	High level of quality

Nevertheless, the Panel heard that many students travel
abroad for part of their studies, often having overseas
supervisors. Students were aware of opportunities offered
by Erasmus programmes.
The Programme aspires to be more internationally active,
and a first acknowledged step is to be internationally visible.
Theses can and have been produced in English.

* NOTE: RECOMMENDATIONS OF THE EXPERT PANEL TO THE ASHE'S ACCREDITATION COUNCIL AND QUALITY LABEL

The role of the Expert Panel in the re-accreditation of doctoral study programmes is manifold. The Expert Panel or part of the Expert Panel visiting a higher education institution drafts a report on the basis of a self-evaluation report, the accompanying relevant documentation, and a site visit to HEI. The draft report is adopted by all members of the Cluster Expert Panel, while the president of the Cluster Expert Panel is responsible for coordinating the assessment levels.

The report contains an assessment on whether a doctoral study programme delivered at a higher education institution complies with the prescribed laws and by-laws, as well as any additional/recommended requirements defined by the Agency's Accreditation Council, and whether a higher education institution can obtain a positive, i.e. satisfactory quality assessment according to the criteria set out in this document. Moreover, the Expert Panel must make recommendations for quality improvement.

Based on the assessment of all these elements, the Expert Panel may propose to the Accreditation Council of the Agency to issue either a confirmation on compliance, a letter of expectation for the period up to three (3) years in which period the higher education institution should eliminate the identified deficiencies, or to deny the license.

If the Expert Panel has assessed that a doctoral study programme delivered by a higher education institution does not meet legal and other requirements or that the quality of a study programme is not ensured (i.e. that HEI does not meet additional requirements or recommendations made by the Accreditation Council, or has a very poor quality assessment), they should propose to the Accreditation Council to deny the license.

If the Expert Panel considers that the relevant laws and bylaws have been met by a higher education institution, but that certain elements mentioned above do not meet the quality requirements, while they consider that the identified shortcomings can be corrected within a time frame of three years, they should issue a letter of expectation.

If the Expert Panel considers that all legal and additional/recommended requirements have been met and the quality assessment is satisfactory, i.e. that a study programme fulfils the learning outcomes appropriately defined for that level and scientific area, they may propose the issuance of a certificate and have a HEI commit to quality improvement and reporting to the Agency during the follow-up period.

Finally, if the Expert Panel has, in accordance with the criteria mentioned above, proposed issuing the certificate of compliance and assessed that, in addition to meeting the minimum quality requirements – i.e. the qualification framework level - for a study programme, the programme should be identified as a doctoral programme of a 'high level of quality', the Expert Panel may propose to the Agency's Accreditation Council that such a doctoral study programme be awarded the 'high quality label'. Thus the Agency, with the consent of the Accreditation Council, grants a higher education institution the right to use the label for their academic and promotional purposes.

The 'high quality label' cannot be proposed or awarded to a programme or a higher education institution that does not comply with the requirements laid down by the laws and bylaws mentioned in this document, and any additional requirements recommended by the Accreditation Council. Moreover, the

quality assessment awarded to a study programme should reflect a high level of quality inasmuch that at least half of the sub-criteria in each of the quality assessment criteria are assessed as being of high quality. The Accreditation Council of the Agency issues a final opinion on the label awarded. The content and form of the quality labels shall be prescribed by the Agency in a relevant general act.

The Accreditation Council of the Agency discusses the final report with all recommendations and suggestions, and issues their opinion on the report. Based on a prior opinion of the Accreditation Council, the Agency issues an Accreditation Recommendation to the minister responsible for science and higher education, and upon receipt of the minister's final decision on the outcome of the procedure, awards the 'high quality label" to a higher education institution.