

Report of the Expert Panel on the REACCREDITATION

of the University Postgraduate (Doctoral) Programme

Pharmacy and Biochemistry
Faculty of Pharmacy and Biochemistry





Date of the visit: December 5th, 2016

January, 2017

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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 Pharmacy and Biochemistry on the basis of the Self-Evaluation Report of the Programme, other documentation submitted and a visit to the Faculty of Pharmacy and Biochemistry, University of Zagreb.

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:

- 1. Prof. Michael Drinnen, Newcastle University/ Freeman Hospital, UK
- 2. Prof. Albert Selva O'Callaghan, Autonomous University of Barcelona/ Hospital Universitari General Vall d'Hebron, Spain
- 3. Prof. Gernot Riedel, Aberdeen University, UK
- 4. Arturo Moncada Torres, doctoral student, KU Leuven, Belgium
- 5. Dr. sc. Senthil Kaniyappan, postdoctoral researcher, Max Planck Institute of Metabolism Research and DZNE (German Centre for Neurodegenerative Diseases), Germany
- 6. Dr. sc. Patrycja Kozik, Group Leader, MRC Laboratory of Molecular Biology, Cambridge Biomedical Campus, Cambridge University, UK
- 7. Prof. Peter Hylands, King's College London, UK (site visit: Faculty of Pharmacy and Biochemistry, Zagreb)

- 8. Prof. Gonzalo Herradón, University CEU San Pablo, Spain
- 9. Marcin Ciszewski, doctoral student, Medical University of Łódź, Poland
- 10. Prof. Gábor Gerber, Semmelweis University, Hungary
- 11. Prof. Robert Allaker, Barts and The London School of Medicine and Dentistry, Queen Mary University of London, UK
- 12. Prof. Pedro Sousa Gomes, University of Porto, Portugal
- 13. Prof. Daniel W Lambert, University of Sheffield, UK
- 14. Prof. Zdenek Broukal, Charles University, Czech Republic
- 15. Nemanja Sarić, doctoral student, King's College London, UK
- 16. Prof. Suzanne Held, University of Bristol, UK
- 17. Prof. David Sargan, University of Cambridge, UK
- 18. Vitalina Drobnytska, doctoral student, University of Greenwich, UK
- 19. Dr. sc. Prateek Mahalwar, Max Planck Institute for Developmental Biology/ EY, Germany

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

- Prof. Peter Hylands, King's College London, UK
- prof. Gonzalo Herradón, University CEU San Pablo, Spain
- Marcin Ciszewski, doctoral candidate, Medical University of Łódź, Poland

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

- Irena Petrušić, coordinator, ASHE,
- Goran Briški, interpreter at the site visit, ASHE,
- Lida Lamza, 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,
- External stakeholders,
- Alumni,

The Expert Panel also had a tour of the library, IT rooms, student register desk and the classrooms.

SHORT DESCRIPTION OF THE STUDY PROGRAMME

Name of the study programme contained in the licence: Pharmacy and Biochemistry Institution providing the programme: Faculty of Pharmacy and Biochemistry Education provider(s): Faculty of Pharmacy and Biochemistry, University of Zagreb Place of delivery: Zagreb, 1 A. Kovačić Street Scientific area and field: Biomedicine and Healthcare, Pharmacy

Learning outcomes of the study programme:

- assess and analyse various theories, methods and procedures in research, and conduct internationally recognised research projects;
- formulate research problems, choose scientific equipment, instruments and tools for analysis in the scientific subfield of Pharmacy, in the branches of Pharmacy and Medical Biochemistry, and plan and conduct research at the highest scientific research level recognisable in the international scientific community;
- select appropriate computer programmes and statistical data analysis tools, and make conclusions based on obtained results;
- evaluate the usefulness and limitations of relevant scientific methods;
- plan and conduct original scientific research that will lead to new insights, which may be published in the form of scientific articles in internationally recognised journals in their field of research:
- critically examine and evaluate scientific research results in their field plan and conduct research with professional and ethical integrity, and identify and assess relevant environmental and ethical issues in their field of research;
- assess the risks of their work/research in terms of health, safety and ecology;
- publish scientific research results through relevant national and international sources, participate in scientific discussions at international conferences, and present and promote research results in both the private and public sectors, and the general public;
- disseminate scientific insights and communicate using scientific arguments with colleagues, the wider scientific community and the social environment in their field of expertise.

Number of doctoral candidates: 103

Number of teachers: 62 Number of supervisors: 62

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:

1. **issue a confirmation on compliance** for performing parts of activities (renew the licence and label it as 'high quality')

RECOMMENDATIONS FOR THE IMPROVEMENT OF THE STUDY PROGRAMME

- 1. Improve supervisor's training.
- 2. Encourage stays of supervisors abroad, including short teaching stays (e.g. ERASMUS).
- 3. Increase practical teaching in courses.
- 4. Increase training in teaching for PhD students.
- 5. Increase internal funding for research (e.g. by decreasing teaching costs).

ADVANTAGES OF THE STUDY PROGRAMME

- 1. The whole PhD program is mainly concentrated on research.
- 2. Mandatory and elective courses are regarded by PhD students as well organised and useful.
- 3. Close monitoring of performance of PhD students is useful.
- 4. It fills a scientific need in the field.
- 5. Students' satisfaction.

DISADVANTAGES OF THE STUDY PROGRAMME

- 1. Insufficient teaching courses for PhD students obliged to teach undergraduates.
- 2. Mentors also indicated problem with lack of teaching courses available for them.
- 3. Lack of funding to perform further research.
- 4. Lack of supervisor training in some cases.

EXAMPLES OF GOOD PRACTICE

- 1. The number of teaching hours (practices) for PhD students is individually negotiated with the PhD student.
- 2. Monitoring of the success of the programmes.
- 3. HEI established a transparent system of enrolment into the programme, preparing process of developing and defending the thesis, proposal.
- 4. Close monitoring of performance of PhD students.
- 5. Comply with relevant ordinances.

6.								ssary information	
	on the study completion.	programme,	admissions,	delivery	and	conditions	for	progression and	
	1								

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 Organisations in the scientific area of the programme, and has a positive reaccreditation decision on performing higher education activities and scientific activity.	YES
2. HEI delivers programmes in the two cycles leading to the doctoral 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).	YES
HEI employs a sufficient number of researchers, as defined by Article 7 of the Ordinance on Conditions for Issuing Licence for Scientific Activity, Conditions for Re-Accreditation of Scientific Organisations and Content of Licence (OG 83/2010).	YES
3. At least 50% of teaching as expressed in norm-hours is delivered by teachers employed at the HEI (full-time, elected into scientific-teaching titles).	YES
4. Student: teacher ratio at the HEI is below 30:1.	YES
5. HEI ensures that doctoral theses are public.	YES
6. HEI launches the procedure of revoking the academic title if it is determined 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.	YES
Additional/ recommended conditions of the ASHE Accreditation Council	YES/NO
for passing a positive opinion	notes
1. HEI (or HEIs in joint programmes) has at least five teachers appointed to scientific-teaching titles in the field, or fields relevant for the programme involved in its delivery.	YES
2. In the most recent reaccreditation, HEI had the standard Scientific and Professional Activity marked as at least "partly implemented" (3).	YES
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 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 publications, participation in scientific conferences and/or projects in the	YES

c) confirms feasibility of the draft research plan upon admission of the candidate (or submission of the proposal); 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) trained for the role before assuming it (through workshops, co-supervisions etc.); 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; b) active researcher, recognized in the field relevant for the course (table 1, Teachers). 7. The supervisor normally does not participate in the assessment committees. 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	past five years (table 2, Supervisors and candidates);	
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	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	programme within a doctoral school in line with the regulations and ensures	YES
good coordination aimed at supporting the candidates;	good coordination aimed at supporting the candidates;	
at least 80% of courses are delivered by teachers employed at HEIs within	at least 80% of courses are delivered by teachers employed at HEIs within	
the consortium.	the consortium.	_

QUALITY ASSESSMENT

	Quality assessment ("high level of quality" or "improvements are necessary") and the explanation of the Expert Panel
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 The number of papers published in the 5-year period 2011-2015 is consistent with a high level of quality of HEI's scientific achievements. The ratio papers/teacher for that period is fair (6.6) and the number of citations for the 407 registered publications (2911) is reasonable, taking into account that a few of those papers were heavily cited (h-index = 26). The only concern is the HEI's trend in number of publications during the last few years, 35% decrease in 2015 vs. 2011, although this is not unusual for most European HEIs and should not be a problem unless this situation is prolonged for the next few years. The Faculty organizes many national and international conferences within the fields of Pharmacy and Medical Biochemistry, including prestigious ones such as CESPT.
1.2. The number and workload of teachers involved in the study programme ensure quality doctoral education.	High level of quality All 62 Faculty teachers participate in delivering the study programme, and 24 are course leaders covering 66% of the teaching load of the doctoral study programme. Teacher workloads are in line with the normative provisions.
1.3. The teachers are highly qualified researchers who actively engage with the topics they teach, providing a quality doctoral programme.	High level of quality According to the Faculty number of scientific publications, most of teachers are at the top of the ranking of the authors publishing in the field of pharmacy.
1.4. The number of supervisors and their qualifications provide for quality in producing the doctoral thesis.	High level of quality The candidate: supervisor ratio is 1.66. The successful rate of the doctoral topic proposals submitted by PhD students is appropriate. During the last five years the number of papers published by PhD students is reasonable and they are first authors in many cases.
1.5. The HEI has developed methods of	High level of quality

assessing the qualifications and SER makes very clear that scientific productivity of of teachers supervisors is the corner stone in assessing supervision competencies and quality and lists the criteria that HEI follows at five levels, supervisors. from those prescribed by law to those prescribed by ordinances. In addition, potential supervisors must send a completed form at the beginning of every academic year for the Doctoral Study Programme Council to verify they meet the requirements to supervise PhD students. Furthermore, the Faculty conducts an online questionnaire-based student survey of supervisors. High level of quality During the last few years, the Faculty has done all the necessary efforts to provide with all the necessary equipment for teaching and research to PhD students and 1.6. The HEI has access to high-quality supervisors. Faculty is efficient in having a proper resources for research, as required by catalogue of scientific equipment and in seeking productive partnerships that are often involved in the the programme discipline. acquisition of modern equipment. Some examples include Building Innovation Support through Collaboration Network (BISTEC) and the Partnership in Research Programme funded by the Croatian Science Foundation and PLIVA Hrvatska. 2. INTERNAL QUALITY ASSURANCE OF THE PROGRAMME High level of quality The HEI has established regulations on launching and approving doctoral programmes. The programme has been launched and approved in line with the regulations. 2.1. The HEI has established and accepted The programme was assessed by the National Science effective procedures for proposing, Council for Higher Education (Licence, 2006). Programme approving and delivering doctoral revised on 2015/2016 and amendments approved by the education. The procedures include Senate of the University. identification of scientific/ artistic, The programme justification is documented. It is the only cultural, social and economic needs. postgraduate university programme in Pharmacy in the Republic of Croatia. The programme addresses well the need of specific research activities in the science, education and business sectors. High interdisciplinary approach. High level of quality 2.2. The programme is aligned with the The programme in Pharmaceutical-Biochemical Sciences HEI research mission and vision, i.e. is aligned with the general strategic document of the research strategy.

Faculty and the Strategic Program of Scientific Research The SER properly discuss how the programme content,

	choice of candidates and supervisors and other aspects of the programme are aligned with the quality of the research strategy. A research strategy demonstrates the HEI's research focus and potentials.
2.3. The HEI systematically monitors the success of the programmes through periodic reviews, and implements improvements.	High level of quality The success of the programme is monitored by: - periodical review by international and/or national relevant bodies, including the Doctoral Study Programme Council - University of Zagreb conducts periodic evaluations of the programme - thematic evaluation by ASHE (2012/13). Implements improvements as a result of reviews: - reduce PhD students' lecture workload - increase the proportion of elective course contents - increase proportion of research activities during doctoral programme. - improve enrolment policy to ensure better students' performance (narrow field of doctoral thesis, statement of content of potential supervisor, funding, etc.).
2.4. HEI continuously monitors supervisors' performance and has mechanisms for evaluating supervisors, and, if necessary, changing them and mediating between the supervisors and the candidates.	High level of quality The performance of supervisors is monitored by: - feedback from current and former candidates; - completion rates; - the quality of supervision is assessed using the documents meant to ensure it, as described in the SER and as presented during the site visit. The SER properly discusses the candidates' research performance and completion rates. Mechanisms of monitoring and improving the quality of supervision exist: documents, procedures and practices of changing supervisors and mediating in case of problems between a supervisor and a candidate; documents, procedures and practices of awarding successful supervisors, etc.
2.5. HEI assures academic integrity and freedom.	High level of quality HEI has procedures that assure academic integrity (prevent plagiarism and other forms of academic fraud) and freedom of research. SER properly discusses 5 specific practices used in the prevention of potential plagiarism including statements of authenticity and public information all through the doctoral thesis process.
2.6. The process of developing and	High level of quality

The HEI: defending the thesis proposal is transparent objective, and - has developed the procedures of producing and and includes a public presentation. defending the doctoral thesis proposal (rules as described in articles 16 and 11 of the University's Ordinance on Doctoral Study Programmes. - forms a committee of 5 members, at least one member of which is external. - has a detailed proposal defence protocol, proposal templates and clear presentation guidelines. HEI has templates for proposal assessment. All necessary documents were information was available for to the Expert Panel. High level of quality The HEI has developed the procedures of developing and defending the doctoral thesis (rules, forms). HEI encourages participation of external or international examiners in the thesis defence committee; examples were provided. HEI encourages candidates to have at least one publication as first author with an internationally competitive peer-review in the field of thesis. SER should list the types of theses (as accepted at the HEI 2.7. Thesis assessment results from a and their numbers in the EU) in the past five years. scientifically sound assessment of an HEI has created and published thesis guidelines and were independent committee. available to the Expert Panel. HEI has created and published thesis assessment guidelines; and were available to the Expert Panel. HEI has created and published a detailed thesis defence protocol and were available to the Expert Panel. HEI has developed and published a template for recording the thesis defence; and was available to the Expert Panel. All necessary documents were available for the Expert Panel. Reaccreditation had access to theses from the past five years. High level of quality 2.8. The HEI publishes all necessary All necessary information are published online and is upinformation on the study programme, to-date, it is also available on the Faculty documents. admissions, delivery and conditions Faculty's web pages: for progression and completion, in http://www.pharma.unizg.hr/hr/studij-iaccessible outlets and media. studiranje/poslijediplomski-doktorski-studij/. 2.9. Funds collected for the needs of High level of quality

doctoral education are distributed

transparently and in a way that ensures sustainability and further The HEI has established a system of funding the programme and the candidates within the institution. The

HEI secures funding, applies to calls for co-funding

(ensures that candidates' research is carried out and supported, so that doctoral education can be completed successfully).

development of doctoral education doctoral programmes, establishes partnerships and finds other sources of (candidates') research funding useful for solving social, scientific or economic challenges. The HEI secures funding for the candidates' research and research results' dissemination costs. The SER explains what tuition fees are spent on, in accordance with relevant ordinance. In summary:

- 60% teaching costs.
- 37% Faculty's activities (equipment, procurement of literature, etc.).
- 3% University's operating expenditure.

2.10. Tuition fees are determined on the basis of transparent criteria (and real costs of studying).

High level of quality

The HEI explains in the SER, it is explained the amount of the tuition fee, which was determined based on:

- The costs of premises and equipment use
- Administration costs
- Teaching and research costs.

3. SUPPORT TO **DOCTORAL CANDIDATES** AND **THEIR PROGRESSION**

High level of quality

3.1. The HEI establishes admission quotas with respect to its teaching and supervision capacities.

The number of PhD students that the Faculty enrols depends on the Faculty's available supervision and their teaching workload, research and premises/facility capacities based on a decision on enrolment quotas passed by the Faculty Council on the recommendation of the Doctoral Study Programme Council. Enrolment quotas are defined on the basis of the needs of higher education institutions, institutes, state institutions and the business sector.

The duties and responsibilities of supervisors, cosupervisors and PhD students are prescribed by the Ordinance on Doctoral Study Programmes of the University.

3.2. The HEI establishes admission quotas on the basis of scientific/ artistic, cultural, social, economic and other needs.

High level of quality

The HEI discusses the admission quotas with respect to the needs of the society and the academia, while taking into account the number of students expected to complete the programme. A programme admission quotas are shown to be based on wider scientific/ artistic, cultural, social and economic needs.

No doctor of science who completed a doctoral study programme at the Faculty is unemployed, many of PhDs work in business environment.

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

Most PhD students are financed by the MSES and the Faculty of Pharmacy and Biochemistry, because they are employed as junior researchers at the University of Zagreb Faculty of Pharmacy and Biochemistry. The tuition fees of PhD students employed in the private sector are paid by the companies that they work for. PhD students are satisfied with their financial situation.

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

The implementation of the postgraduate study programme is monitored by many competent University bodies. The PhD students have to defend the topic of their thesis first, and then, after finishing the research and preparing of the dissertation – defend the PhD thesis. The program completion rate is nearly 100%.

3.5. The HEI ensures that interested, talented and highly motivated candidates are recruited internationally.

High level of quality

The best graduates with a strong propensity for research are admitted to the Faculty's doctoral study programme. Calls for the admission of PhD students are announced interested, motivated to the programme. Admission to the doctoral study programme is carried out on the basis of a public call for the admission of PhD students, which is announced once in each academic year by the Faculty Council. The call is advertised in the press and on the website of both the Faculty and the University, and contains the admission criteria, the documents required, tuition fee specifications, and the selection criteria.

3.6. The selection process is public and based on choosing the best applicants.

High level of quality

The selection process is transparent. The criteria of evaluation of applicants include their grade point average earned during their graduate study programme, interest expressed in scientific research, published papers, teacher and potential supervisor recommendations, and a proposed field of research. Applicant interviews are an integral part of the admission process and are conducted by the Doctoral Study Programme Council.

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

The Faculty ensures that the selection procedure is transparent and that applicants have the right to file complaints. The documents collected during public calls for the admission of PhD students are archived, and the

4.1. The content and quality of the doctoral	High level of quality
4. PROGRAMME AND OUTCOMES	
3.10.There are institutional support mechanisms for candidates' successful progression.	High level of quality The Faculty's PhD students are offered comprehensive institutional support in their research and the overall development of their careers by: • ensuring quality supervisors, • equipping research laboratories with state-of-the-art laboratory equipment, supplies and chemicals, • allocating funds from tuition fees for the purposes of PhD student research work, • organising workshops, conferences and summer schools which contribute to the development of transferable skills of PhD students, • monitoring the progression of PhD students through their studies (Annual Reports), • encouraging PhD students to publish papers in top quality journals in their field, • evaluating all scientific research activities of PhD students during the course of their studies.
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 Whether prior to admission or during admission to the doctoral study programme or during their studies, both PhD student candidates and PhD students may get familiar with their rights and obligations, primarily through the Guide to Doctoral Study Programmes at the University of Zagreb, which is available on the website. PhD students who are employed at the Faculty do not enter into a Study Programme Contract given that the rights and obligations of both parties are regulated by Employment Contracts. All other PhD students enter into a Study Programme Contract with the Faculty.
3.8. There is a possibility to recognize applicants' and candidates' prior learning.	High level of quality The Faculty has established a procedure of recognition of previous achievements relevant to the doctoral study programme (Decision and Ordinance on Postgraduate Study Programmes at the Faculty of Pharmacy and Biochemistry).
	list of selected applicants is public. Deadlines for both the filing of and handling complaints are set. Applicants who have been rejected have the right to inspect the exposition of the weaknesses and strengths of their application, and recommendations of the way that their research plans can be improved.

programme are aligned with The programme is research-oriented and focused on the internationally recognized standards. candidate's independent work. Teaching is included as required by the needs of candidate's research and enables the candidate to acquire generic skills and international experience. The programme content and used procedures are comparable programmes procedures and to international HEIs. The programme complies national and international professional standards. 4.2. Programme learning outcomes, as well **High level of quality** as the learning outcomes of modules The programme's intended learning outcomes comply and subject units, are aligned with the with national and international standards. The whole level 8.2 of the CroQF. They clearly programme is well written and clear, including objectives, describe the competencies outcomes, content and learning methods. The progress of the candidates will develop during the PhD candidates can be monitored at any time. doctoral programme, including the The programme provides competencies in all required ethical requirements of doing research. areas, including research ethics. 4.3. Programme learning outcomes are High level of quality logically and clearly connected with The learning outcomes are logically and clearly aligned teaching contents, as well as the with individual courses, supervisory work and research. contents included in supervision and research. 4.4. The doctoral programme ensures the High level of quality The quality and level of achieved learning outcomes is achievement of learning outcomes and competencies aligned with the level 8.2 assessed (level 8.2 of the CroQF.). The programme of the CroQF. managers presented all necessary documents. 4.5. Teaching methods (and High level of quality ECTS. applicable) are appropriate for level 8.2 The courses are delivered using various teaching methods of the CroQF and assure achievement of appropriate for the experimental character of conducted clearly defined learning outcomes. research: lectures, colloquia, research, experimental or laboratory work, methodological workshops etc. High level of quality programme provides acquisition of generic (transferable) skills, e.g. through workshops or other 4.6. The programme enables acquisition of forms of support for development of business and

pharmaceutical).

general (transferable) skills.

managerial skills, presentation, writing and project management skills, applying for funding etc. The Faculty actively cooperate with local and national companies (e.g.

4.7. Teaching content is adapted to the needs of current and future research and candidates' training (individual course plans, generic skills etc.).	student's needs and research plans.
	High level of quality The integral parts of the PhD programme are internationalisation and mobility. The Faculty attracts international faculty and excellent candidates to the programme, provides opportunities for research staff mobility, systematically provides information on opportunities for candidate mobility and encourages them to participate in international events.

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.