

**European Association
of Establishments for Veterinary Education**

**Association Européenne
des Etablissements d'Enseignement Vétérinaire**



Stage 1 Visitation Report of the Veterinary department of the University of Porto

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FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016
CONTENTS

Introduction

1. Objectives and Strategy
2. Organisation
3. Finances
4. Curriculum
 - 4.1 General Aspects
 - 4.2 Basic Subjects and Basic Sciences
 - 4.3 Animal Production
 - 4.4 Clinical Sciences
 - 4.5 Food Safety & Quality and Veterinary Public Health
 - 4.6 Electives, optional disciplines & other subjects
5. Teaching Quality and Evaluation
 - 5.1 Teaching Methodology
 - 5.2 Examinations
 - 5.3 Student Welfare
6. Physical Facilities and Equipment
 - 6.1 General
 - 6.2 Clinical Facilities and Organisation
7. Animals and Teaching Materials of Animal Origin
8. Library and Educational Resources
9. Admission and Enrolment
10. Academic Teaching and Support Staff
11. Continuing Education
12. Postgraduate Education
13. Research

Executive summary

Annex 1: Indicators

Annex 2: Decision of ECOVE

INTRODUCTION

The Institute of Biomedical Sciences Abel Salazar (ICBAS) was established in 1975 as an entity of the University of Porto (U.Porto). The scientific domains of ICBAS concern Health, Environment, Animal Production and Food Processing and Quality. The Veterinary Course started in 1994.

ICBAS was evaluated by EAEVE in November 2002 and was not approved, mainly because of insufficient:

-) autonomy of the Veterinary Curriculum Committee,
-) functional small animals clinical services,
-) facilities for large animals clinical services,
-) isolation units,
-) veterinary academic staff fully devoted to veterinary teaching.

Since that period and despite the drastic impact of the economic crisis on the funding of higher education in Portugal, ICBAS has worked to implement the Bologna process and most suggestions proposed by the 2002 Visitation team, with new facilities, amended procedures and additional veterinary academic staff.

The current ESEVT Visitation is performed in agreement with the Budapest SOP (2012).

1. OBJECTIVES & STRATEGY

1.1 Findings

The mission of ICBAS is to create, transmit and disseminate knowledge in the area of health and life sciences. The Integrated Master Degree in Veterinary Medicine (IMVM) is part of the ICBAS overall mission since it is integrated in the global concepts of 'one health' by its institutional proximity with the training in other disciplines, i.e. human medicine, biochemistry, bioengineering, aquatic sciences and pharmacy.

The objectives of the IMVM are listed in the document 'Professional general attributes and capacities for the newly graduated Veterinarian', where the Day One Competences (D1C) are described (see appendix 1 of the SER). This document was elaborated by the Scientific Committee of the IMVM, promulgated by the Head of ICBAS after consultation of its Scientific Council and made available on the Establishment website. Recently, the opinion of teachers, undergraduate veterinary students, alumni and stakeholders has been asked in order to assess the quality of these D1C, their adequacy with the society requirements and their implementation in the IMVM.

1.2 Comment

The objectives of the Establishment are in fact limited to a list of D1C. The latter are in agreement with those of EAEVE. Students and stakeholders have not been associated with their elaboration but are being associated with their evaluation.

However there is no Strategic Plan specifically devoted to the IMVM and its veterinary specific subjects, i.e. :

- a SWOT analysis of the current situation of the IMVM,
- the specific objectives for the near future of veterinary education, services and research,
- the operational plan, timing and monitoring for the implementation of these objectives.

This is particularly crucial for the development of the veterinary clinics department, e.g. amendment of the curriculum, recruitment and training of clinical staff, EBVS residency programmes, clinical records, balanced caseload in all species and disciplines, ..

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are not met because of the absence of a real strategic plan specifically devoted to the IMVM and its veterinary specific subjects.

1.3 Suggestions

It is strongly suggested to elaborate a real Strategic Plan for the future of the IMVM and its clinical training, in strong collaboration with relevant staff, students and stakeholders.

2. ORGANISATION

2.1 Findings

The IMVM is part of ICBAS which is a multidisciplinary college within the University of Porto with administrative, financial, pedagogical and scientific autonomy, although its statutes have to conform to the University statutes which, in turn, have to conform to the corresponding national legislation. All degrees provided by ICBAS are evaluated by the Agency for Assessment and Accreditation of Higher Education, a private agency which is a full member of ENQA.

ICBAS has several official bodies: Representative Council, Dean, Executive Committee, Scientific Committee, Pedagogical Committee, Ethics Committees and Student Association. Their statutory competences are described in appendix 2 of the SER. ICBAS is divided into 10 Departments, i.e. Anatomy, Aquatic Production, Behaviour Sciences, Chemistry, Immunophysiology and Pharmacology, Microscopy, Molecular Biology, Pathology and Molecular Immunology, Population Studies, and Veterinary Clinics. Each Department has one Director and one Department Council. The organigram of ICBAS is provided in the SER.

As the 4 other undergraduate degrees provided by ICBAS, IMVM (the 'veterinary' degree) has 1 Director, 1 Scientific Committee and 1 Monitoring Committee. The Scientific Committee is composed by the Director, an Assistant Director and 4 professors. The Monitoring Committee is composed by the Director, 1 professor and 2 students. Both committees are approved by the ICBAS Dean upon proposal by the Director. The Director ensures the normal functioning of the IMVM, oversees its quality and promotes the coordination between programmes and teaching methods of the various teaching units. The Scientific Committee and Monitoring Committee supervise the running of IMVM, debate the needs for change and promote the implementation of corrective measures.

2.2 Comments

The veterinary education, research and services of the University of Porto are fully included in ICBAS which is the real decision-making body. As a result, the veterinary part of it has little visibility and autonomy, except for the day-to-day management of the clinical services and for making suggestion of improvement.

On the other hand, the full integration of IMVM into ICBAS better contributes to collaborations with other disciplines/degrees and to the implementation of the 'one health' concept.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

2.3 Suggestions

None.

3 FINANCES

3.1 Findings

The financing of ICBAS follows an annual state budget proposed by the government under the Ministry of Science and Higher Education. Within the University the distribution of the public funding is done by the Rector office upon discussion with the Deans. This public funding is allocated to the establishments on the basis of a formula that includes the number of students, a cost factor for each specific area; the graduation efficiency of the undergraduate and advanced courses; the qualification of the teaching staff and a national student basic budgetary allocation.

The remaining of the revenue for the establishment is acquired directly by the Dean and includes student's fees, research funding and income from service provided. Undergraduate student fees are annually 999 € per student a year. ICBAS had in 2014 a total budget from 14.245 Mio €, where 9.7 Mio € came from the University and 4.49 Mio € were generated by the faculty. The Veterinary part of ICBAS generated in 2014 from the above amount 0.244 Mio € income from services and 0,388 Mio € from student fees.

There is no research income given for the veterinary related part of ICBAS. The establishments internal allocation of funds is decided by the Executive Committee; in 2014, 66% of the expenditure was allocated to salaries and 29% to the acquisition of goods and services. 20-25% overhead of research grants is retained by the Dean, 10-20% from the service income is retained also by the Dean, and the rest is managed by the head of the service.

However, it is difficult to exactly estimate the budget exclusively allocated to IMVM, because all Departments are involved in teaching veterinary subjects.

3.2 Comments

The allocation of the income to IMVM is difficult to estimate, since not all departments in ICBAS are fully involved in veterinary teaching. The distribution of public money to the faculties is decided by the rector's office along with discussion with the deans employing a formula with number of students, cost and efficiency factors and qualification of teaching staff. Income from services, student fees and research funding go directly to ICBAS. The internal allocation of funds is decided by the Executive Committee. There is also an internal formula for the distribution of money developed which includes the number and type of training hours, number of teachers with a PhD degree and the department's scientific productivity.

ICBAS is autonomous on its budget and there is a good flexibility of the Executive Committee in the management of funds. There is a "particular sensibility for issues that are specific to Veterinary Medicine". However, there is great concern on the financial constraints caused by national austerity policies (reduction of salaries 20%, impediments for career progression and for hiring new staff members). There is a clear need to invest money in staff qualification.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

3.3 Suggestions

It is suggested to continue to increase the income from research grants and services by improving the scientific and medical competences of the scientific staff.

4 CURRICULUM

4.1 GENERAL ASPECTS

4.1.1 Findings

Since in Portugal every Establishment is autonomous in the definition of Integrated Master in Veterinary Medicine (IMVM), the veterinary curriculum at Instituto De Ciências Biomédicas de Abel Salazar (ICBAS) is intended to match with the EU directive 36/2005 and the Bologna process. The present curriculum, approved by the Rector and ratified by the government in 2007, consists of 5.5 years (11 semesters) corresponding to 330 ECTS and confers a Master's Degree in Veterinary Medicine, upon approval in all core subjects and elaboration, public discussion and approval by a jury, of the final dissertation. The title gives the ability to be licensed by the national profession body (Ordem dos Médicos Veterinários) to exercise the veterinary profession.

The core curriculum is taught during the first 10 semesters (5 years - 59 CUs). The 11th semester is dedicated to electives, a professional training period (internship) or development of a research project, individually chosen by each student. Students are encouraged to attend an internship outside the Establishment.

Curricular integration is monitored by the IMVM Director, the student's evaluation of CUs and teachers and the Monitoring Committee.

A new model for a future curriculum is currently being discussed by the SCIMVM, and students and academic staff are involved in the process. However, and again due to the absence of a strategic plan including a SWOT analysis, it is not clear what are the weaknesses of the current curriculum that should be changed, and what are the overall aims and goals of the future curriculum.

4.1.2 Comments

The core curriculum covers all EU listed subjects.

External Practical Training in some clinical areas is attended only on a voluntary basis in the 11th semester.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

4.1.3 Suggestions

All students should be encouraged to participate to External Practical Training, especially within clinical sciences.

4.2 BASIC SUBJECTS & BASIC SCIENCES

4.2.1 Findings

Basic subjects and basic sciences are taught mostly during the first four semesters.

Pharmacology and therapeutics I and II courses are still taught to mixed (veterinary and non-veterinary students) classes.

For non clinical supervised practical training of basic sciences, students are generally divided into four groups of variable size. However they will generally not exceed 15 students.

Some courses of basic sciences (General microbiology, Veterinary microbiology, general agriculture and ecology) are also involved in the teaching of bio-safety and bio-security issues. The latter are then complemented in other courses of the veterinary curriculum.

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

4.2.2 Comments

The weight of basic subjects has been substantially reduced after the last EAEVE visitation. In the current curriculum there has been a reinforcement of a veterinary perspective in all basic subjects. There is an overall adequate balance between theoretical and supervised practical training in basic subjects and basic sciences. However, in some basic science subjects (e.g. Biological Chemistry I, Biological Chemistry II) the gap between incoming students' basic knowledge and the intended learning outcomes is not well attuned.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

4.2.3 Suggestions

In order to reduce the gap between incoming students' basic knowledge and the intended learning outcomes, the Visitation Team encourage the Establishment to reanalyse the content and the amount of information delivered in some basic science subjects.

4.3 ANIMAL PRODUCTION

4.3.1 Findings

In the SER the teaching of animal production subjects is not given separately according to the EU-subject list. The lectures are given by the several departments of ICBAS. Around 460 curriculum hours are given on CU like Animal ethology, Exognosis and animal handling, General agriculture and ecology, Animal genetics and breeding, Economy and business management, Animal nutrition and Animal production. 200 h are theoretical training and 213 are supervised practical training. On behalf of the weight of basic subjects the animal oriented animal handling and basic husbandry has been introduced in the first years and general agriculture with rural economics have been given more emphasis.

Animal welfare and behaviour are taught in several CUs (Ethics, Public health, Animal production and Sanitary inspection) also with an effort of integrated teaching of animal production subjects in various CUs (Animal production, Farm animal internal medicine and surgery, Epidemiology) considering the interaction between animal health, welfare and production performance.

4.3.2 Comments

The teaching of animal production subjects is well balanced. Strong efforts are made for integrated teaching of animal production subjects and clinics, especially the studies between animal health, welfare and production processes, study of risk factors and risk indicators, relationship between disease processes and animal losses, welfare indicators, biosecurity and disease control and herd health plans. It's not clear whether the interactions of animal husbandry techniques and management and food quality is thought accordingly.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

4.3.3 Suggestions

The teaching of interactions between husbandry systems and product quality in food producing animals must be improved.

4.4 CLINICAL SCIENCES

4.4.1 Findings

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

Clinical teaching is mainly organised during Year (Y) 4 and 5 of the curriculum. During these years the curriculum is based on core subjects. The elective part of the curriculum takes place during the 6th Y (internship). The global curriculum is made of 707 clinical work hours between Y1 and Y5, mainly located in Y3 to Y5. Students are required to attend to a minimum of $\frac{3}{4}$ of the practical classes but can receive exemptions if they work outside.

640 hours of supervised practical training in the Y6 are split between laboratory work, non-clinical animal work and clinical training. For the clinical training students have the choice to practise outside the school with prior validation of their programme.

Clinical training before Y6 takes place in different facilities:

-) In small animal clinic training, Y3 to Y5 students are taught using healthy animals to have the opportunity to actively practice on the live animals, as well as being involved in any current procedures, under the supervision of teachers and clinicians. Clinical teaching is structured to allow students to be trained in basic examinations, ancillary tests and diagnostic imaging in Y3, then participate in surgical procedures in Y4 and then enrolled in clinical services in Y5. All students' work two periods of 24 hours per semester in the emergency service and they can extend this period on a voluntary basis.

-) There is an ambulatory clinic for dairy cattle involving students, with 16 hours of duty in each semester plus more activity on a voluntary basis. The students are working with practitioners whereby 20% of their time is appointed to clinical teaching. They are in direct contact with animals on private farms and are involved in any procedures from individual cases to herd health management. There is no 24/7 emergency service for cattle involving students.

-) In the "Herdade da Abóbada" Experimental Station, students are trained in beef cattle, swine and small ruminants (nearly 24 hours total).

-) Practices in rabbits, poultry and swine population medicine are performed in corresponding farms (nearly 15 hours total).

-) The Equine Clinical Centre at Vairão provides the support for clinical training with horses, based on cases admitted to the Establishment and on the treatment of the Establishment horses (about 27 hours). There is no ambulatory clinic for equine except for reproductive services.

-) The Animal Reproduction Centre of Vairão (CRAV) provides training in animal reproduction for 42 hours per semester in canine, bovine and equine theriogenology. Students are exposed to the major procedures in this topic.

Students receive practical education in necropsy for small animals in Y3. There is no practical education in necropsy for large animals (equine and bovine) under the supervision of a qualified teacher even if some necropsies are performed by practitioners on the farm.

Student groups for clinical teaching are small (from 1 practitioner for 2 students in ambulatory services to 1 instructor to 4 to 6 students in the hospital).

External Practical Training is not formally integrated in the curriculum but may be done on a voluntary basis.

There is no systematic documentation for the follow-up of clinical case exposure of each student either in Small Animals (SA) or Large Animals (LA) (except some attempt in reproduction).

Integration between disciplines is made by allocation of some of the teachers for pre-technical and technical subjects to practical/clinical teaching. The monitoring committee is also assessing curricular integration. Some teachers in the clinical department are not involved in the clinics even if they give theoretical lectures on clinical topics.

4.4.2 Comments

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

There is high exposure of undergraduate students to clinical cases and herd health management in dairy cattle. Undergraduate students are not formally involved in a 24/7 emergency services for ruminants.

Clinical training in equine reproduction gives to students a very good exposure for basic clinical situations both in mares and in stallions.

The caseload does not provide sufficient clinical training in equine medicine and surgery even if there are possibilities to rely on ICBAS owned horses. There is no emergency service available for horses which prevents students to be exposed to emergency cases (e.g. colic and wounds).

It is not possible to document acquisition for all students of D1C because of the absence of formal follow up documents of case exposure.

Practical training in ruminants and horse necropsy under the supervision of a qualified teacher is clearly insufficient. For Companion Animals, there is no evidence of completion of written reports.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are not met because of insufficient practical training in large animals necropsy and insufficient clinical training in equine medicine and surgery.

4.4.3 Suggestions

Horse surgery and medicine caseload must be developed to offer good clinical exposure to students.

Students must have exposure to emergency services for horses and cattle.

Regular large animal necropsy practical teaching (Bovine and equine) must be developed based on the facilities offered by the national lab and under direct supervision of qualified teachers.

Practitioners appointed by ICBAS to perform clinical teaching must be formally and regularly trained on how to teach and assess in clinical training.

A system must be implemented to document the progress of acquisition by students of D1C in the clinic.

4.5 FOOD SAFETY & QUALITY AND VETERINARY PUBLIC HEALTH

4.5.1 Findings

The teaching programme in Food Safety & Quality and Public Health is taught during the 4th and 5th year. This means that the basic concepts of microbiology, toxicology, epidemiology etc. are taught in previous CUs covering the basic sciences. In the 4th year, the programme consists of two course units of Food Technology (I and II, 56 and 58 hours, respectively) and one course unit of Public Health (56 hours). The food technology CUs are number 44 and 51 in the row of the total 60 CUs, while the public health CU is number 50. In the 5th year, the programme consists of two course units of Sanitary Inspection (I and II, 81 and 80 hours, respectively). The sanitary inspection courses are CUs number 52 and 56.

This adds up to 331 hours in total, which is 6.8 % of the total 4836 hours that constitute the whole curriculum including the internship of 810 hours. The teaching methods used covers lectures, seminars, self-directed learning, laboratory work and non-clinical animal work.

The food technology courses include the manufacturing and analyses of several different types of food products, and a safety assessment of which the students must submit an analysis report both to their teacher and to the respective establishment.

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

Practical classes in public health are used for discussions of different cases. During these classes, the students are exposed to specific and relevant questions and problems under the scope of VPH to which they need to produce evidence based answers. Several seminars addressing relevant domains of the veterinary activity especially related to the role of the official veterinarian are organised at the end of the semester.

Three different departments are responsible for the teaching in food safety & quality and public health; these are the Departments of Population Studies, Pathology & Molecular Immunology and Aquatic Production.

Practical training in sanitary inspection is performed as obligatory extramural work in four slaughterhouses (bovine, swine, poultry and lagomorphs/rabbits). Here the students are trained in *ante mortem* and *post mortem* inspections. Collaborative agreements are made between ICBAS and the slaughterhouses.

The students visit one fish official market and one fish canning factory, as well as wastewater and animal by-products treatment plants. Groups of students perform audits in University canteens, and present their results to the operator by a report.

The teachers who are responsible for the extramural training includes academic staff with a veterinary degree holding a PhD and with several years of experience in slaughterhouse inspection – former official veterinarians. Visits are performed with groups not larger than 16 students.

The slaughterhouses and other extramural training facilities are located around Porto with a maximum distance of 113 km (poultry slaughterhouse). The students travel back and forth on the same day using rented vans (paid by the Institution).

Animal welfare issues are taught in several CUs, including discussions on these issues during the *ante mortem* controls at the slaughterhouses.

4.5.2 Comments

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

4.5.3 Suggestions

Groups of students perform audits in university canteens, and present their results to the operator by a report. To broaden the student's experience in food inspection and auditing, visits to other establishments in addition to the university canteens could be considered to be included in the programme.

4.6 ELECTIVES, OPTIONAL DISCIPLINES & OTHER SUBJECTS

4.6.1 Findings

Electives are proposed to the students in the 11th semester as a six month period of professional training (internship) or development of a research project. For the internship training, during the 5th year, students elect the professional area they wish to pursue and contact the teachers of such area to be involved as advisor. When the practical part is concluded, the external co-advisor is requested to evaluate the student performance in written form.

4.6.2 Comments

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in

Annex I of the Budapest 2012 SOP are met.

4.6.3 Suggestions

The visitation team encourages the Establishment's on-going proposal to increase the offer of elective activities on clinical subjects during the 11th semester.

5 TEACHING QUALITY & EVALUATION

5.1 TEACHING METHODOLOGY

5.1.1 Findings

The Integrated Master Degree in Veterinary Medicine (IMVM) is one of the programmes offered by ICBAS. The document "Professional general attributes and capacities for the newly graduated Veterinarian" was proposed by the Scientific Committee of the IMVM (SCIMVM) and accepted by the Dean of ICBAS. The present curriculum started in 2007 and consists of 11 semesters corresponding to 330 ECTS.

The IMVM Director is responsible for the definition of course objectives and its achievement, coordination and regular functioning. The distribution of teaching workload is decided upon by the IMVM Director, the SCIMVM and the department directors, and requires consensus.

The general pedagogical philosophy of IMVM emphasises a strong multidisciplinary approach. This means for example that teachers in basic sciences are experts in their respective fields, e.g. biochemistry, and do not have a veterinary background. A core of disciplines are organised in a sequence of topics consisting of a total of 60 CUs.

The teaching staff are encouraged to adopt and implement modern teaching strategies. The university offer's courses in pedagogical training, which may be attended on a voluntary basis. Concepts such as self-learning, problem-based learning, interactive-assisted learning or interactive lectures have been implemented in some CUs.

Each CU regent fulfils the CU sheet on SIGARRA with information about course objectives, program, teaching and evaluation methods, bibliography and special issues. The CU sheets are then validated and approved, or improved, through a dialog process between the IMVM director and the CU regent.

The bibliographic references needed for each CU are indicated in the CU sheet at SIGARRA. All students have access to library resources through an electronic individual identification.

The monitoring committee consists of the IMVM director, one professor and two students. Teachers and CUs are evaluated annually by students. In addition, the Rector's office conducts alumni surveys two years after graduation. The results of the student's surveys are used for individual self-assessments, evaluation by the CU regent, evaluation by the IMVM director and assessment by each teacher's individual evaluator.

5.1.2 Comments

The team appreciates the commitment to teaching that is expressed by academic and support staff.

The strength of the multidisciplinary environment of ICBAS lies in many opportunities for interactions between undergraduate veterinary students on the one hand and students, teachers and scientists of other study programmes on the other hand. However, the team is concerned that the visibility and autonomy of the veterinary part of ICBAS may suffer on behalf of the multidisciplinaryity.

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

Although the teachers are encouraged to implement new approaches to teaching, it is mainly up to the teachers' own initiative to really do so. Due to the absence of a clear strategic plan devoted to IMVM there is no overall plan for pedagogical development of the teaching methods, and there is no mandatory pedagogical training requirements for the academic staff.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

5.1.3 Suggestions

A strategic plan devoted to IMVM should be developed and should include goals for pedagogical development and the future curriculum.

5.2 EXAMINATIONS

5.2.1 Findings

The examination system is rooted in the general rules for the entire University. Students' evaluation may assume three forms: Distributed with a final exam, distributed without final exam and final exam only. The final exams may be written, oral, practical or any combination of these. The distributed evaluation may rely on laboratory or field/clinical procedures, written tests, reports, individual or group projects, oral evaluations or classroom participation. During clinical training, there is no systematic documentation for the follow-up of clinical case exposure of each student either for small or large animals. In the small animal (SA) Veterinary Teaching Hospital (VTH), students can ask to be assessed on their performances on a voluntary basis, but there is no systematic log-book that can be used for assessment and approval of each rotation period.

All exams are evaluated by the use of an evaluation scale between 0 and 20, and students are approved with 10 or more.

There are three evaluation periods pr. semester, in total are 6 weeks pr. semester used for examinations.

No external elements are engaged in exams except for the internship evaluation.

There is no maximum limit to the number of times a student may attempt to pass a particular CU. The time limit lies within the number of years for the student to graduate. There is a relationship between the number of years a student is enrolled and credits obtained to allow continuation of studies.

The students do not have to pass one CU exam before they can start another CU. The exception is the internship, for which the students have to have passed all other CUs (n=59). Students must present a report or thesis upon completing the internship, which is discussed before a jury.

5.2.2 Comments

There is insufficient documentation of the acquisition of D1C by all students.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

5.2.3 Suggestions

An extended use of external examiners should be considered. This could be used as a tool to increase the contact and collaboration with other veterinary faculties in Portugal.

Teaching is not permitted during examination period, which means that substantial time that could have been used on teaching and learning is spent on examinations each semester. The examination

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

system should be revised as part of the new curriculum development, and considered to be streamlined. Documentation for monitoring DIC acquisition by each student must be implemented.

5.3 STUDENT WELFARE

5.3.1 Findings

The student welfare system applies to all students at University of Porto. The Student Support Office is responsible for the welfare of the ICBAS students, and ICBAS students may also apply for support from the Social Services of the University. All students have a health insurance covering major conditions related with the fulfilment of the course.

The Social Services of the University possesses 9 residence halls, 11 canteens and 7 snack-bars, one of them located at ICBAS. Students have free access to sport activities at the Sport Centre of the University of Porto.

Students are represented in the following boards: Representative's Council; Executive Council; Pedagogical Council and Monitoring Committee of the IMVM.

The new Porto complex houses a common library, support services, student association facilities and auditoriums.

5.3.2 Comments

The team commends on the good working atmosphere between the administration, staff and students.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

5.3.3 Suggestions

None.

6 PHYSICAL FACILITIES & EQUIPMENT

6.1 GENERAL ASPECTS

6.1.1 Findings

The IMVM uses mainly the ICBAS facilities at Porto and Vairão, complemented by the access to the premises of other institutions and companies where teaching activities take place under specific protocols. The Porto complex (28 000 sq meters) is located in town. It is a new premise shared for some part with the Faculty of Pharmacy (60 ICBAS/40 FFUP). It includes the SA VTH (UPVet), administrative services, library, lecture halls and rooms for group work. Teaching and research labs as well as staff offices are also in this building. There are also facilities for rest and lunch open to students and staff.

The Vairao teaching campus (13 ha) is located 30km north of Porto and is usable under a long term protocol with the Ministry of Agriculture. It is served by a train in connection with a minibus to the teaching campus. The campus offers labs and offices in one building and the clinic in another one. There are teaching rooms available.

A dedicated kennel for teaching dog is available on the Porto Campus.

6.1.2 Comments

In the Porto complex, teaching facilities (lecture halls, teaching labs, and different rooms used by students) are well equipped, with the state of the art biosafety equipment and adapted signalisation.

The Vairao teaching campus is easy accessible for students.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

6.1.3 Suggestions

None

6.2 CLINICAL FACILITIES & ORGANISATION

6.2.1 Findings

The SA VTH (UPVet) is located on the Porto campus since 2012. It is a well designed, with a single waiting area for dogs and cats, 5 examination rooms with windows on each door, a central treatment area connected with the ICU located in a separate room but with a window, offering a clear view of what is going on inside. There is a small lab, three rooms dedicated to diagnostic imaging (CT, ultrasound, radiography). The surgical suites are separated from the rest of the complex for biosafety purpose. There are two hospitalisation rooms, one for dogs and the other for cats. The hospitalisation room for dogs is in connection with the outside, offering the opportunity for sanitary walk for hospitalised dogs. There is an isolation unit in the back of the SA VTH. Biosafety regulations are posted in each place.

The small animal necropsy room is located on the ground floor of the main building. It is a small room, well equipped for performing routine procedures.

There is a well equipped necropsy room for large animals nearby the Vairao Centre in the national veterinary lab.

At the Vairão Centre there is one small ruminants paddock with capacity for 16 animals; one indoor barn for 10 cows and 8 calves; one 2 ha pasture for horses; and one 1 ha pasture for cows. There are also two laboratories for assisted reproduction (horses and dogs); an embryology laboratory. There are 10 boxes for horses, one examination room for horses and cattle, a surgery and recovery room for large animals, a pharmacy and an isolation facility for large animals. Two vehicles are available for the mobile clinic on bovine practice and herd health management.

The practical work on meat inspection relies on different slaughterhouses (for cattle, pig, poultry and lagomorph) located in the geographic area of Porto. Some foodstuff producing unit are available either directly nearby the slaughterhouse or dedicated (for fish products).

Students have also access to other facilities for some dedicated teaching which were not evaluated. Recently opened Associated Research Laboratory is located outside the campus. It is easily accessible by public transport. This state of the art building offers excellent opportunities for interdisciplinary research.

6.2.2 Comments

UPVet is very well adapted for teaching purpose and is up to date for its organisation. The waiting room does not allow separation between dogs and cats. The locations of the sanitary walk proposed for diseased dogs and of the SA isolation facilities are not optimal at a biosecurity and biosafety point of view.

The necropsy room for SA is a quite small room. The biosecurity measures are not compliant with the basic standards especially regarding cleaning and transferring animal materials in and out. The LA necropsy room is suitable but the biosecurity measures are not respected.

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

The Vairao campus is well equipped for equine practise. The surgery room is used either for equine or calves and small ruminants which is not compliant with current recommendations.

The vans used for the mobile clinic for ruminants are well equipped.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

6.2.3 Suggestions

The biosafety measures implemented in the SA necropsy room should be totally redesigned to respect state of the art functioning. Biosafety measures in place in the LA necropsy room should be respected.

A clear separation between equine surgery and surgery in other species performed in the surgery room needs to be implemented.

A separate waiting space for cats should be organised in the UPVet. The sanitary walk should be organised to respect biosafety.

7 ANIMALS & TEACHING MATERIALS OF ANIMAL ORIGIN

7.1 Findings

For the training in anatomy, the dog is the reference animal model. The major source of material for dissections is SA cadavers from municipal shelters. Cadavers are refrigerated and/or preserved in saturated sodium chloride solution. Few LA cadavers are used for teaching. Avian and rabbit anatomy is presented on non-eviscerated cadavers from slaughterhouses. Osteology is taught on specimens from the special store in the anatomy museum.

For the training in pathology, CA cadavers are obtained from private clinics and the Porto SA VTH (UPVet). Rabbits and pigs cadavers come from farms. According to national regulations, LA must be necropsied 'in loco' and/or in the national veterinary laboratory. This limits the access of students to LA necropsies performed by a qualified teacher.

Food hygiene training takes place at local slaughterhouses, fish markets and food processing plants. Students have access to dairy cattle at private farms under the supervision of the Vairao clinical centre and practitioners of the Ambulatory clinic. They have access to horses, cows and small ruminants at the Vairao centre. Pigs, poultry and rabbits are seen at private farms. They also examine beef cattle, sheep, goats and pigs at the Herdade da Abobada station.

A dedicated kennel for teaching dogs (beagles) is available on the top floor of one of the buildings of the Porto Campus. Dogs are walked on the lead for 1 hour a day maximum when the students are willing to do so. These dogs are used for semiology lessons.

SA clinical training is done at UPVet. There is not any evidence of systematic External Practical Training (EPT) although students may spend a period in private practice during Year 6 of the programme.

The head of UPVet is also responsible for all the management affairs, which is time consuming.

All the SA clinical case records are hand written, which in fact prevents further use of the data for retrospective studies. There is no 'systematic' clinical case records easily accessible by the students in LA clinics and in necropsy.

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

Fish handling and aquatic medicine is trained at ICBAS aquarium.

7.2 Comments

Animals are in good condition and there is no welfare issue.

There is a sufficient caseload per student in SA practice, rabbits and birds, but not in equine medicine, surgery and necropsy, as suggested by the relevant indicators.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are not met because of absence of adequate clinical data retrieval system to allow retrospective cases study (including necropsy) in all species and insufficient involvement of undergraduate students in the completion of these records in large animals clinic and in necropsy.

7.3 Suggestions

Qualified teachers should be allowed to perform LA necropsies at the incinerator grounds as well as in the national laboratory centre next to the Vairao station.

A professional manager for UPVet could be hired to increase the caseload in the relevant species. This would enable veterinarians to focus on the primary tasks, i.e. teaching, services and research.

There should be a search done for the most appropriate software available for UPVet database, in order to enable students and teachers to perform relevant retrospective studies. Students should be involved on a mandatory basis in the completion of clinical records in large animals and in necropsy.

Undergraduate students should be encouraged to do EPT in order to complement the intramural practical and clinical training.

8 LIBRARY & EDUCATIONAL RESOURCES

8.1 Findings

ICBAS shares a library with the Faculty of Pharmacy (FFUP), thus including documentation on all degrees. There are 6 full time employees, all with special training in library sciences.

This ICBAS/FFUP library is open from Monday to Friday, from 8:00h to 19:45h. In August (the official vacation month), open hours are from 9:00h to 17:00h. On weekends only the electronic services are available. During the examination periods, the largest reading room is open all night to increase the number of places available for studying. The Library has a reading service distributed over 2 floors with 344 seats, including several meeting rooms with or without computers. Wi-fi is available everywhere in the campus and VPN is available for staff and students.

The library utilises 6 major electronic search and access systems for national and international documentation: SJR, UP-Repository, EBSCO, B-ON, ISI-Web of Knowledge and SCOPUS. It also has an active national exchange programme with other research and academic libraries.

In this multidisciplinary library, there is an area dedicated to Veterinary Medicine where all monographs are exposed. So far, 963 records in the Veterinary Medicine bibliographic database, including books, periodicals, reprints and scientific articles, are available. Portuguese public Universities have several contracts with different national and international publishers allowing for the search and download of the major publications with interest in Veterinary Science. 30 veterinary e-books are available. The online access is done through B-On.

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

A 'Loan Service', a 'Publication Request Service' (for requesting scientific articles) and a 'Suggestion of Purchase Service' (for proposing the purchase new books) are also available.

The library regularly provides group or individual training to its users, either face-to-face or online, in order to more efficiently use its facilities and services. This training for bibliographic search is optional.

An e-learning platform is available (Moodle) and used by some teachers.

Staff and students are fully satisfied with the available educational resources and IT services.

8.2 Comments

The library, educational resources and IT services provided by ICBAS are appropriate for supporting the educational and research activities.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

8.3 Suggestions

The training for bibliographic search should be compulsory and included in the study programme.

9 ADMISSION & ENROLMENT

9.1 Findings

There is numerus clausus limiting the number of accepted students. It is also used for the budgeting of the Establishment, which is then approved by the Ministry of Education. Students are chosen according to the score achieved in National Exams and their average grade from the last 3 years of secondary school.

All the admitted students are reaching the highest admission points within the country, so their basic knowledge is very high, but it is noted a proportion of them aim to enrol in human medicine resulting in some of them leaving during the course of their studies. There is a steady effort to refill their positions by other students who failed to get within the numerus clausus.

In 2014/2015, nearly 10% of IMVM students participated in international exchange programmes. They went to Brazil, Spain, Italy or English-speaking countries (USA, UK).

9.2 Comments

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

9.3 Suggestions

When admitting the veterinary students, their motivation to study veterinary medicine should be taken into account, instead of focusing only on the grades obtained at secondary school.

10 ACADEMIC TEACHING & SUPPORT STAFF

10.1 Findings

Total academic staff provided for veterinary training is 85,6 FTE including 41,2 FTE VS. The allocation of teaching staff to the departments is dependent on the teaching workload, whereas 1 FTE has to teach 6-9 hours per week per year. Career progression of budgeted staff has been halted since 2010. No replacement has been done for retired members of staff, so there is minor rejuvenation and

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

substitution. In the Veterinary Clinic there is no full professor, however 15,3 FTE VS assistant professors. Non-budgeted staff are hired and paid by the services' income. All of these contracts do not surpass one year. Budgeted staff are not allowed to work outside of the University in the same activities. Attendance to meetings is supported by the departments and Dean Office.

Sabbatical leave has not been authorised in the past 5 years. Formal pedagogical training is not compulsory for the teaching staff. The support staff are highly qualified (and sometimes overqualified) and have frequently an academic background.

The practitioners involved with the core curriculum clinical training do not receive a formal pedagogical training before they start to teach and assess undergraduate students.

10.2 Comments

The Ratio R1 (# undergraduate students / total academic FTE (4,65)) is quite satisfactory, as well as R3 (# undergraduate veterinary students / # VS FTE (9,06)), R4 (# students graduating annually / VS FTE (1,4)) and R5 (# total FTE support staff / # total FTE academic staff (1,1)). The vast majority of non-veterinary FTE are involved in teaching several other ICBAS and U.Porto degrees. When teaching workload is calculated, SER states that about 75% of the whole IMVM teaching load is given by teachers with a veterinary degree.

There is a disproportionate unbalanced relationship in the teaching staff categories with a shortage of full professors and a surplus of assistant professors.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are not met because of insufficient formal pedagogical training of the practitioners involved in core curriculum clinical training.

10.3 Suggestions

The establishment should aim for a sound proportion in the teaching staff categories. Formal pedagogical training should be compulsory for all teachers (including practitioners) involved in the core curriculum.

11 CONTINUING EDUCATION

11.1 Findings

CPE is conducted by the initiative of the departments and individual teachers. It is aimed at practitioners as well as to the topics in which the staff of the Establishment are involved in. Some courses are conducted upon specific requests from practitioners. At this moment the only cooperation with practitioners involves the Portuguese Buiatrics Association.

There has been microsurgery workshops and Equine reproduction courses organised for practitioners.

Students may take part in all those activities.

There is not a systematic planned approach to CPE. Feedback from practitioners is not systematically searched.

The income from the CPE is used for funding the research activities performed by the teachers.

Most of the current CPEs for local practitioners are provided by external organisations.

11.2 Comments

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

CPE is not (yet) mandatory for practitioners in Portugal, which could be the reason why there is a low demand for it to date.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

11.3 Suggestions

There should be incentives for IVMV teachers to get involved into CPE programmes, since the profits generated by CPE could contribute to the budget of the relevant departments.

Steady communication and feedback from the professional associations should be more formally and regularly organised by the Establishment.

12 POSTGRADUATE EDUCATION

12.1 Findings

There are two approved residency programmes (theriogenology and pathology) with two residents on each programme. The residents are either teachers or appointed clinicians. Some of the residents are also in a PhD programme. There are discussions inside the clinical department to increase the number of diplomats.

Veterinary students are accepted in 8 master degrees (2 years) and 17 doctoral programmes (4 years) offered at ICBAS. Students can be admitted into a PhD programme after selection by the Course Scientific Council. 29 students were enrolled in 2014/2015 in the veterinary sciences PhD programme and 20 in the animal sciences PhD programme. Some PhD students are in charge of practical or theoretical teaching. Some PhD students are technicians. The PhD students have to pay fees (3300 € per year) for the programme.

12.2 Comments

ICBAS offer good opportunities for PhD programmes but some of the programmes are not funded with high fees.

There are very few EBVS diplomates, which leads to difficulties in developing new residency programmes.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

12.3 Suggestions

A clear strategy to develop the residency programmes must be developed.

13 RESEARCH

13.1 Findings

ICBAS research activities are performed within the laboratories' facilities of the 9 departments (Anatomia, Biologia Molecular, Ciências do Comportamento, Clínicas Veterinárias, Estudos de Populações, Imuno-Fisiologia e Farmacologia, Microscopia, Patologia e Imunologia Molecular, Produção Aquática, Química). Several research units composed by teachers of veterinary and non-

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

veterinary curricula, develop their research at the Instituto de Investigação e Inovação em Saúde (i3s), where up-to-date research equipment and facilities are available.

Technical staff are intensely involved in research activities and in PhD programmes too.

All departments involved in teaching activity within the veterinary curriculum show a very good overall interdisciplinary research activity. Veterinary students are exposed to research activities mostly after the third year (on a voluntary basis), during the electives' activity of the 11th semester (9.3% of students) or in the laboratory component for the final dissertation. Scientific research work of the 11th semester is carried out under the guidance of teachers within corresponding area, at ICBAS or other research centres.

13.2 Comments

Interdisciplinary research projects in well equipped and well ranked laboratories offer many opportunities to expose undergraduate and PhD students to up-to-date research activities.

In the Visitation team's opinion, the requirements regarding this chapter as they are laid down in Annex I of the Budapest 2012 SOP are met.

13.3 Suggestions

None.

EXECUTIVE SUMMARY

The Institute of Biomedical Sciences Abel Salazar (ICBAS) was established in 1975 as an entity of the University of Porto (U.Porto). The scientific domains of ICBAS concern Health, Environment, Animal Production and Food Processing and Quality. The Veterinary Course started in 1994.

The Veterinary Department of ICBAS was evaluated by EAEVE in November 2002 with a Non Approval status granted by ECOVE.

The SER was written in agreement with the ESEVT SOP and provided on time to the Visitation team. A reply to most questions and/or requests for clarification from the experts was provided before the start or during the Visitation.

The Visitation was well prepared, well organised and carried out in a cordial and professional atmosphere. The head of Establishment and the Liaison Officer were easily and efficiently available when requested. The programme of the Visitation was easily adapted when requested by the Visitation team who had full access to the information, facilities and individuals they asked for.

The Visitation Team has identified several areas worthy of praise, e.g.:

-) commitment of teaching and support staff;
-) working atmosphere between administration, staff and students;
-) interaction between undergraduate veterinary students on the one hand and students, teachers and scientists of other study programmes on the other hand;
-) facilities and procedures for theoretical and practical (non clinical) teaching and for students welfare;
-) clinical training in equine reproduction;
-) high exposure of undergraduate students to clinical cases and herd health management in dairy cattle;
-) library and IT facilities and services;
-) opportunity for undergraduate students, PhD students, post-docs and staff to join interdisciplinary research projects in well equipped and well ranked laboratories.

The Visitation team has also identified several areas of concern:

-) absence of a real strategic plan (what/where/how/when) specifically devoted to the IMVM and its veterinary specific subjects;
-) insufficient visibility and autonomy of the veterinary part of ICBAS;
-) non optimal biosecurity and safety measures in necropsy and in some isolation units;
-) insufficient practical training in ruminants and horses necropsy under the supervision of a qualified teacher;
-) insufficient clinical training in equine medicine and surgery;
-) absence of formal involvement of all undergraduate students in emergency services for ruminants;
-) absence of emergency services for horses;
-) insufficient formal pedagogical training (how to teach and to assess undergraduate students) of the practitioners involved in core curriculum clinical training;
-) insufficient documentation on the acquisition by all students of DIC;
-) absence of adequate clinical data retrieval system to allow retrospective cases study (including in necropsy) in all species and insufficient involvement of undergraduate students in the completion of these records in large animals clinic and in necropsy.

The potential Major Deficiencies suggested by the Visitation team are:

-) absence of a real strategic plan specifically devoted to the IMVM and its veterinary specific subjects;
-) insufficient practical training in large animals necropsy;

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

-) insufficient clinical training in equine medicine and surgery;
-) insufficient formal pedagogical training of the practitioners involved in core curriculum clinical training;
-) absence of adequate clinical data retrieval system to allow retrospective cases study (including necropsy) in all species and insufficient involvement of undergraduate students in the completion of these records in large animals clinic and in necropsy.

Therefore the Visitation Team recommends to ECOVE the status of Non Approval for the Veterinary department of the University of Porto.

FINAL REPORT AS ISSUED BY ECOVE ON 23 NOVEMBER 2016

Annex 1 Indicators (ratios)

I1: n° of FTE academic staff involved in veterinary training / n° of undergraduate students:

85.6 / 398 = **0.215** (0.13)

I2: n° of FTE veterinarians involved in veterinary training / n° of students graduating annually:

41.2 / 60.33 = **0.683** (0.59)

I3: n° of FTE support staff involved in veterinary training / n° of students graduating annually:

95 / 60.33 = **1.575** (0.51)

I4: n° of hours of practical (non-clinical) training:

1317 (585)

I5: n° of hours of clinical training:

707 (651)

I6: n° of hours of FSQ and VPH training:

332 (172)

I7: n° of hours of extra-mural practical training in FSQ and VPH:

42 (28)

I8: n° of companion animal patients seen intra-murally / n° of students graduating annually:

4603 / 60.33 = **76.293** (42)

I9: n° of ruminant and pig patients seen intra-murally / n° of students graduating annually: 80.66/

60.33 = **1.337** (0.47)

I10: n° of equine patients seen intra-murally / n° of students graduating annually:

92.33/ 60.33 = **1.530** (1.20)

I11: n° of rabbit, rodent, bird and exotic patients seen intra-murally / n° of students graduating annually:

152 / 60.33 = **2.519** (1.36)

I12: n° of companion animal patients seen extra-murally / n° of students graduating annually:

0/ 60.33 = **0** (0.29)

I13: n° of individual ruminants and pig patients seen extra-murally / n° of students graduating annually:

3875.7 / 60.33 = **64.238** (5.50)

I14: n° of equine patients seen extra-murally / n° of students graduating annually:

27.3 / 60.33 = **0.453** (0.49)

I15: n° of visits to ruminant and pig herds / n° of students graduating annually:

791 / 60.33 = **13.11** (0.47)

I16: n° of visits to poultry and farmed rabbit units / n° of students graduating annually:

19.7 / 60.33 = **0.326** (0.05)

I17: n° of companion animal necropsies / n° of students graduating annually:

147 / 60.33 = **2.436** (1.12)

I18: n° of ruminant and pig necropsies / n° of students graduating annually:

55 / 60.33 = **0.912** (0.99)

I19: n° of equine necropsies / n° of students graduating annually:

0.7 / 60.33 = **0.011** (0.08)

I20: n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually:

337 / 60.33 = **5.586** (0.66)

I21: n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating annually:

3 / 60.33 = **0.05** (0.05)

I22: n° of PhD-students graduating annually / n° of students graduating annually:

16 / 60.33 = **0.265** (0.09)

(): ESEVT recommended minimal values

Annex 2 Decision of ECOVE

The Committee concluded that the following Major Deficiencies had been identified:

-) Absence of a real strategic plan specifically devoted to the IMVM and its veterinary specific subjects
-) Insufficient practical training in large animals necropsy
-) Insufficient clinical training in equine medicine and surgery
-) Insufficient formal pedagogical training of the practitioners involved in core curriculum clinical training
-) Absence of adequate clinical data retrieval system to allow retrospective cases study (including necropsy) in all species and insufficient involvement of undergraduate students in the completion of these records in large animals clinic

The 'Institute of Biomedical Sciences Abel Salazar (ICBAS), University of Porto' is classified after Stage 1 Evaluation as holding the status of: **NON-APPROVAL**.