

ARISTOTLE UNIVERSITY OF THESSALONIKI
FACULTY OF VETERINARY MEDICINE

SELF EVALUATION REPORT

May 2011

INTRODUCTION

The Faculty of Veterinary Medicine Aristotle University of Thessaloniki (FVMT) was founded in 1950 and the first undergraduate students were enrolled in the academic year 1950-51. During the last decade significant changes took place in the organisation and study programme of the Faculty. New buildings were added and renovations of old constructions were made along with the purchase of state of the art equipment to meet the needs of a modern teaching and research facility. More specifically:

1. The application of the new curriculum, which began during the academic year 2003-2004, provides undergraduate students with the knowledge, the know-how and the interpersonal skills necessary for success in the field of clinical veterinary medicine, animal health and welfare, animal production, and food safety and veterinary public health. This is accomplished through integrated teaching between basic and between clinical sciences, increased practical and mainly clinical training over theoretical instruction, merging of subjects, introduction of elective courses, extramural studies and self-directed learning. Integration between Animal Production and Farm Animal Medicine has also been accomplished. It should also be stressed that the exposure of students to clinical subjects now begins as early as the 6th semester, while the last two semesters are completely devoted to clinical training.
2. New courses on epidemiology, molecular biology, basic ethology, legislation and practice management have been introduced. The practical orientation of the anatomy course has been significantly improved by increasing the amount of hands-on anatomical dissection by students. Moreover, radiographic material, computer assisted teaching and live anatomy have been incorporated into the teaching of Anatomy of the dog.
3. In the areas of food hygiene and public health instruction concerning the principles, the design and the implementation of HACCP system is now included in the curriculum.
4. Major organizational changes have been implemented. The most important of them concern the Clinical Department, which has been re-organized along species-oriented lines, with central support services (Diagnostic Laboratory, Diagnostic Imaging, Pharmacy, Administration). Two separate divisions comprise the Department of Clinical Sciences: the Companion Animal Clinic and the Production Animal Clinic. Details of the organization of the two clinics are given in chapter 2.
5. A new dairy sheep Teaching Farm has been established in Kolchiko, some 35 km north-east of Thessaloniki. This Teaching Farm provides the opportunity for practical training of students on animal production from the first semester of their studies, with particular emphasis on ensuring that all actions are performed humanely and competently, as well as on making students aware of the risks to human health resulting from inappropriate animal approach and handling.

6. The new Production Animal Clinic, also in Kolchiko, provides advanced clinical training in diagnosis and treatment of farm animal diseases, and is equipped with operating theatres for farm animal surgery, isolation boxes, necropsy room and other diagnostic and teaching facilities.
7. All companion and production animal clinical sections are now fully operational for 48 weeks per year, with emergency as well as referred cases admitted on a 24h basis. A service for hospitalised animals is also running on a 24-hour basis, 7 days a week.
8. Many areas of the Companion Animal Clinic have been extensively redesigned and/or renovated. Several internal structures have been removed and new areas have been created using new blueprints. Through this process, new preparation room and surgery theatres have been created, as well as endoscopy rooms and a new intensive care unit. Previously unused areas in the basement have been restructured or renovated, creating, thus, storage rooms, 3 rooms for group work, and a room for training in surgery. Analogous changes were implemented in the wards of the Surgery Unit, in which new spaces have been created, while pre-existing rooms have been renovated.

New laparoscopic and surgical microscope facilities, electromyography, and video-otoscopy and endoscopy equipment have been installed. All surgery theatres, prep-room, intensive care unit and many other rooms are equipped with central provision of oxygen. Moreover, the room air of the operating theatres, the prep-room, and the intensive care unit is constantly renewed in order to remove the anaesthetic gases.

The equine unit has been equipped with a new operating table, and a new anaesthetic machine with ventilator.

The Diagnostic imaging unit has been equipped with digital radiographic facilities. The purchase of second one has already been approved and is expected to be installed by the end of the year.

The new dental treatment room is now equipped with a new dental unit, a small animal radiographic unit, and an X-ray digital system.

9. Novel electronic software (e-vet) for archiving animal records has been installed, aiding students and staff to retrieve animal cases.
10. The necropsy room, the chilling/freezing room in Anatomy, and two rooms for training of students on microscopy in Histology and Pathology have been renovated.
11. A real-time PCR unit has been installed in the laboratory of Parasitology. The purchase of a second one has already been approved for the laboratory of Virology, and is expected to be installed by the end of the year. A confocal microscope has been installed in the Laboratory of Anatomy, and bio-security level 3 (BSL3) facilities have been established in the Laboratory of Microbiology.
12. The expansion of postgraduate education by introducing 2-year MSc programmes in Production Animal Health and Management, Small Animal Surgery, and Small Animal Medicine provides new opportunities to veterinary graduates to pursue advanced studies in these particular areas. Graduate-level courses on biostatistics, research

methodology and experimental design, epidemiology and molecular biology have been included in the curriculum of these graduate programmes. Attendance of these courses has also been included in the requirements for all PhDs awarded by the Faculty.

The above changes will be detailed in the respective SER Chapters. Overall, it is apparent that during the almost ten years since the previous EAEVE evaluation there has been a substantial improvement of veterinary education and research at our Faculty.

The **major problems encountered** by the FVMT are mainly related to the lack of sufficient funds for the appointment of new academic staff and, especially, support staff members. It is worth mentioning that, over the past few years many of the staff members that have resigned or retired have not been replaced. This situation is not expected to change in the near future, until, at least, the financial situation of the country gets better.

The old buildings of the Clinical Department as well as the main buildings in the University campus need restoration.

Given the present financial situation of the country, it is not anticipated that an increase in the governmental funding of the Faculty may happen in the following few years. Therefore, the Faculty should seek ways to increase its funding.

Chapter 1. AIMS AND OBJECTIVES

1.1 FACTUAL INFORMATION

The FVMT is at the frontiers of veterinary medicine and veterinary medical education and provides teaching and research of the highest quality.

From the education point of view, the aim of the program is:

- To provide students with the knowledge, know-how, clinical and practical skills to achieve a successful career in the fields of diagnosis, treatment and prognosis of disease, animal health and production, food safety/public health, and animal welfare.
- To offer a stimulating and friendly learning environment that will attract highly qualified and motivated students and produce veterinarians of the highest standards, and
- To provide lifelong learning opportunities and maintain a continuous professional development.

On completion of the study program, our new veterinary graduate will have acquired a thorough knowledge and understanding of the sciences on which the activities of veterinary surgeons are based, and should be able to undertake the tasks of the “Day-one skills”, described by EAEVE (APPENDIX I pp 191-193).

The Faculty is equipped with the necessary teaching staff and structural facilities including a teaching farm, a specialized library and two veterinary hospitals to ensure the high standards of the education provided.

With regards to research, the Faculty is aiming at:

- Fostering an enthusiastic interest in veterinary and biomedical research by the provision of postgraduate research programs, by periods of elective study and by collaborating with other researchers in academic or research Institutions.
- Expanding the scientific base of knowledge.
- Providing opportunities for faculty development.

Concerning the services offered by the Faculty, the objective is to provide a wide range of veterinary medical services of high standards to the public, including animal production, equine and small animal clinical services, and diagnostic laboratory services. Moreover, the Faculty aims to provide continuous professional development courses, seminars and conferences for veterinarians and the general public.

Furthermore, specific objectives are:

- To enhance rural diversity and to promote innovation in the farm and related enterprises, while ensuring the protection of the environment. The Faculty provides advice/consultation together with scientific and business services for farm enterprises and for related processing, manufacturing and supply industries.
- To maintain monitoring programmes on disease prevalence in animals and to promote public appreciation of the veterinary profession and its contribution to national prosperity. The FVMT has a broad strategy of engaging in integrated research that supports both Greek and European Government bodies with advice on existing and emerging disease problems and of providing a diagnostic service to veterinarians in practice in Greece.

The evaluation of the above objectives is an ongoing process. Changes are instituted on a regular basis to ensure that every student is provided with the basic knowledge, skills and experiences necessary to successfully meet the up-to-date standards of the Veterinary Profession. Any changes in the objectives happen in response to internal and external information and feedback. The responsibility of determining, assessing and amending the FVMT objectives lies with its General Assembly.

1.2 COMMENTS

The period of the last ten years has been characterised by ongoing changes that have affected the objectives of the FVMT. The reorganisation of the curriculum and the restructuring of teaching facilities are now largely in place and are operating effectively in order to achieve the projected goals.

The objectives of the Faculty are met to a substantial degree as evidenced by the following facts:

- Overall comparatively high levels of graduate employability. Unemployment among veterinary surgeons is very low. They are often successful in competing for jobs or post-graduate studies abroad. Moreover, many of our Faculty' graduates hold important positions in administrative bodies in governmental, academic, and private organisations throughout the world. In fact some hold very high positions in big international companies, e.g. pharmaceutical companies. A few are members of the executive committees of State organizations, while others are Presidents or members of committees of scientific associations, Colleges etc. They are often invited to lecture in scientific national or international forums and serve as members of the editorial board of international peer reviewed journals.
- Some of our Faculty's graduates are involved in the protection of animal resources and public health of the country through the successful management and eradication of existing and emerging diseases and through designing and

applying schemes to ensure hygiene and to establish safety of food of animal origin.

- The operation of the Production Animal Clinic and the Teaching Dairy Sheep Farm in Kolchiko, in combination with the development and maintenance of collaborations with farm enterprises, improved significantly production animal education by providing students with practical knowledge in the fields of large animal medicine and production.
- The extensive renovation of the buildings and renewal of equipment of the Companion Animal Clinic enhanced the services offered to companion animal patients, including outpatient and in-hospital services, and increased the Department's case load and referrals. The result of these improvements is that students can acquire a better knowledge and clinical training in small animal veterinary medicine, while at the same time the income of the Clinic has been increased.
- The expansion of postgraduate education by introducing 2-year MSc programmes in Farm Animal Breeding and Medicine, Small Animal Surgery and Small Animal Medicine provided new opportunities to veterinary graduates to pursue advanced studies to these particular areas.
- The commencement of residency programmes recognised by the EBVS in Veterinary Anaesthesia & Analgesia and Veterinary Dermatology allowing further specialisation and advanced training of our graduates and attraction of international graduates as well.
- A number of academic staff members, have successfully organised International/ World Congresses, Conferences, Symposia, Seminars and Meetings.
- The FVMT, during its 60-years operation, has also a significant contribution to the central administration of the AUTH, since until now three members of its academic staff have been elected Rectors and two vice-Rectors.

Strengths/Opportunities

Highly dedicated academic, support and administration personnel committed to accomplishing the FVMT's mission.

Wide alumni circles (having been the only Faculty of Veterinary Medicine in the country for 50 years and currently the major one of two).

Reputation for delivery of high quality teaching, research and clinical/laboratory/ consultancy services.

The increased theoretical and practical knowledge and skills in food safety, food inspection and public health helped in filling the increased demand for meat inspectors and public health veterinarians both nationally and internationally.

Strong connections with research institutes and universities abroad.

Strong connections with the industry (small and large animals), and food processing companies.

Livestock production constitutes a major component of the Greek economy.

Growing need for companion animal specialists.

The continuous support of the central administration of AUTH.

Weaknesses/Threats

The decreased number of support staff may impair teaching and research efforts, and achieving the Faculty's objectives.

Dire financial circumstances . The lack of adequate funding for research limits the FVMT's ability to attract highly qualified applicants from both veterinary medical and biomedical sciences.

Faculty split in 3 sites.

1.3 SUGGESTIONS

To better achieve the above mentioned objectives:

- The number of support staff should be increased.
- More financial support for teaching and research, including further renovation of the old buildings and renewal of equipment, should be sought.
- More than seven years after the implementation of the present curriculum, the Faculty must intensify its efforts for proper evaluation of the curriculum's results so as the needs of any changes in the near future would be explored.
- Full integration of teaching of Animal Production, Production Animal Clinical Sciences and Food Hygiene should be encouraged for the provision of a better practical-clinical education and elimination of possible overlapping of similar teaching components.
- The provision of more residency programs through European Specialisation Colleges and MSc postgraduate programmes should also be encouraged.

Chapter 2: ORGANISATION

2.1 FACTUAL INFORMATION

Name of the Faculty: **FACULTY OF VETERINARY MEDICINE**

Address: **ARISTOTLE UNIVERSITY OF THESSALONIKI,
54 124 THESSALONIKI GREECE**

Telephone: + 30 2310995219

Fax: + 30 2310995218

Website: <http://www.vet.auth.gr>

E-mail: info@vet.auth.gr

Title and name of head of the establishment:

President: Prof. I. Vlemmas DVM, Ph.D.

Deputy-President: Prof. S. Frydas, DVM, Ph.D.

The address of the university is:

Aristotle University of Thessaloniki,
GR-54 124 Thessaloniki
GREECE

The AUTH is a State institution that was established in 1925. The number of students currently enrolled at AUTH is 81,500. This includes 72,140 undergraduate and 8,360 postgraduate students.

At present, the Teaching and Research (Academic) Staff amounts to 2,248 individuals (766 professors, 476 associate professors, 609 assistant professors and 397 lecturers). The Scientific Teaching Staff amounts to 67 people. The Special Laboratory Teaching Staff comes up to 262 people, while 6 teachers of the Greek Language and 13 teachers of foreign languages are also employed by the University. Support is also offered to educational projects by 243 members of the Special Technical Laboratory Staff (Technicians) and to administrative projects by 430 permanent employees, 563 employees who are employed under an unlimited term contract, and 790 temporary employees (administrative, cleaning, gardening and security personnel).

The AUTH is the biggest University in Greece and offers studies in the majority of the scientific disciplines existing in the country. The Schools are the academic units which issue the basic University title, called "Degree" ("Ptychio" in Greek), as well as postgraduate Diplomas, i.e. the "Post-graduate Diploma of Specialisation", which is equivalent to the Master's Degree, and the "Doctoral Diploma" equivalent to the "PhD degree". Schools with related study disciplines and common orientations form

larger academic units, the Faculties. Until 2005 the then School of Veterinary Medicine was part (School) of the Faculty of Geotechnical Sciences. However, since then constitutes a single-School Faculty, namely the Faculty of Veterinary Medicine (FVMT).

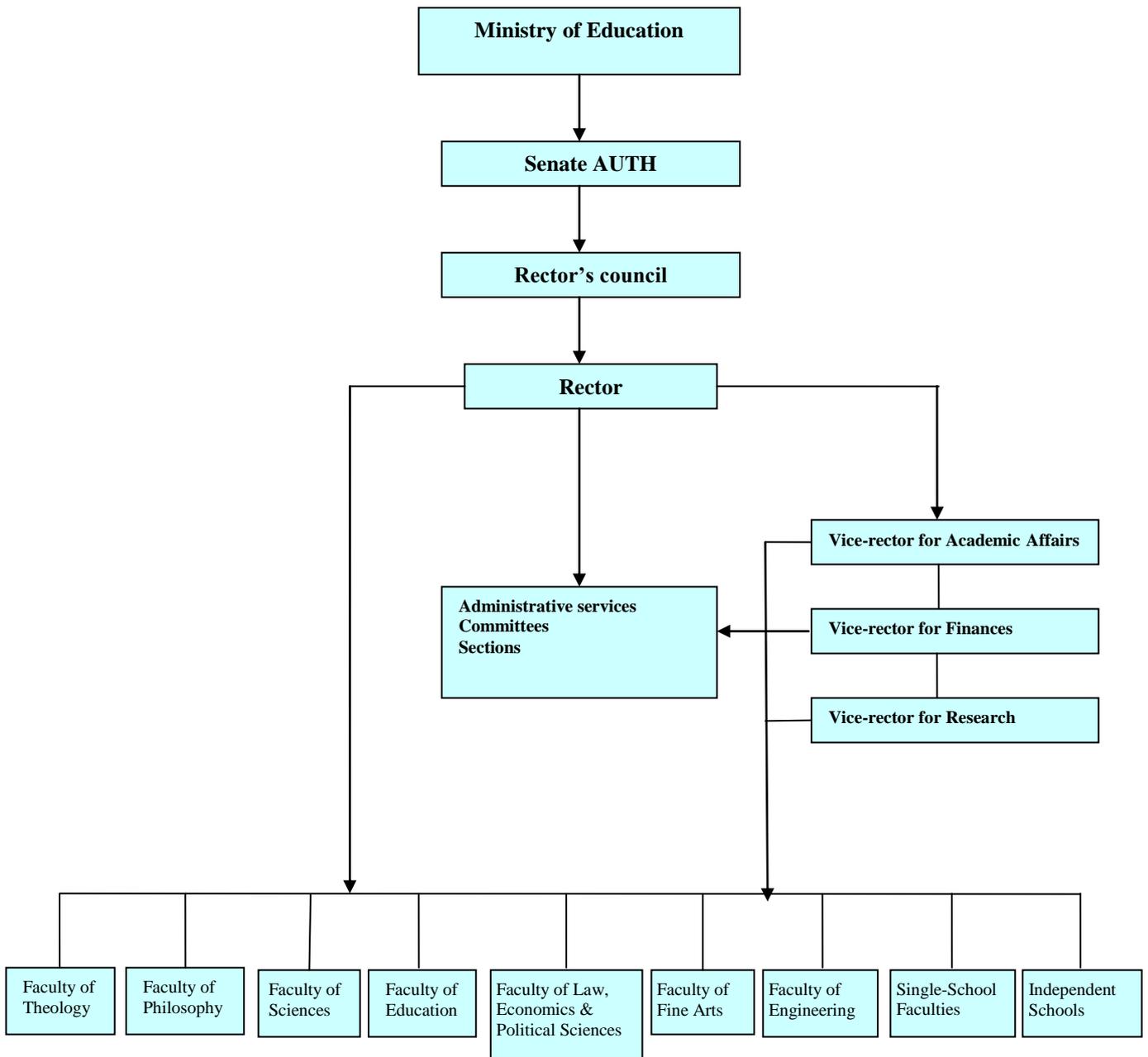
The University is headed by the *Rector*, who is assisted by three *vice-Rectors*, one on Academic Affairs, one on Finances and one on Research. The administrative bodies of the University are the *Senate*, the *Rector's Council* and the *Rector*. The *Senate* is the ultimate decision-making body and consists of the *Rector*, the *Vice-Rectors*, the Faculty Deans, the Presidents of the Schools, the University Secretary (without a right to vote), a student representative from each School, two representatives of the postgraduate students, one representative of the assistants-tutors-scientific fellows, one representative of the Special Laboratory Teaching Staff, one representative of the Special Technical Teaching Staff and one representative of the Administrative Staff. Representatives of associate professors, assistant professors and lecturers are also entitled to participate in the Senate. The *Rector's Council* consists of the *Rector*, the *Vice-Rectors*, a student representative who is elected by all the students who participate in the Senate, and the University Secretary (without a right to vote).

The *Rector*, the *Vice-Rectors* and the Heads of the Faculties are elected for a four year term, while the Heads of the Schools or single-School Faculties (Presidents and Vice Presidents) for a term of two years.

The electorate for the *Rector* and the *vice-Rectors* consists of all the members of the academic staff, under- and post-graduate students, special teaching staff, and technical and administrative staff of the University. The corresponding percentages of influence of votes of the members of the academic staff are by and large equal to those of the members of the other categories of the electorate.

The electorate for the Head of a Faculty has a similar composition, originating, however, only from the Schools which constitute the Faculty. The organisational structure of the University is shown below in Diagram 1. Further information on the organisation of AUTH in Faculties and Schools are given in Appendix VI pp 237-238.

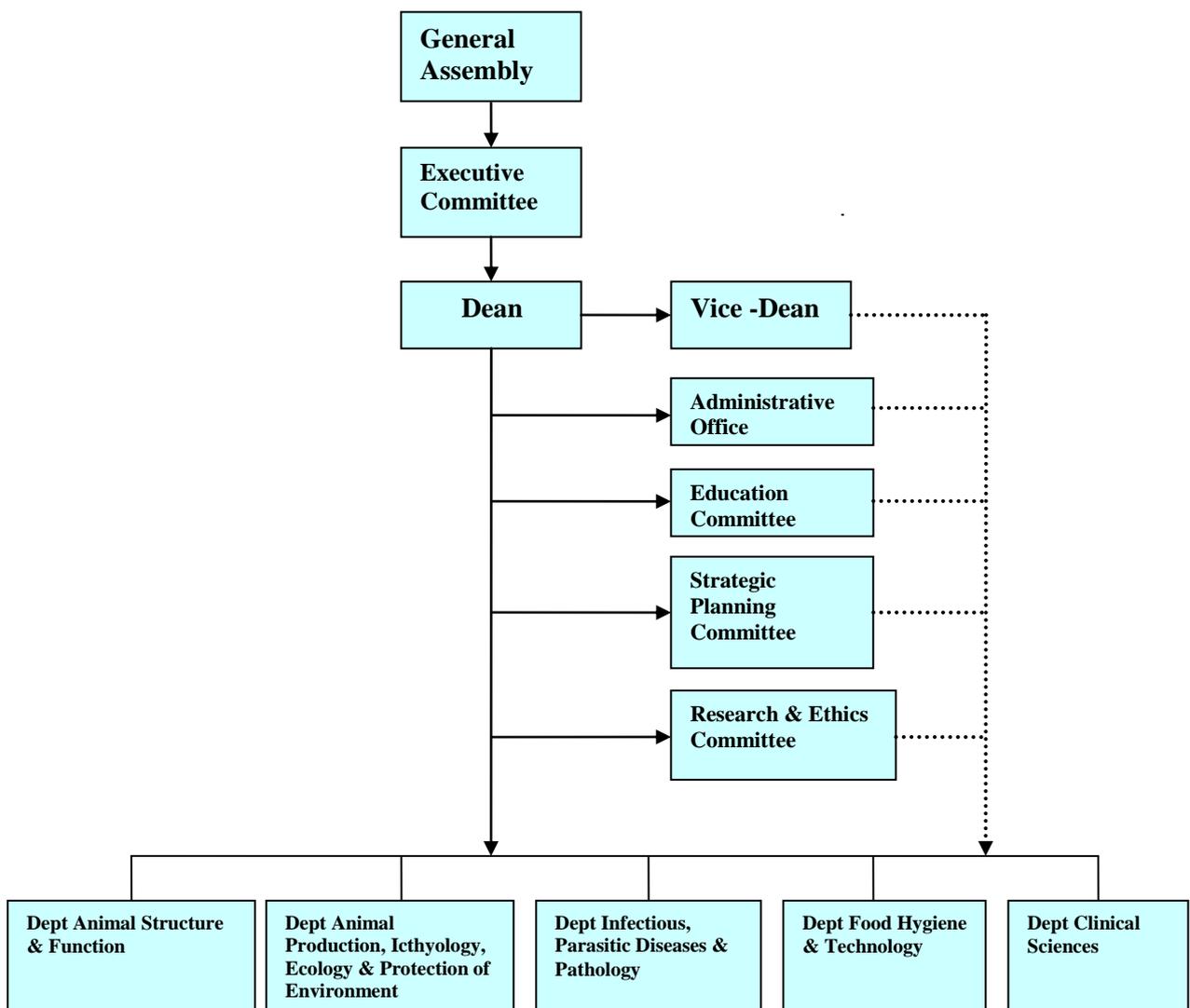
Diagram 1. Organisational structure of the A.U.TH.



Faculties are divided into Schools. A School is the basic academic unit and it covers the subject area of a discipline. The Schools are subdivided into Departments. All Schools or single-school Faculties, like the FVMT, are organised in a similar way, as shown in Diagram 2. The administrative bodies of the FVMT are the *General Assembly*, the *Executive Committee* and the *Dean* (President in the case of a School).

The *Dean* and the *vice-Dean* of the Faculty are elected by the academic staff and representatives of the undergraduate students and technical staff of the Faculty. The *Dean* chairs the *General Assembly* of the Faculty and the *Executive Committee*, and is responsible for coordination of the administration of the Faculty. It should be stressed, however, that the decision making abilities of the Dean are very limited. Most if not all the decisions are made by the General Assembly.

Diagram 2. Organisational structure of the FVMT



The *General Assembly* is the ultimate decision-making body of the Faculty; it decides on the educational and financial policy, the organisation and the strategy of the Faculty, the curriculum and other educational issues, conveys decisions to the Executive, Education or other committees and determines the allocation of the

University funding to the Departments of the FVMT. The General Assembly makes proposals to the AUTH.

It should be emphasized that the Faculty has full autonomy on educational issues, e.g. changes in the curriculum. Neither the University nor the Ministry of Education can change a decision on these matters made by the General Assembly of the Faculty.

The *General Assembly* consists of the Dean, the Heads of the Departments (5), representatives of the academic staff from all the Departments (30) and representatives of the undergraduate students (18), as well as of the technical staff (2).

The *Executive Committee* consists of the Dean, the Vice-Dean, the Heads of the five Departments, and two representatives of the undergraduate students. The *Executive Committee* makes proposals to the *General Assembly* of the Faculty and decides mainly on individual matters of the technical staff, and of the under- and post-graduate students.

The *Education Committee* consists of five representatives of the academic staff, one from each of the five Departments, and two representatives of the undergraduate students. The academic staff members are appointed by the Dean. This Committee evaluates the curriculum and, after taking into consideration suggestions made by academic staff members via their Department or by students' representatives, proposes to the *General Assembly* of the Faculty the necessary changes.

Other committees functioning within the FVMT include the *Strategic Planning Committee*, which deals with and proposes to the General Assembly the strategy of the Faculty and the *Research and Ethics Committee*, which deals with the research strategy and policy and various ethical issues concerning this policy and makes also proposals to the General Assembly.

The organisation of the Departments of the FVMT is as follows:

1. *Department of Animal Structure and Function*

- Laboratory of Anatomy, Histology and Embryology of Domestic Animals
- Laboratory of Animal Physiology
- Laboratory of Biochemistry and Toxicology
- Laboratory of Pharmacology

2. *Department of Animal Production, Ichthyology, Ecology & Protection of the Environment*

- Laboratory of Animal Nutrition

- Laboratory of Animal Husbandry
- Laboratory of Ichthyology
- Laboratory of Ecology and Protection of the Environment
- Laboratory of Economics of Animal Production (including Epidemiology and Biostatistics)

3. *Department of Infectious & Parasitic Diseases and Pathology*

- Laboratory of Microbiology and Infectious Diseases
- Laboratory of Parasitology and Parasitic Diseases
- Laboratory of Pathology

4. *Department of Food Hygiene and Technology*

- Laboratory of Food Hygiene
- Laboratory of Food Technology
- Laboratory of Milk Hygiene and Technology

5. *Department of Clinical Sciences*

- Companion Animal Clinic
 - *Unit of Companion Animal Medicine*
 - *Unit of Companion Animal Surgery and Obstetrics*
 - *Equine Unit*
 - *Unit of Anaesthesiology and Intensive Care*
 - *Diagnostic Imaging Unit*
 - *Exotic Animal Unit*
- Production Animal Clinic
 - *Unit of Ruminants*
 - ✓ Subunit of Medicine and Surgery
 - ✓ Sub unit of Obstetrics and Reproduction
 - *Unit of Monogastrics*
 - ✓ Subunit of Pigs
 - ✓ Subunit of poultry
 - ✓ Subunit of rabbits
 - *Unit of other animals of economic importance*
 - *Ambulatory Unit*
 - *Biotechnology Unit (embryo transfer, artificial insemination)*
 - *Unit of Bee Culture and Pathology*
- Diagnostic Laboratory
- Pharmacy

Each Department is coordinated by its Head and the General Assembly comprising all the members of the academic staff of the Department, and representatives of the

undergraduate students (3-5, depending on the number of the academic staff members of the Department) and 1-2 representatives of the technical staff working in the Department. The General Assembly of the Department coordinates teaching and research, allocates the funds among the Laboratories and/or Clinics and makes proposals to the *General Assembly* of the Faculty.

The Head of the Department is elected for a one year term by the General Assembly of the Department. The Head chairs the General Assembly and co-ordinates the function of the Department. The Directors of the Laboratories or the Clinics are elected for a three year term by the academic staff of the Department, and are responsible for the operation of the respective Laboratory or Clinic. The Clinic or Laboratory Director decides on the management and allocation of the Clinic/Laboratory budget, the allocation of space to the various sections or units and co-ordinates the function of the Clinic or Laboratory and the educational and research activities of these units.

It is noted that the various Units and subunits of the two Clinics of the Department of Clinical Sciences have no administrative responsibilities.

The Hellenic Veterinary Medical Association often makes proposals and suggestions to the *General Assembly* of the Faculty on various professional issues.

2.2 COMMENTS

The delegation of all decisions to the General Assembly of the Faculty, coupled with the limited authority of the Dean and the Executive Committee, results in a process that is relatively slow, but again there is no flexibility for the Universities, let alone the Faculties/Schools, to make changes to this system.

The paucity of permanent administrative personnel, coupled with the practice of leased staff by private companies, results in frequent replacements and inconsistencies of some provided services. This becomes especially problematic because of the legal requirement that some vital administrative activities must be performed by permanent staff.

Major organisational changes have been realized, especially in the Clinical Department. Two separate divisions comprise now the Department of Clinical Sciences: the Companion Animal Clinic and the Production Animal Clinic. A single Central Diagnostic Laboratory, a Pharmacy and the Diagnostic Imaging Unit are supporting these two Clinics. These changes allow for a more efficient and smooth function of the Clinical Department.

2.3 SUGGESTIONS

In view of the above mentioned facts and comments, it is apparent that there is no flexibility for the Faculty to make any organisation changes. It should be stressed, however, that at the time of writing this SER a wide discussion goes on in the country, following a proposal by the Ministry of Education on, among others, changes that, if approved, will radically affect the organisational structure of Higher Education Institutions in Greece.

Chapter 3. FINANCES

3.1 FACTUAL INFORMATION

3.1.1 GENERAL INFORMATION

The higher education system in Greece is public and can only be offered free of charge, by the State. This is a principle which accounts for the lack of any kind of fees for the Greek students including free textbooks, free food for students with family income of less than about 30,000 to 35,000 € (depending on factors like number of children in the family, number of students in the family, place of residence etc.), and, for a limited number of low family income students, low cost accommodation.

The AUTH is financed mainly by the State. Funding covering its *capital needs* (*public investment budget*), the *salaries* of all personnel, and the *operating expenses* is determined by the Ministry of Education. In addition, the Company for the Management of AUTH Property (CMAP) manages the income of the University from sources other than the state funds and research. During the calendar years 2009 and 2010 Aristotle University has faced severe cuts in State funding. The decrease in funding was in the order of 22% in 2010 as compared to 2008.

The amount covering the salaries is fixed in the sense that the salary of every employee of the University is determined by his/her rank, years of service and marital status in a completely specific way. Thus, the University has no autonomy in this regard. As far as the research staff of the Faculty is concerned, their salaries are covered from the research projects, which they are employed for, or constitute scholarship grants provided by the State Scholarship Foundation or other funding bodies.

The amount provided for operating expenses is determined by the State each year, taking into account the specifics of each University (e.g. number of Faculties and Schools, number of students, etc.). Following a decision by the AUTH Senate, the budget for operating expenses is divided into two major categories: *educational expenses*, handled at the Faculty level, and *other expenses*, handled at central University level.

The allocation of the educational budget among the Faculties/Schools is determined by a fixed algorithm taking into account the factors shown below. The FVMT receives, proportionally, a higher budget than Faculties providing theoretical teaching only (e.g. humanities disciplines), however a similar budget with Faculties providing any type of practical/laboratory training. In particular, the educational budget allocation to each Faculty/School is based on the following criteria:

- Science studies (coefficient 5)
- Humanities/Classical studies (coefficient 1)

- Number of students
- Duration of studies
- Number of staff members
 - ✓ Number of academic staff (coefficient 6)
 - ✓ Number of Special Technical and Laboratory Staff (coefficient 1)
 - ✓ Number of Special Laboratory Teaching Staff (coefficient 2)

The budget (other expenses) at central University level is allocated by the Senate to different expense categories, including operational expenses (fuel, electricity, water, etc.), subcontracting for cleaning, maintenance, security, library expenses, health coverage expenses, etc. Therefore, all costs for this sort of expenses for Faculties and Schools are covered by the University. The expenses for maintenance of the buildings and those for utilities (water, electricity, fuel, etc.) of the FVMT are covered directly by this budget. For the calendar year 2010 this expenditure amounted to 374,949 € and was partitioned as follows:

- Maintenance of buildings: 84,670 €
- Utilities:
 - ✓ Water expenses: 47,705 €
 - ✓ Fuel expenses: 120,581 €
 - ✓ Electricity expenses: 97,935 €
 - ✓ Telephone expenses: 24,058 €
- Total expenditure: 374,949 €

With regards to the Public Investment Budget covering the capital needs of the University, after its State determination, the University, following a decision by the Rector's Council, decides on its allocation which is based on applications and specific needs. In practice, the Public Investment Budget covers partially the cost of strategic initiatives related to the expansion and the modernization of the University, e.g. funding for building works, major equipment and its replacement. A considerable amount of the Public Investment Budget is distributed among the Faculties of the University to cover expenses for providing equipment. The amount given to the FVMT from the Public Investment Budget in 2010 was 109,500 €, whereas another 250,000 € will be provided to the FVMT, during 2011, for the purchase of a 4-slide computer tomography scan unit, a modern ultrasound system, a computer assisted semen system and a real time PCR unit, which are scheduled to be ordered. Furthermore, within 2010 a significant amount (552,811 €) was provided by AUTH in order to renovate the FVMT buildings.

Concerning the distribution of funds within the FVMT, the state funds of any type allocated to the Faculty are distributed to the Departments following a decision by the General Assembly of the FVMT, after taking into account the number of Units and staff members of each Department. The responsibility for the further distribution to the

various Units of the Departments (Laboratories/Clinics) rests on the General Assembly of each Department.

The existing legal provisional status, allows for free of charge textbooks to be distributed to the students (one textbook for each course). The amount covering this expenditure is in the order of 100,000 € yearly and is paid directly by the Ministry of Education. In particular, for the calendar year 2010 this expenditure amounted to 128,531 €.

3.1.2 INFORMATION ON EXTRA INCOME

The main source of non-state funding is from: clinical and diagnostic services, research grants, and other sources.

Funding originating from the University budget is managed through the Finance Office of the AUTH. However, funding from clinical and diagnostic services, and research projects is managed through the **Research Committee** of the AUTH. This committee withholds overhead charges of 5.8% on funds originating from services provided by the two Clinics and the Diagnostic Laboratory of the Department of Clinical Sciences, and 10% on funds originating from research projects. Funding originating from other sources (donations etc.) may be managed through either the Research Committee or the Company for the Management of AUTH Property.

3.1.3 OVERVIEW INCOME (REVENUE) AND EXPENDITURE

The total revenue of the establishment for the last three calendar years is summarized in Table 3.1.

Table 3.1: **Income/Revenue (in Euro)**

Year	State (government)		AUTH	Income generated by the Faculty		Total
	To University administered outside the Faculty	Direct to Faculty	Direct to Faculty	Income from services provide	Research	
2010	5,525,882	NA ¹	552,811	423,591	276,187	6,778,471
2009	6,495,241	NA	---	429,590	425,904	7,350,735
2008	6,318,993	NA	---	321,027	520,145	7,160,165

¹ Not applicable

The allocation of the expenditure for the calendar years 2008 - 2010 is presented in Table 3.2.

Table 3.2: **Expenditure (in Euro)**

Year	Pay	Non Pay				Total
	Salaries	Teaching support	Research support	Clinical support	Other ¹	
2010	4,497,352	446,226	424,861	466,072	943,960	6,778,471
2009	5,344,434	387,955	556,946	480,816	580,584	7,350,735
2008	5,317,834	392,982	725,141	378,990	345,218	7,160,165

¹ It comprises expenses for the maintenance and renovation of the buildings, the utilities (water, electricity, fuel, etc.), and the operation of the FVMT secretariat.

3.2 COMMENTS

Insufficient state funding, and bureaucracy coupled with the very noticeable lack of administrative personnel, especially at Departmental and laboratory/Clinical level, create many problems, and substantially increase the burden of administrative activities put on the academic staff. The State and the University must recognize that veterinary education is more expensive than training in other science-based disciplines and requires a higher level of funding than other professional training programmes, such as Medicine and Dentistry, which are often subsidized by the National Health Service. Having said that, State funding of any type allocated to the Faculty by the AUTH was increased by 2.8% in 2009, and moderately decreased by 12.6% in 2010, although during the same calendar years, AUTH has faced severe cuts in State funding, in the order of 6% and 22%, respectively, as compared to 2008. This, in any case, is indicative of the current AUTH's policy towards the FVMT.

Universities in Greece possess the privileges of full autonomy and academic independence. However, at the same time, the Greek Constitution refers to the State control upon the Universities, which is exerted by the Ministry of Education, stemming primarily from the fact that they are State-financed institutions.

It must be stressed, however, that the Faculty has a considerable autonomy in deciding on how to spend the money allocated to it, especially the money earned by the Faculty through the services provided. It must also be stressed that following a special agreement with the Research Committee, the overhead charges of the income from services provided by the two Clinics of the Department of Clinical Sciences is only 5.8%. The University has the right to withhold an additional 20% of those funds, however the AUTH has agreed to not exercise this right, therefore, the remaining 94.2% is retained for the Clinics' own use.

There is inadequate provision for replacing and updating the necessary teaching, laboratory and clinical equipment, at regular intervals. Also the amount allocated to the Faculty by the State for research is inadequate.

Regarding the salary of the teaching and support staff, it is rather unsatisfactory, especially after the recent cuts due to the financial crisis. It may be a bit higher than the salary of the state veterinary surgeons, but lower than salaries of most of the

veterinary surgeons with similar qualifications working in industry and in private practice, and considerably lower than the respective salaries in Universities in many other EU countries. However, the academic career in Veterinary Medicine still remains attractive for young people and no resignations have been submitted from Faculty members to move to private practice.

The expenditure for maintenance of the buildings and for utilities (water, electricity, fuel, etc.) of the FVMT is covered directly by the University. For the last few years, the funds have been considered sufficient to ensure the routine cleaning and maintenance of the buildings, and in particular the renovation of the companion animal clinic as well as the production animal clinic and the dairy sheep farm at Kolchiko.

In view of the increased needs, it is difficult to define what would be the number one priority in case the FVMT had increased funding. However, when the members of the academic staff of the FVMT were asked to fill in a questionnaire, the majority (70%) considered that number one priority is the appointment of additional support staff.

3.3 SUGGESTIONS

Adequate provision must be made to fund the purchase of new and to update regularly teaching, laboratory and clinical equipment.

The salaries of the teaching and support staff must be increased, the budget for hiring new academic and support staff should be increased, and also vacancies from retired faculty should be filled.

In view of the current and future financial constraints, the Faculty should put a lot of effort to increase funding through various resources and especially research funding by obtaining research grants.

Given the current financial situation, the opportunity to increase FVMT's income by increasing client service fees may lead to a decrease of the case load, and therefore would not be recommended. Instead, the Faculty should adhere to the policy that is being implemented for the last couple of years, namely to keep the fees low and make efforts to increase the case load, and therefore maintain or even increase its income.

Chapter 4: CURRICULUM

4.1 FACTUAL INFORMATION

There is no defined national curriculum. The curriculum is proposed by the Education Committee of the FVMT, approved by the General Assembly (GA) of the Faculty and the University Senate, and finally is adopted by the Ministry of Education. However, this is a routine process and neither the University nor the Ministry may interfere with the content of the proposed curriculum. Furthermore, the Education Committee proposes adjustments on any of the issues related to the curriculum which then need to be approved by the GA of the Faculty.

Since the last EAEVE visitation (2001) a new curriculum has been introduced. It comprises five years of theoretical and practical training leading to the award of the professional title of “Diploma of Veterinary Medicine” (DVM degree). During the years 1998 and 1999, four faculty members of the FVMT studied the curriculum of various Veterinary Faculties, and visited 8 Faculties in Europe and one in North America, for the same purpose. In addition, the academic records of all the graduates of the FVMT since its creation (1950-1951) as well as the replies to specific questionnaires that had been sent to about 1,000 Greek veterinarians and 70 companies which employ veterinarians in the country, were evaluated. Finally, after interviewing the presidents of various professional veterinary organizations in Greece and a number of practicing veterinarians in the areas of animal health (pigs, poultry and horses), and in the area of food industry or in pharmaceutical companies, these faculty members produced a proposal outlining the “general principles” of a curriculum to be applied in the FVMT. These general principles were presented and extensively discussed with members of the visiting team of the previous EAEVE evaluation of the FVMT in 2001. Based on these general principles, the then curriculum committee produced a draft of the new curriculum, which, following vigorous discussions and necessary adjustments, was approved by the GA of the FVMT in 2002. This new curriculum was introduced in the academic year 2003-2004.

The present curriculum emphasizes the integration of teaching among different modules and it gives prominence to the practical and clinical training of the students. Notably, there is full integration between most of the EU-listed subjects in Basic Sciences. Moreover, integration among clinical sciences and pathology, parasitic and infectious diseases, and animal production has been achieved. Furthermore, preclinical teaching now emphasizes principles important to clinical veterinary medicine. For instance, radiographic material, computer assisted teaching and live anatomy have been incorporated into the teaching of Anatomy of the dog. Moreover, in Physiology students are introduced to pathophysiology and clinical problem-solving techniques, and develop an understanding of the relationship

between Physiology and practice of Veterinary Medicine. Apart from problem-solving, special attention is given in making students aware of their future ethical responsibilities towards their patients, and the need to act in a professional manner. Furthermore, acquisition of competences in both written and oral communication is among the objectives of the curriculum.

The curriculum comprises obligatory or “core” modules and a number of electives. Details are presented later in this chapter.

Discussions on curriculum matters take place regularly. Proposals related in any way to the curriculum and its implementation may be submitted to the Education Committee by members of the academic staff, through their respective Department, or by students, through their representatives in the Education Committee. The Committee may also act on its own initiative to propose changes to the curriculum. The Committee discusses all the proposals and formulates its proposal to the GA of the Faculty for approval. Throughout the years, since the implementation of the new curriculum, some of the modules underwent changes to take their final form presented here, indicating that the curriculum is flexible.

4.1.1 POWER OF SUBJECTS AND TYPES OF TRAINING

4.1.1.1 POWER OF SUBJECTS

Obligatory (core) courses account for a large percentage of the curriculum and amount to a total of 283 credits (1 ECTS = 25 hours of student work, including self-directed learning). The Curriculum also includes elective courses that can be taken from the 4th to the 10th semester. Each course offers a certain number of credits. Successful completion of the studies in FVMT requires that a student must take electives that account for at least 17 ECTS (in addition to the credits of the core curriculum), which time wise are equivalent to about 10 weeks. Out of these 17 ECTS, 16 must be gathered from courses with obligatory practicals.

The programme also includes a number of lectures on specific subjects such as practice management, career planning and opportunities, informatics, and introduction to the veterinary profession, as well as the obligatory extramural work (see later in this chapter). Although not marked, these courses must be taken by all students.

4.1.1.2 TYPES OF TRAINING

In the context of *types of training* the following classification is used:

4.1.1.2.1 Theoretical training

Lectures are theoretical training that convey theoretical knowledge, complement textbooks or notes and provide current information. The lectures are delivered to all

students enrolled in a semester. Lecturers are using audiovisual aids, including slide presentations and videos. The students in the beginning of each course are provided with a reference list in English or in Greek language. Lecturers are also using material from their own research. Depending on the subject, the lectures may focus on the description of specific diseases or use a problem-oriented approach to teach the students how to use basic concepts and principles and how to think critically. Students are involved in asking questions or taking part in brief discussions.

Seminars (tutorials or group work) are teaching sessions directed towards a smaller group of students during which they work on their own, or as a team, on part of the theory, prepared from manuscript notes, photocopied documents, articles and bibliographic references. Information is illustrated and knowledge extended by the presentation of audio-visual material, exercises, discussions and, if possible, case work. Following some lectures, group work continues in small rooms on furthering certain topics. However, this type of work is not included in the theoretical intramural training. Presentations by students or attendance of seminars also take place outside the curricular hours.

Self-directed learning is included in the ECTS of every course (1 ECTS = 25 hours of work load). It refers to self-learning sessions that allow students to further research a certain topic of their academic curriculum and write an independent essay under the supervision of the corresponding faculty member (reading the literature, discussions with the supervisor, preparation of presentation). Furthermore, self-directed learning also includes study work of the student (for reading textbooks, preparing for examinations, sitting the exams etc.) and thus the number of hours is higher than the number of intra-curricular hours (see Table 4.1.1 below).

4.1.1.2 Supervised practical training

Laboratory and desk based work refers to teaching sessions where students themselves actively perform laboratory experiments and analyses, and use microscopes for the histological or histo-pathological examination of specimens. It also includes work on documents and idea-formulation without the handling of animals, organs, objects or products (e.g. essay work, clinical case studies, handling of herd-health monitoring programmes, risk-assessment computer-aided exercises).

Non-clinical practical work means teaching sessions where students themselves work on normal animals, on objects, products, carcasses etc. (e.g. animal husbandry and nutrition, ante mortem and post mortem inspection, food hygiene, etc.) and perform dissection or necropsy. Such work also includes teaching of basic surgical techniques using surrogates and other material purchased for this purpose. Excursions to farms for animal husbandry and nutrition training, fish culture premises, slaughterhouses and food processing plants are also included in non-clinical animal work.

Clinical work. These are strictly hands-on procedures by students, which include work on normal animals in a clinical environment, on organs and clinical subjects, including individual patients and herds, applying theoretical knowledge obtained previously, and making use of the relevant diagnostic and therapeutic data, under the supervision of staff members. Surgery or propaedeutical hands-on work on organ systems on cadavers to practice clinical techniques are also classified as clinical work.

4.1.2- UNDERGRADUATE CURRICULUM FOLLOWED BY ALL STUDENTS

A general outline of the core curriculum, including the distribution of the various courses to sections and modules per semester is given in Table 4.1.2.

Elective courses offered during the academic year 2010-2011, and their respective ECTS, are presented in Table 4.3.

The curriculum guidebook (Appendix I) contains the details of the curriculum. Course content is briefly presented for each lecture in order to help the student better follow the course and to avoid overlapping of material taught in different courses.

4.1.2.1 CURRICULUM HOURS

Table 4.1.1: General table of curriculum hours taken by all students

Year	Hours of training							Total
	Theoretical training		Self-directed learning	Supervised practical training			Other	
	Lectures	Seminars		Laboratory and desk based work	Non-clinical animal work	Clinical work		
(A)	(B)	(C)	(D)	(E)	(F)	(G)		
First	287		714	115	84			1,200
Second	328		807	154	180	6 ^a	120 ^b	1,595
Third	402		951	115	36	84	120 ^b + 85 ^c	1,793
Fourth	445		984	59.5	72	64.5	120 ^b + 170 ^c	1,915
Fifth	6		521	-	24	636	300 ^d + 170 ^c	1,657
Total	1,468		3,977	443.5	396	790.5	1,085	8,160

^a clinical training in bee diseases; ^b extramural studies; ^c elective courses workload; ^d out-of-hours duties
NB. Hours in columns A, D, E, and F were calculated according to tables 4.2 and 4.4.

Table 4.1.2: Overall structure of the “core” curriculum: Modules, sections, courses

Semester	Module	Sections and their content (courses)	L ¹	P ²	ECTS ³
1	1.	Section 1	89	43	13.5

Semester	Module	Sections and their content (courses)	L ¹	P ²	ECTS ³
2	Molecules, Cells, Tissues (Histology, Embryology, Molecular Biology, Genetics, Chemistry, Biochemistry, Physiology)	A. Organisation of the Cell			
		B. Chemistry			
		C. Biomolecule Structure & Function			
		D. Membranes & Cell Physiology			
		E. Flow of Genetic Information and Heredity I			
		Section 2			
		A. Flow of genetic information and Heredity II			
		B. Body tissues			
		Section 3			
		A. Cell & body metabolism			
	B. Embryology				
	3.I	Section 1			
		Biostatistics	18	12	3
		Section 2			
		Informatics (score grading not required)		12	1
		Section 3			
Foreign Language Terminology		24		3	
4.I Animal Science I (General Animal Husbandry, Welfare & Animal Behaviour, Ecology & Protection of the Environment)	Section 1		31	30	6
	General Animal Husbandry I				
	Section 2				
	A. General Animal Husbandry II				
B. Ecology & Protection of the Environment					
2. Structure & Function of Body Systems I (Basic Principles of Pharmacology & Anatomy, Physiology, Biochemistry & Pharmacology)	Section 1		94	88	16.5
	A. General Pharmacology				
	B. The Nervous System-Neurohumoral Control I				
	Section 2				
	A. The Nervous System-Neurohumoral Control II				
	B. Sensory Organs; the Main Sensory & Motor-Neural Pathways, Pain, Anaesthesia & Analgesia				
	Section 3				
	A. Endocrine Glands-Hormones				
	B. Locomotor System				
	4.II Animal Science II (Animal Production Economics & Fundamentals of Animal Nutrition)	Section 1			
Fundamentals of Animal Nutrition					
Section 2					
Animal Production Economics					

Semester	Module	Sections and their content (courses)	L ¹	P ²	ECTS ³
3	4.III Animal Science III	Section 1	57	55	10.5
		Animal Husbandry – Pig Production			
		Section 2			
		Animal Husbandry – Poultry Production			
		Section 3			
		Animal Husbandry – Equine Husbandry, Pets, Rabbit Farming & Laboratory Animals			
		5.I Structure & Function of Body Systems II (Anatomy, Physiology, Biochemistry, & Pharmacology)	Section 1 A. Cardiovascular System B. Blood – Haemopoietic Tissues Section 2 A. Respiratory System B. Urinary System C. Drugs (Urinary, Circulatory, Respiratory Systems) Section 3 Reproductive System - Udder	99	83
4	4.IV Animal Science IV	Section 1	48	62	9.5
		Animal Husbandry – Cattle Production			
		Section 2			
		Animal Husbandry – Small Ruminant Production			
		Section 3			
		Feeds – Rations			
		5.II Structure & Function of Body Systems III (Anatomy, Physiology, Biochemistry & Pharmacology)	One Section A. Digestive System B. Avian Anatomy - Physiology	41	82
	6.I Pathogenic Agents I	Section 1	83	58	13.5
		A. Introductory Bacteriology			
		B. Introductory Mycology – Pathogenic Yeasts and Fungi			
		C. Principles of Virology			
		D. Basic Immunology			
		Section 2			
	A. Parasitology				
	B. Parasitic Diseases I				
	C. Bee Diseases & Culture				
4-5	Extramural work	Animal science (4 weeks)		120	
5	3.II Epidemiology	One Section	24	12	3.5
	6.II	Section 1	134	76	20

Semester	Module	Sections and their content (courses)	L ¹	P ²	ECTS ³
	Infectious Agents II & General Pathology	A. General Pathology - Cytopathology			
		B. Circulatory System			
		C. Inflammation-Immunopathology			
		D. Disorders of Tissue and Organ Growth			
		E. Neoplasia			
		Section 2			
		A. Bacteria and Bacterial Infectious Diseases of Animals			
		B. Viruses and Viral Diseases of Animals			
		Section 3			
		Parasitic Diseases II			
	7.I Food Sciences I	One Section Principles of Hygiene and Technology of Milk and Milk Products	18	17	4
	8.I Clinical Sciences I	One Section	41	44	7.5
		A. Methods of Clinical Examination and Diagnosis			
		B. Principles of Radiology			
		C. Introduction to the Principles of Surgery			
		D. Antimicrobial Drugs			
		E. Toxicology			
6	7.II Food Sciences II	One Section	20	22	4
		A. Microbiology of Food of Animal Origin			
		B. General Principles of Processing & Quality Assurance of Food of Animal Origin			
		C. Hygiene and Quality Assurance of Game and Honey			
	7.III Farming & Diseases of Aquatic Organisms	One Section Farming & Pathology of Aquatic Organisms	26	16	4.5
	8.II Clinical Sciences II (Diseases, Surgical Management and Pathology of the Cardiovascular, Hematopoietic, Diagnostic Imaging, Respiratory and Urinary System, Reproductive Disorders and Pathology of the Dog and Cat, Disorders of the Udder)	Section 1	139	48	20
		The Cardiovascular System			
		Section 2			
		The Respiratory System			
		Section 3			
		A. The Urinary System			
		B. The Reproductive System of Carnivores– Mammary Gland			
6-7	Extramural work	Work in farms or companion animal practices		120	
7	3.III Veterinary Deontology	One Section	12		1.5

Semester	Module	Sections and their content (courses)	L ¹	P ²	ECTS ³
	& Law				
	7.IV Food Sciences III	<p>Section 1</p> <p>A. Management and Operation of Slaughterhouses. Production and Quality Assurance of Meat. Hygiene and Inspection of Meat</p> <p>B. Hygiene and Quality Assurance of Poultry Meat and Eggs</p> <p>Section 2</p> <p>A. Production and Assurance of hygiene and quality of meat-based products</p> <p>B. Hygiene and Quality Assurance of Fish and Fish Products</p> <p>C. Food-borne Diseases</p> <p>D. Environmental Issues Related to Food Production (including waste management)</p>	60	52	11
	8.III Clinical Sciences III (Diseases, Surgery, Diagnostic Imaging and Pathology of the Alimentary System, Pathophysiology of reproduction and pathology of the male and female reproductive system, Modern methods of artificial insemination and reproduction management)	<p>Section 1</p> <p>Diseases of Oral Cavity, Salivary Glands, Stomach (ruminant forestomach) Small and Large Intestine</p> <p>Section 2</p> <p>A. Hernias. Peritoneal Cavity. Diseases of Esophagus, Liver & Pancreas.</p> <p>B. Pathophysiology of Reproduction & Pathology of Male Genital Track</p> <p>Section 3</p> <p>A. Obstetrics-Pathology of Reproduction & Pathological Anatomy of Female Productive Animals and Horse</p> <p>B. Modern Methods of Insemination and Management of Reproduction of Animals</p>	167	39	22
8	7.IV	Student's practical training in slaughterhouses		18	1
	8.IV Clinical Sciences IV (Diseases, Surgery, Diagnostic Imaging and Pathology of the Integument, the Endocrine, Nervous and Musculoskeletal System, Exotic Animal Medicine and Surgery, Anesthesiology and Intensive Care, Avian Medicine)	<p>Section 1</p> <p>A. Anaesthesia</p> <p>B. Nervous System</p> <p>Section 2</p> <p>Dermatology, Sensory Organs, Endocrine System</p> <p>Section 3</p> <p>Musculoskeletal System</p> <p>Section 4</p> <p>A. Avian Medicine</p> <p>B. Exotic and Wildlife Medicine</p> <p>C. Miscellaneous</p>	206	87	29.5
8-9	Extramural work	Work in slaughterhouses and food industries		120	
	8.V Clinical Sciences V	<p>Section 1</p> <p>Companion and exotic animal medicine</p>		660	

Semester	Module	Sections and their content (courses)	L ¹	P ²	ECTS ³
9-10	(weeks per discipline) Necropsy Room 1, Avian Medicine 1, Small Ruminants 2, Large Ruminants 5, Diseases of Pigs 2, Companion Animal Medicine 5, Surgery and Reproductive Disorders of Companion Animals 5, Equine Medicine and Surgery 0.5, Diagnostic Imaging 1.5, Anaesthesiology- Intensive Care 2, Exotic Animals 0.5	Section 2 A. Small animal surgery B. Ophthalmology C. Equine medicine and surgery Section 3 A. Anaesthesia & Intensive Care B. Diagnostic Imaging C. Obstetrics & Reproductive Disorders of Companion Animals Section 4 A. Avian Medicine B. Exotic and Wildlife Medicine C. Miscellaneous			47.5
	Professional knowledge	1. Practice management, career planning and opportunities 2. Veterinary certification & writing (incorporated into other courses)	6		
	Total		1,468	1,990	283

NB. Semesters 3-6 and 7-10 include 1 week and 2 weeks of elective courses, respectively

¹ Lectures (hours in the respective module), ² Practical or clinical training (hours in the respective module),

³ ECTS units of the respective module, except for Module 3 I (semester1), in which each unit refers to the respective section.

Table 4.2 Curriculum hours in EU-listed subjects taken by each student

Subject	Hours of training							Total
	Theoretical training		Self Directed Learning	Supervised practical training			Other	
	Lectures	Seminar		Laboratory and desk-based work	Non-clinical animal work	Clinical training		
1. Basic Subjects								
a. Physics	Basic knowledge taught at high school. Specific topics included in physiology, anaesthesiology and diagnostic imaging							
b. Chemistry	3			6				9
c. Animal biology	Basic knowledge taught at high school							
d. Plant biology	Integrated with animal nutrition							
e. Biomathematics	18			12				30
<i>1-Total number of hours</i>	21			18				39
2. Basic Sciences								
a. Anatomy (including Histology and embryology)	123			50	136			309
b. Physiology	78			5	36			119
c. Biochemistry, cellular and molecular biology	52			10				62
d. Genetics (including molecular genetics)	23			15				38

e. Pharmacology and pharmacy	69			28	9			106
f. Toxicology (including environmental pollution)	10			5				15
g. Microbiology (including virology, infectious diseases ¹ , bacteriology and mycology)	97			55				152
h. Immunology	14			9				23
i. Epidemiology (including scientific and technical information and documentation methods)	24			12				36
j. Professional ethics	2							2
2-Total number of hours	492			189	181			862
3. Clinical Sciences								
a. Obstetrics ²	21					-		21
b. Pathology (including pathological anatomy)	98			32	48			178
c. Parasitology	58			16	16			90
d. Clinical medicine and surgery (incl. Anaesthetics)	293			19.5	14	604.5		931
e. Clinical lectures on:								
1. Poultry and avian medicine ²	28			20		-		48
2. Aquatic animals	26				4	12		42
3. Rabbits ²	2					-		2
4. Bees	6					6		12
5. Exotics ²	8					-		8
f. Field veterinary medicine (ambulatory clinics)								
1. Production animals						120		132
2. Equines						12		
g. Preventive Medicine	Incorporated into infectious diseases, clinical Medicine and epidemiology							
h. Diagnostic imaging (including radiology) ²	20							20
i. Reproduction and reproductive disorders ²	72							72
j. Veterinary state medicine and public health	Incorporated into infectious diseases and epidemiology							
k. Veterinary legislation and forensic medicine	6	It includes principles of animal transportation						6
l. Therapeutics	Incorporated into pharmacology and clinical Medicine							
m. Propaedeutics (including laboratory diagnostic methods)	18					36		54
3-Total number of hours	656			87.5	82	790.5		1,616
4. Animal Production								
a. Animal production	33							33
b. Animal nutrition	26			36	7			69
c. Agronomy	3	Incorporated in Module 4.IV, semester 4						3
d. Rural economics	22			6				28
e. Animal husbandry	41			17	76			134
f. Veterinary hygiene	11			7				18
g. Animal Ethology and Protection	16							16
h. Ecology and Environmental Protection	12			12				24
4-Total number of hours	164			78	83			325

5. Food hygiene / Public Health							
a. Inspection and control of animal foodstuffs or foodstuffs of animal origin and the respective feedstuff production unit	19						19
b. Food hygiene and technology	62						62
c. Food science including legislation	21						21
d. Practical work (including practical work in places where slaughtering and processing of foodstuffs takes place)				59	50		109
5-Total number of hours	102			59	50		211
6. Professional knowledge							
a. Practice management, career planning and opportunities	6						6
b. Veterinary certification and writing	Certification is taught during necropsy and clinical training; writing is incorporated into informatics and case presentations by students						
6-Total number of hours	6						6
Grand total number of hours	1,441			431.5	396	790.5	3,059

¹ As part of the microbiology, infectious diseases include only aetiology, pathogenesis, diagnosis and prevention. The rest are taught in the respective course of Internal Medicine

² Clinical training in these subjects is included in "clinical medicine and surgery"

Table 4.3: Curriculum hours in EU-listed subjects offered and to be taken as electives

Subject (hours)	Theoretical training			Supervised practical training			Semester in which the respective subject may be taken/ECTS	Hours to be taken by each student per subject group
	Lectures	Seminars	Self directed learning	Laboratory and desk based work	Non-clinical animal work	Clinical work		
	A	B	C	D	E	F	G	
Basic sciences								32
Molecular biology techniques and their applications in veterinary medicine	10			2			5/2.0	
Analytical epidemiology	10			10			6/2.0	
Clinical sciences								1,193
Equine medicine, surgery and obstetrics I	10				40		9/4.0	
Equine medicine, surgery and obstetrics II	10				40		9/4.0	

Alternative methods for parasite control	8						5/1.0	
Infectious diseases of major importance for Greece	20	8					7/2.5	
Diseases of farmed aquatic animals	12				18		7/2.5	
Husbandry and diseases of farm animals: Small ruminants	15					40	8/4.0	
Husbandry and medicine of production animals : Cattle	10					40	9/3.5	
Management interventions for improvement of reproductive parameters & the udder health of production animals	10					24	9/2.5	
Biotechnology and modern methods of confrontation of reproductive problems and the udder health in farms of production animals	10					24	10/2.5	
Diagnostic Imaging	5					25	8/2.0	
Husbandry and medicine of farm animals: Swine	6					40	10/3.0	
Small animal medicine I	12					38	9/3.5	
Small animal medicine II	12					38	10/3.5	
Companion animal anaesthesia and intensive care I	12					38	9/4.0	
Companion animal anaesthesia and intensive care II	12					38	10/4.0	
Canine & feline orthopaedics & neurosurgery I	12					38	9/4.0	
Canine & feline orthopaedics & neurosurgery II	12					38	10/4.0	
Small animal soft tissue surgery I						50	9/3.5	
Small animal soft tissue surgery II						50	10/3.5	
Small animal obstetrics I	4					46	9/3.5	
Small animal obstetrics II	4					46	10/3.5	
Small animal dentistry I	5					45	9/3.5	
Small animal dentistry II	5					45	10/3.5	
Ophthalmology I	10					40	9/4.0	
Ophthalmology II	10					40	10/4.0	
Avian Medicine	12					30	10/3.0	
Molecular techniques and bee disease diagnosis	10			8			5/2.0	
Comparative pathology of neoplasia	12				6		7/2.0	
Animal production								133
Ostrich, duck and goose production	10				9		5/2.0	

Organization, management and funding of animal production establishments	12				4		5/2.0	
Turkey, quail, guinea fowl, pheasant and partridge production	10				8		4/2.0	
Economics of distribution of animal products	12			4			4/2.0	
Aquatic environment-Interactions between environment and aquaculture	12				12		6/2.5	
Breeds, nutrition, training, behaviour & welfare of dogs	12				6		4/2.0	
Ecological bee culture	10			12			4/2.0	
Food hygiene/Public health								220
Physicochemical & organoleptic methods for assessing the quality of food – Basic principles of food chemistry	6			15			7/2.0	
Hygiene and technology of dairy products	24			18	6		8/4.5	
Food safety and food inspection	10			21			9/2.5	
Hygiene of foods of animal origin-Development and implementation of HACCP systems in the Food Industries. Infrastructure and operation of food of animal origin processing establishments	20			2	20		9/4.0	
Food biotechnology	9			6			8/2.0	
Food microbiology	21			24			8/4.0	
Food toxicology	12			6			8/2.0	
Other								231
Art & the brain	10						5/1.0	
Bioethics	20						5/1.5	
Business & innovation	21			180			7/3.0	

Table 4.4: Curriculum hours in subjects not listed in Table 4.2 to be taken by each student, including Diploma work (final graduation thesis, or final graduation work).

Subject	Theoretical training			Supervised practical training			Other	Total
	Lectures	Seminars	Self directed learning	Laboratory and desk based work	Non-clinical animal work	Clinical work		
	A	B	C	D	E	F	G	
Informatics				12				12
English language terminology	24							24
Introduction to veterinary profession	3							3

4.1.3 FURTHER INFORMATION ON THE CURRICULUM

The curriculum does not offer orientation programmes, however it allows students to take electives from the disciplines he/she is interested in, in a way that a student may take all the electives offered in a specific discipline, namely clinical sciences or food sciences.

Practical training in animal production has been incorporated into the curriculum of the undergraduate students from the first semester of their studies. In particular, starting from 2009, students have the opportunity to be trained in the FVMT's own dairy sheep farm (see chapter 7).

Students can attend electives starting from the 4th to the 10th semester. These are independent courses and do not belong to any regular module of the curriculum. All elective courses available to students are listed in Table 4.3. The content of these along with information regarding hours of lectures and/or practicals, ECTS, maximum and minimum numbers of attending students, and any requirements of previous attendance may be found in Appendix I.

For all courses of the curriculum, attendance is generally voluntary, however all supervised practical training is mandatory (at least 80% attendance is required). For verification of attendance an attendance list is used.

Students are not allowed to enrol in the 4th year (7th semester) unless they have successfully passed the so called "prerequisites", namely most of the courses of the first two years, modules 2, 5.1, and 5.2 in particular.

Students who fail a course examination can, by Greek law, repeat the exam as many times as necessary.

Specific information on clinical training

As mentioned above, attendance of practical/clinical training sessions is obligatory, for both the "core" curriculum and the elective courses a student chooses to attend. With regards to clinical training, during the 3rd, 4th, and 5th year (semesters 6 to 10) of study students are divided into groups as follows:

One day a week, during the 6th semester the students (88 this year) are divided into 3 groups: one (40%) in Companion Animal Clinic, one (40%) in Production Animal Clinic and one (20%) in Pathology. Overall, each student receives clinical training for 9 days, 4 hours per day (36 hours) in the 6th semester.

One day a week, during the 7th semester the students are divided into 2 groups: one group in Companion Animal Clinic and one in Production Animal Clinic.

One day a week, during the 8th semester the students (107 this year) are also divided into 2 groups, one in each clinic. Moreover, all students (divided in two groups) are trained in poultry medicine one day per week, 2 hours a day (26 hours).

In each one of the 7th and 8th semesters training is provided for 13 days, 3 hours per day (39 hours). In addition, in the Clinic of Companion Animals, as from the 8th semester, students start their out-of-hours service (until 22.00 hrs) as "on duty" students. Each student of the 8th semester is required to be on duty for 4 times (approx. 37 hours) during the semester.

In all semesters, the Companion Animal group is divided into three subgroups: One subgroup in small animal medicine, one in small animal surgery-obstetrics, and one that is further sub-divided into four groups namely a) equine medicine and surgery, b) ophthalmology and exotics, c) anaesthesia/intensive care, and d) diagnostic imaging.

In Production Animal Clinic, during the 6th and 8th semesters, one of the two groups of students is trained in Medicine (bovine, small ruminant, swine) and one in Obstetrics-Reproduction (that is further sub-divided into two groups). In the 6th semester in Medicine each subgroup consists of 18 students, whereas in Obstetrics-Reproduction each subgroup consists of 9 students. In the 8th semester the sub-group in Medicine consists of 22 students (26-27 this year with a total of 107 students), whereas in Obstetrics-Reproduction each sub-group consists of 11 students (13-14 this year).

Training of the 7th semester students in the Production Animal Clinic (19.5 hours) and of the 8th semester students in Poultry Medicine (20 of the 26 hours, the remaining 6 hours being clinical training in the clinic) is considered non clinical, but instead they are participating in desk-based training. It follows that each 7th semester student receives 19.5 hours of clinical training in companion animals only. As regards the 8th semester, students receive 39 hours of clinical training each in the two clinics, and 6 hours in poultry medicine.

During the final year (semesters 9-10), full time (6 hours a day) clinical training is provided for a 26-week period, 4 days per week for 20 weeks and 5 days per week for 6 weeks. This period is lecture-free and includes 660 hours of clinical training in both clinics for each student. The 5th day (Friday) of each of the 20 weeks is used for electives. Students attending elective courses on clinical subjects may have a few or no lectures. With a "normal" number of students, all may be accommodated in the clinical electives. However, especially for the present year with a very large number of last year students, some of them had to either enroll in non-clinical courses or had to wait for next year to take a specific clinical course. In both semesters, under "normal" circumstances (see chapter 9, comment Nr 3), the group in each clinic consists of about 45 students (71 students this year).

In the Companion Animal Clinic, students are divided into three sub-groups [normally 14-15 students each, 23-24 this year (about 6 for each of the 4 groups, i.e. equine,

ophthalmology and exotics, anaesthesia/intensive care, and diagnostic imaging)], as described above. The rotation schedule for half of the students (group A) for the first half of the 9th semester is shown in Table 4.5a. Students receive clinical training for 3 weeks of 5 days each, and 4 weeks of 4 days each. For the second half of this semester, the remaining half of the students (group B), who were attending the Production Animal Clinic during the first half (Table 4.5b), are trained for 6 weeks of 4 days each. It is reminded that the fifth day (Friday) is used for electives. The whole scheme is repeated in semester 10.

In the Unit of Surgery, students are divided into two smaller groups one for receiving (in the consultation rooms) and one for assisting in surgeries. On surgery, 1-2 students along with a postgraduate and a PhD student are scrubbing in.

Clinical training in the Production Animal Clinic includes both visits to farms and in-clinic training. Students are divided in 6 groups (except for the current academic year where the groups are 7) each consisting of a maximum of 10 students, who rotate as shown in Table 4.5b (for the rotation scheme see above). Students are trained either at the premises of Kolchiko or visit livestock and poultry farms in the Faculty vehicles and under the supervision of one faculty member and one-two postgraduate students or interns. Students are also obligated to participate in after hours duties in the Kolchiko Production Animal Clinic and sheep Farm.

Taking into account all the above, and in order to facilitate the calculation of the ratios, it is noted that, as it is shown in Table 4.2, clinical training includes 12 hours in aquatic animal diseases, 6 hours in bee diseases, and 36 in the 5th semester, as the latter is work performed “on normal animals in a clinical environment, on organs... or propaedeutical hands-on work on organ systems on cadavers to practice clinical techniques” (paragraph 4.1.1.2.2 above). It must also be noted that 24 hours of the training in the final year is not considered clinical training, as students, for 12 hours in each of the 9th and 10th semester, are trained in the necropsy room.

Activities and case responsibilities of students in the Companion Animal Clinic

During semesters 6 to 8, students are helping senior students in receiving, examining cases, performing diagnostics, taking blood samples, assisting in surgeries and anaesthesia, as well as in radiography. They also attend seminars and participate in rounds organized by the different services outside the normal curricular hours.

Ninth and tenth semesters are almost exclusively dedicated to clinical training. Students are responsible for receiving, taking history and performing clinical examination along with postgraduate students and staff. They take blood samples from the patients and perform ancillary examinations. During their diagnostic imaging rotation students assist in radiographic positioning of the patients, help in radiographic evaluation, attend ultrasound examinations and participate in report

Table 4.5a Clinical rotations in companion animals 2010-2011

Subgroup		A1I	A1II	A2I	A2II	A3I	A3II
Week 1	Monday	Small Animal Med.		Small Animal Surgery		Anaesth.	Equines
	Tuesday						Radiology
	Wednesday						Opth+Exot
	Thursday						Radiology
	Friday						Equines
Week 2	Monday	Small Animal Med.		Small Animal Surgery		Anaesth.	Equines
	Tuesday						Radiology
	Wednesday						Opth+Exot
	Thursday						Radiology
	Friday						Equines
Week 3	Monday	Anaesth.	Radiology	Small Animal Med.		Small Animal Surgery	Equines
	Tuesday						Opth+Exot
	Wednesday						Radiology
	Thursday						Equines
	Friday						Equines
Week 4	Monday	Radiology	Anaesth.	Small Animal Med.		Small Animal Surgery	Equines
	Tuesday						Opth+Exot
	Wednesday						Radiology
	Thursday						Equines
Week 5	Monday	Small Animal Surgery		Anaesth.	Opth+Exot	Small Animal Med.	Equines
	Tuesday						Radiology
	Wednesday						Equines
Week 6	Monday	Small Animal Surgery		Anaesth.	Radiology	Small Animal Med.	Equines
	Tuesday						Opth+Exot
	Wednesday						Radiology
	Thursday						Equines
Week 7	Monday	Small Animal Surgery		Anaesth.	Radiology	Small Animal Med.	Equines
	Tuesday						Opth+Exot
	Wednesday						Radiology
	Thursday						Equines

Each subgroup consists approx. of 6-7 students

As an exception, this year's subgroups consist of 12 students on average

Table 4.5b Clinical rotations in production animals 2010-2011

Day	1	2	3	4	5	6	7
M	N	Avian 9-11	Farm rabbits	fetotomy	c-section	Avian 11-13	Kolchiko
Tue	N	Avian 9-11	Farm small rums	Farm repro	Farm small rums	Avian 11-13	Kolchiko
Wed	N	Avian 9-11	Farm avian	Farm swine	Farm swine	Avian 11-13	Kolchiko
Thu	N	Avian 9-11	Farm repro	Farm Bovine	Farm Bovine	Avian 11-13	Kolchiko
Fri	N	Avian 9-11	Kolchiko	Kolchiko	Kolchiko	Avian 11-13	Kolchiko
M	Kolchiko	N	Avian 9-11	Farm rabbits	fetotomy	c-section	Avian 11-13
Tue	Kolchiko	N	Avian 9-11	Farm small rums	Farm repro	Farm small rums	Avian 11-13
Wed	Kolchiko	N	Avian 9-11	Farm avian	Farm swine	Farm swine	Avian 11-13
Thu	Kolchiko	N	Avian 9-11	Farm repro	Farm Bovine	Farm Bovine	Avian 11-13
Fri	Kolchiko	N	Avian 9-11	Kolchiko	Kolchiko	Kolchiko	Avian 11-13
M	Avian 11-13	Kolchiko	N	Avian 9-11	Farm rabbits	fetotomy	c-section
Tue	Avian 11-13	Kolchiko	N	Avian 9-11	Farm small rums	Farm repro	Farm small rums
Wed	Avian 11-13	Kolchiko	N	Avian 9-11	Farm avian	Farm swine	Farm swine
Thu	Avian 11-13	Kolchiko	N	Avian 9-11	Farm repro	Farm Bovine	Farm Bovine
Fri	Avian 11-13	Kolchiko	N	Avian 9-11	Farm Bovine	Farm repro	Farm small rums
M	c-section	Avian 11-13	Kolchiko	N	Avian 9-11	Farm rabbits	fetotomy
Tue	Farm small rums	Avian 11-13	Kolchiko	N	Avian 9-11	Farm small rums	Farm repro
Wed	Farm swine	Avian 11-13	Kolchiko	N	Avian 9-11	Farm avian	Farm swine
Thu	Farm Bovine	Avian 11-13	Kolchiko	N	Avian 9-11	Farm repro	Farm Bovine
M	fetotomy	c-section	Avian 11-13	Kolchiko	N	Avian 9-11	Farm rabbits
Tue	Farm repro	Farm small rums	Avian 11-13	Kolchiko	N	Avian 9-11	Farm small rums
Wed	Farm swine	Farm swine	Avian 11-13	Kolchiko	N	Avian 9-11	Farm avian
Thu	Farm Bovine	Farm Bovine	Avian 11-13	Kolchiko	N	Avian 9-11	Farm repro
M	Farm rabbits	fetotomy	c-section	Avian 11-13	Kolchiko	N	Avian 9-11
Tue	Farm small rums	Farm repro	Farm small rums	Avian 11-13	Kolchiko	N	Avian 9-11
Wed	Farm avian	Farm swine	Farm swine	Avian 11-13	Kolchiko	N	Avian 9-11
Thu	Farm repro	Farm Bovine	Farm Bovine	Avian 11-13	Kolchiko	N	Avian 9-11
M	Avian 9-11	Farm rabbits	fetotomy	c-section	Avian 11-13	Kolchiko	N
Tue	Avian 9-11	Farm small rums	Farm repro	Farm small rums	Avian 11-13	Kolchiko	N
Wed	Avian 9-11	Farm avian	Farm swine	Farm swine	Avian 11-13	Kolchiko	N
Thu	Avian 9-11	Farm repro	Farm Bovine	Farm Bovine	Avian 11-13	Kolchiko	N

N= necropsy, Kolchiko=Production Animal Clinic, Farm (small rums, repro, Bovine etc)=farm visit (for small ruminants, reproduction, bovine etc)

writing. Administration of anaesthesia and peri-operative monitoring of the patients is performed by one student along with an anaesthesia resident or postgraduate student. Students also assist with diagnostic procedures and clinical pathology service examinations. Finally, they discuss differential diagnosis and treatment with the responsible postgraduate student and Faculty member. Students also assist in surgeries performed by the residents and staff, propose the anaesthesia protocol, do anaesthesia induction and monitoring of the patient, perform cat spays and neuters alone (under supervision), and assist in bitch spays and castrations. Students are responsible for their cases from receiving to the operating theatre and follow the patients to the wards until discharge.

Sometimes, during afternoons, following the obligatory intracurricular clinical training, students participate in everyday rounds depending on the service, and weekly grand rounds of the different services, where they present cases. They are also attending seminars presented by postgraduate students. Some of these students are also preparing small review articles as part of the self-directed learning or conducting presentations in various clinical topics.

The group of students trained in small animal medicine is divided into smaller subgroups, each working independently, assisted by postgraduate students and supervised by academic staff members. Each day, students actively participate in the examination of all first- or re-admitted cases, as well as the hospitalised animals. After the clinical workup of the cases is complete, each case is discussed with a group of students by one of the attending staff members.

With regards to **equines**, students begin their hands-on training during the 6th semester. During the 6th, 7th and 8th semesters, students are expected to take a complete history, fill out the proper documents, carry out a full basic clinical examination and generally to familiarize themselves with the animals and learn to follow a case down to a narrow differential diagnosis. During the 9th and 10th semesters, students are encouraged to become involved in all aspects of a case, namely all the steps mentioned above, but also to perform ancillary testing, discuss diagnosis and treatment options, apply the treatment and assist in surgical operations. Training in equines takes place either in the Clinic or in riding stables. Within the rotation system, the equine subgroup consisting of 7-8 students (12 this year) visit riding stables supervised by the equine clinician. In total, each student receives clinical training for 5 days.

Activities and case responsibilities of students in the Production Animal Clinic

During the 6th semester, students are trained in history taking, filling in the species-specific examination cards, performing clinical examination and ancillary testing, performing clinical examination of genital tract and udder and performing rectal

palpations. The Clinic rents in total 10-20 cows per year, and keeps them at the premises of Kolchiko. These animals are used for teaching basic clinical examination procedures to students (e.g. rectal palpation, clinical examination etc.), and then they are returned to the owners (livestock dealers).

During the 8th semester, students are trained in taking history and performing clinical examination of admitted cases, performing ancillary testing, discussing differential diagnosis and treatment options, and applying the treatment, performing lung lesion scoring in swine, assisting in surgeries such as exploratory laparotomy in cattle, coenurosis in sheep, displaced abomasum in cattle, hernias, amputations, castration etc. They are also trained in laboratory techniques and performing gross pathology for the diagnosis of avian diseases, in performing clinical examination of the genital tract and rectal palpations, in performing udder suturing (in udders from slaughterhouses), in assisting in caesarean sections, dystocias, fetotomies and udder operations (on incoming cases of ruminants).

During semesters 9 and 10, clinical training includes both visits to farms (APPENDIX II, pp 199-201) and in-clinic training in the Clinic at Kolchiko. During their participation in this rotation, students take history from the farmer, perform clinical examination (including rectal palpations, examination of genital tract and udder), perform ancillary testing, discuss differential diagnosis and treatment protocols, apply the treatment and participate in prevention strategy discussion with the farmer, assist in surgeries, perform claw trimming in cattle, caesarean sections in sheep, fetotomy and laparotomy in cattle, that are performed in the Clinic and/or in the farms visited. They also assist in herd investigations for ketosis, SARA, mastitis, lameness, failure of passive transfer of immunity in neonatal calves, diarrhoeas, respiratory disease, low fertility indices, low production, increased morbidity and mortality etc and participate in performing reproductive management.

Clinical training in which students are involved prior to the commencement of clinical rotations:

Prior to the commencement of clinical rotations, during the 5th semester, all students are trained under the supervision of teaching staff on methods of clinical examination and diagnosis for companion animals, production animals and equines. Details are included in the Curriculum Guidebook (APPENDIX I pp 80-84). The students are divided into 12 small groups (approximately 7-8 students per group, about 12 this year) with the purpose of gaining as much practical experience as possible. The duration of this practical training for each student is 36 h.

An additional practical training of 4 h for each student on surgical instruments and sutures patterns aims at preparing students prior to commencement of clinical rotations.

Twenty four hour Emergency service and hospitalisation activities of the clinics

Out-of-hours duties and care of hospitalized animals, as well as providing assistance in emergency cases receiving and management is an important part of clinical training.

In **Companion Animal Clinic**, the wards for hospitalized animals are fully operational 24h per day, 7 days a week, for 48 weeks per year. Out-of-hours emergency services are offered to second-opinion cases only. For each unit of the Clinic (Surgery and Internal Medicine), after-hours service is offered by a group of 2-3 postgraduate students or interns, while a member of the academic staff is on call. In Surgery, two members of staff are on call, one surgeon and one anaesthesiologist. The Unit of Anaesthesiology and Intensive Care is responsible for the intensive care, and thus one of its members is on call, whenever an animal needs emergency treatment in the ICU. In addition, needs for emergency care or hospitalization of wildlife and exotics are covered by a specialized member of the academic staff, a postgraduate student and a group of undergraduate students, and if necessary, support for emergency and/or critical cases is also provided by members of the Unit of Anaesthesiology and Intensive Care.

In the small animal emergency service students take the history, perform clinical examination and diagnostic procedures, discuss with residents and post-graduates the differential diagnosis and the diagnostic plan, and assist in the management of their cases under the supervision of members of the academic staff.

During their stay in the intensive care unit, students participate and assist in the diagnosis, management and monitoring of critical care and emergency patients.

Undergraduate students are obligated to participate in the out-of-hours services (following a rotation schedule) in groups of 4 for each unit (Surgery & Medicine), two students (of the 10th semester) for 24 hours and the other two (of the 8th semester) until 22.00 h. In semester 9, only two students are on duty for 24 hours in each unit. During the 4-week holiday period, the Clinic is closed for the public. However, occasionally, second-opinion cases that cannot be managed in private clinics may be accepted.

The **Production Animal Clinic** is also operational 24h per day, 7 days a week for emergency and hospitalisation services. Service is offered by one postgraduate student or intern and a team of four 5th year students, while a member of the academic staff is on call.

In total, each student is on duty for about 12-13 days (approx. 200 hours) in companion animals, and 5 days (approx. 100 hours) in production animals.

During their after-hours duty, students carry out clinical examinations of all hospitalized animals every 3 hours, unless instructed otherwise. They also help in the administration

of all medications, participate and perform wound care and bandage changes, place and care for iv catheters, take blood and urine samples for haematology, serum biochemistry and urinalysis, update the medical records, and familiarise themselves with e-Vet, and assist in the administration of treatment to patients.

4.1.4 OBLIGATORY EXTRAMURAL WORK

Table 4.5: **Obligatory extramural work that students must undertake as part of their course**

Nature of work	Minimum period		Maximum period		Year in which work is carried out
	hours	% of total study time	hours	% of total study time	
Animal Science	120	1.47			2 nd year
Production Animal, Equine or Small Animal Practice	120	1.47			3 rd year
Food Science	120	1.47			4 th year

Education outside the FVMT is provided in carefully selected practices, farms and food processing establishments. Extramural work takes place during summer vacations and it lasts, in total, three months (12 weeks). The first month during the summer between 4th and 5th semester aims at gaining additional experience in care and husbandry of animals (farm and companion) and in animal management systems. The second month of extramural studies takes place between 6th and 7th semester and provides clinical experience by visiting farms and companion animal practices. The third month takes place between the 8th and 9th semester and leads to additional experience in veterinary inspection in slaughterhouses and industries of processing food of animal origin.

Training is certified by a reference letter from the director of the visited institution or practice and the student's "work logbook", which is not marked. However, its successful completion (confirmed by the student's supervisor) constitutes a prerequisite for the continuation of the student's studies on the respective subject.

4.1.5 SPECIFIC INFORMATION ON THE PRACTICAL TRAINING IN FOOD HYGIENE

Practical training in food hygiene/public health, is organised in facilities outside the FVMT, e.g. slaughterhouses, markets, factories/processing units etc., based on long-established agreements with the Department of Food Hygiene and Technology. The training provides experience to all students in a variety of topics in inspection, processing and distribution of foods of animal origin. Training visits to dairy

industries, meat-processing units, fish-processing units, companies producing frozen foods and frozen ready to eat meals, and slaughterhouses are organized for the students of the 5th, 6th, 7th, and 8th semester.

The slaughterhouses for cattle, sheep and pigs, where students receive training during the 7th and 8th semester, are situated at Lagada (Tachmazidi Bros), a small city situated on the way from Thessaloniki to Kolchiko, and at Chalastra (Farma Chalastras S.A.), whereas the poultry slaughterhouse used for training students is situated at Neochorouda (P. Saramourtsis and sons S.A.), about 30, 25 and 20 km, respectively, from Thessaloniki. Other slaughterhouses that are visited mainly by the students attending relevant elective courses are: i) Eurofood S.A. Nea Chalkidona, ii) Sfageiotechniki Kryas Vrissis S.A. and iii) Zlatis Edessa, about 36, 65, and 90 km from Thessaloniki, respectively. Laboratory practical training of students on HACCP system takes place in modules 7I (2 hrs) και 7II (6 hrs). Additional practical training (9 hrs in total) is offered in two elective courses (3 hrs in the Laboratory and 6 hrs in training visits in slaughterhouse, meat processing unit and catering facilities).

Students participating in slaughterhouse training are divided into groups of 8-10 and are trained under the supervision of a member of staff of the laboratory of Food Hygiene. The duration of each slaughterhouse visit is 3 hours. This practical training, necessary for the qualification of the undergraduate students in meat inspection, requires two semesters to be completed. During this period, each student receives a total of 36 hours (12 visits) of practical training in slaughterhouse facilities.

As already mentioned above, students may decide to take all or most of their electives in Food Hygiene and Public Health. In such a case, the number of hours of training in the subject, and especially that of practical training, is significantly increased.

4.1.6 RATIOS

4.1.6.1 GENERAL INDICATORS TYPES OF TRAINING

	Theoretical training (A+B+C)	5445	Denominator
R6:	_____	= ----- = 1/0.30	0.30
	Supervised practical training (D+E+F)	1630	
R7:	Clinical Work (F)	790.5	
	_____	=----- = 1/1.06	1.06
	Laboratory and desk based work + non-clinical animal work (D +E)	839.5	

$$\begin{array}{rcl}
 & \text{Self directed learning (C)} & 3.977 \\
 \text{R8: } & \frac{\text{-----}}{\text{Teaching load}} & = \frac{\text{-----}}{8,160} = 1/2.05 \quad \mathbf{2.05} \\
 & \text{(A+B+C+D+E+F+G)} &
 \end{array}$$

4.1.6.2 SPECIAL INDICATORS OF TRAINING IN FOOD HYGIENE/PUBLIC HEALTH

$$\begin{array}{rcl}
 & \text{Total no. curriculum hours} & \\
 & \text{Food Hygiene/Public Health} & \\
 & & 211 \\
 \text{R9: } & \frac{\text{-----}}{\text{Total no. hours vet. Curriculum}} & = \frac{\text{-----}}{3059} = 1/14.50 \quad \mathbf{14.50}
 \end{array}$$

$$\begin{array}{rcl}
 & \text{Total no. curriculum hours} & \\
 & \text{Food Hygiene/Public Health} & \\
 & & 211 \\
 \text{R10: } & \frac{\text{-----}}{\text{Hours obligatory extramural work}} & = \frac{\text{-----}}{120} = 1/0.57 \quad \mathbf{0.57} \\
 & \text{In veterinary inspection} &
 \end{array}$$

4.2 COMMENTS

The present curriculum prepares the graduate for the various parts of the veterinary profession. Acquisition of “day-one” competences is achieved by providing relevant scientific knowledge, skills and clinical experience and by incorporating an assessment process that indicates whether the targets have been met. Furthermore, there is provision for participation of a veterinary surgeon (representative of the Hellenic Veterinary Association) in the Committee of Strategic Planning that may drastically influence the curriculum, by reflecting simultaneously the needs of the profession in our country and of society.

In the curriculum, emphasis is given to practical and more importantly to clinical training, as indicated by the fact that the ratio of clinical work to lectures and non-clinical practical work is 1/2.92, that would be further improved for students who choose all electives on clinical subjects. Moreover, the time allocated to training in clinical sciences (theoretical and practical training), as described in Annex Ia, accounts for the 52.61% (1630/3098, Tables 4.2 and 4.4) of the entire core curriculum, while if only the intracurricular hours are taken into account, the ratio R6 becomes 1468/1630, and the denominator 1.11. Clinical training is also further enhanced by the fact that each student participates in the out-of-hours services for about 300 hours.

An advantage of the curriculum is that it allows changes according to the national requirements and harmonisation with the EU directives, thus, offering great flexibility.

With regard to the Bologna Declaration, the FVMT strives to fulfill the objectives targeted at improving the quality and increasing the transparency of awarded degrees and at promoting international mobility. It also has adopted a credit allocation and accumulation system, similar to the European Credit Transfer System (ECTS). However, it does not consider necessary to implement the provision concerning the proposed two-tier degree structure. We believe that a program of undergraduate studies leading to an MSc degree which is now granted following graduation, may be applicable to other disciplines, in which 2-3 years of studies may lead to Bachelor Degree and qualify for a job, but not to Veterinary Medicine. Following a two-year study cycle, leading to a Bachelor degree, a graduate may have some good theoretical knowledge, but would not possess the skills and practical competences necessary even to a veterinary technician. Therefore, we strongly believe that the production of such first cycle graduates would not be for the benefit of the veterinary profession in our country.

Concerning curriculum development initiatives, the Education Committee has already initiated an extensive study of the current curriculum including the content of each course and the composition of each section, the volume of theoretical training, the way examinations are administered (see Chapter 5) etc. As soon as an adequate amount of data is gathered it will be possible to evaluate the effectiveness of the current curriculum and possibly propose changes.

No local conditions or circumstances might influence the ratios in 4.1.6 in the near future.

4.3 SUGGESTIONS

The need for a core course content analysis should be considered, as students are complaining that there is a content overload in the curriculum, i.e. too much content within a given time, and also too much preparation time is needed to pass the various sections, and especially certain courses (see also comments in chapter 5).

Full integration between animal production and clinical sciences and a decrease of theoretical training would allow the 4th year of the curriculum to include more practical-clinical training. However, major changes of the curriculum should wait until the results of its thorough evaluation by the Education Committee are assessed.

Chapter 5: TEACHING: QUALITY AND EVALUATION

5.1 FACTUAL INFORMATION

5.1.1: THE TEACHING PROGRAMME

The academic teaching staff is solely responsible for the pedagogical approaches used, within, however, the framework of the curriculum established by the FVMT. Furthermore, the Education Committee and ultimately the General Assembly (GA) of the FVMT is responsible for ensuring that a successful **coordination of teaching** is achieved within and between the different Departments. A senior teacher of each course has the responsibility to coordinate the teaching and examinations of the course. Since courses comprise parts of sections and the latter part(s) of modules, a module coordinator cooperates with faculty members responsible for each course and if needed with the Head of the Department, to control curriculum affairs e.g. student group scheduling, student rotation in different units, collection of examination marks and so on. Issues that cannot be solved by coordinators and/or Department Heads are referred to the Executive Committee of the Faculty or to the ultimate decision making body i.e. the General Assembly of the Faculty. The coordinator of each module is responsible for the implementation of the decisions of the GA.

The **pedagogical approach** for the majority of the modules includes the application of the traditional type of lecturing using modern audio-visual systems. Strictly speaking, "problem-based learning" is not used. However, some of the courses and especially the clinical (clinical training), food hygiene (meat inspection), epidemiology and special pathology (post-mortem examinations) courses, and to a much lesser extent basic sciences (e.g. Physiology) include the application of case-based teaching. The "Interactive Computer-Assisted Learning" is another pedagogical approach that has already been used by some members of the teaching staff. A novel information technology tool already at hand for use by the FVMT students (although not yet widely used) is "Online Coursepacks (Blackboard)". This enables instructors to provide students with course materials, discussion boards, etc, which are made available online. Students are instructed in the use of Blackboard during their early years of study and use it thereafter for learning purposes. At the moment, 74 veterinary topics are available through Blackboard. The AUTH central Library also provides Virtual Private Network (VPN) functionality that enables users to have access to all library resources through their PCs even when they are away from campus.

Within the context of the new Curriculum, "**integrated teaching**" has been implemented since 2003. Areas in which this integration is particularly strong concern the structure and function of both the normal and the diseased animal. Such areas include:

- The integrated teaching of molecular Biology, Histology, Anatomy, Physiology, Biochemistry and part of the General Pharmacology. Hence, the traditional subjects are no longer independent modules but are taught in a sequence that best describes the structure and function of the different systems of the animal.

- The integrated teaching of Pathology, Infectious and Parasitic diseases, and the rest of the clinical courses including Clinical Pharmacology - Toxicology.
- The integration of Animal Production, including Nutrition, with herd-health management, during the last year of studies, when students receive their clinical training in production animals.

As it was expected, the application of integrated teaching has resulted in an increase in collaboration among instructors in the different Departments. In addition, the new Curriculum resulted in a significant (15-20%) decrease of the theoretical teaching and an increase of the practical/clinical training. The final year is devoted to clinical training, and is, virtually, lecture free. Also, in order to inform the students and, at the same time, minimize overlapping, a short summary of each lecture is included in the FVMT Curriculum Guidebook (Appendix I).

It should be noted that according to the existing national legislation, textbooks are given to the students free of charge (one textbook for every course). Furthermore, **course notes** updated every year are used to a lesser extent (mainly in clinical subjects) to supplement or substitute standard textbooks. It is also noted that most students are proficient in foreign languages (mainly English), which allows them to use material from textbooks or other publications in English.

To support undergraduate teaching, training visits to farms, breeding centers, practitioners, State veterinary services, slaughterhouses, markets, factories/processing plants, etc. form part of student training. This is made possible through **long-standing agreements/contracts** between these bodies and the FVMT (for details see chapter 7). The number of farm animals, mainly cattle, admitted to the clinic is relatively small, due to reasons explained in chapter 7. Because of this, clinical training takes place mainly in farms, and mostly in the contracted ones, to which services are provided free of charge; this gives to students increased opportunities to gain hands-on experience. The three-month **extra-mural training** also takes place in carefully selected practices, farms and food processing establishments (see chapter 4).

One of the main aims of the curriculum has been to direct the educational effort from 'teaching' to 'learning'. The choices of teaching material within the courses are assuring that the objectives are met. Especially, in relation to the "Day One Skills" the aforementioned objectives are met, as is ensured by the teaching and examination system throughout the entire 5-year term of studies, and, additionally, to the substantial increase of clinical training implemented with the new curriculum.

It is through the examination process, focused especially, although not exclusively, on the "Day One Skills", that the **evidence of learning** is safeguarded. Through each course's examination (written and/or oral/practical) it is ascertained that students have acquired the knowledge that is described in the Day One Skills, and thus, ultimately, can graduate from the FVMT successfully.

5.1.2: THE TEACHING ENVIRONMENT

There is no system put in place in the FVMT to **reward teaching excellence**. However, teaching ability is assessed and rewarded accordingly during the evaluation procedures for election and/or promotion of the academic staff members. However, within the AUTH, awards for teaching excellence have been established rewarding exceptional teaching performance.

5.1.3: THE EXAMINATION SYSTEM

Assessment of performance is based on the final examination, written and/or oral, at the end of each semester. The examinations are designed to evaluate the students overall knowledge of the subjects taught during the preceding semester. The programme of the exams is announced at the beginning of each semester.

By law, University teachers have the right to use any form of examination they consider most appropriate. In general, examinations take place at the end of each semester and are usually written, especially in the preclinical subjects. Essay questions and short answer questions are the forms of examination that are mainly used, while multiple-choice questions are used in a limited number of courses. In many courses there are oral and/or practical exams, especially in clinical subjects and meat inspection, while some other courses hold small written tests at various intervals along the courses. In some clinical subjects, assessment of students is continuous throughout the term period.

There are three special examination periods during the year for examinations (of 3 weeks duration each), the winter period (January-February), the summer period (June) and the autumn period (September). There are no exams at the end of the 9th semester, however students may use the respective examination period to be examined on subjects in which they have failed in the previous two (3rd and 4th) years. Students may not be allowed to enroll in the 4th year unless they have successfully passed most of the courses of the first two years, modules 2, 5.1, and 5.2 in particular.

Students get a mark in each course and then the mean of the marks of the courses of a Section constitutes the mark of that Section, and if it is a pass mark (≥ 5) a student is considered to have successfully attended that Section. When a student has passed all Sections comprising a Module then it is considered that he/she has completed that Module. Only after completing all the Modules a student is considered that she/he has successfully completed all the core subjects of the curriculum. Optional extra credit of up to 2 points (20%) may be obtained in a course by preparing an essay report on a course-related subject, assigned by the course instructor. However, this extra credit cannot transform a non-passable examination mark to passable.

Marking utilises a scale of zero to 10 points: excellent from 8.5 to 10, very good from 6.5 to 8.4, good from 5 to 6.4, poor (4, 3 and 2), and bad (1 and 0). The passing mark for each examination is 5.

There is no use of external examiners in the Greek Universities. However, if a student fails three times in a subject, he/she may apply to be re-examined by a group of three examiners (including the initial examiner).

A student can **retake** the examination as many times as needed to obtain a passing mark in each course. Recently, the Ministry of Education has initiated discussions aiming at making radical reformations of the existing laws concerning the organisation and function of the Institutions of Higher Education in Greece, including this issue.

5.1.4: EVALUATION OF TEACHING AND LEARNING

The assessment of teaching methodology used by the members of staff and the subjects being taught is aided significantly by the use of a questionnaire filled in by the students, anonymously at the end of each semester course, but the teaching evaluation questionnaires have never been collected and examined centrally. However, some Faculties within the AUTH have already implemented it since the academic year 2009-2010, and, starting in 2011, the FVMT plans to implement this evaluation process electronically. The relevant software is at the final stages of testing. The questionnaires will be collected anonymously, evaluated and the results will be sent to the members of staff individually and to the respective sections' coordinators via the Dean.

Students are also involved in day-to-day monitoring of the quality of teaching through their representatives in the Faculty's General Assembly. If problems arise, either with respect to the educational infrastructure (e.g. classroom adequacy) or with respect to the teaching performance, students are entitled to voice their concerns and demand corrective actions. Students are also encouraged to discuss such issues with the Dean and/or the Head of the Department.

Moreover, student representatives participate in the procedures concerning the election or the promotion of the teaching staff, where they are expected to express their opinion on the teaching ability of the candidates. The formation of the students' opinion of candidates who already are members of the teaching staff is based on the courses the students have attended. On the other hand, the formation of their opinion of candidates who do not belong to the teaching staff is based on one lecture given by each candidate before the procedure of the election. The students and the members of the electorate need to attend the lecture in order to form and express their opinion for the teaching ability of the candidates.

There are no **external evaluators** in the teaching and learning process in the FVMT.

5.1.5: STUDENT WELFARE

Essential hygiene and safety practices and measures for undergraduate students include education and training for health and safety, provided in every clinic and laboratory of the FVMT, so that students know of and understand the potential risks associated with the handling of potentially hazardous substances (biological or chemical), and the importance of consistent use of personal protection equipment. For hand hygiene convenient washing facilities are available at all the premises of clinics and laboratories of FVMT. Special precautions taken to prevent injuries, as well as management operations concerning disposal of wastes (see chapter 6.1.8) and cleaning and disinfection, are practiced under the supervision of the members of staff. Special guidelines concerning these issues (Biosafety and Biosecurity Standard Operating Procedures [SOP]) are distributed to all students entering the FVMT, and are also available on the website (<http://www.vet.auth.gr/>). In addition, in compliance with the legislation on safety and hygiene at work, a program of response to injury and exposure to a hazardous substance has been established, that includes emergency preparedness and actions that must be taken when necessary. Protocols for the isolation of infected animals, including suspected infected animals have also been elaborated. Furthermore, in the AUTH a Civil Protection Office is operational which provides guidelines on actions to be taken in natural disasters (earthquakes, fires, floods etc.), technological accidents and proper labeling. It should also be noted that this Office organizes yearly training seminars to all personnel and students in general, and more specifically to those responsible for the management of such situations. Within this Office a special voluntary Team of Management of Disasters has been organised. Other Committees such as the Standing Committee for Epidemics Management and the Committee of Social Policy and Health also contribute to the AUTH policy on related to personnel and student welfare issues.

All FVMT students undertaking extramural practical work outside the premises of the Faculty are insured by the AUTH for injury, covering transportation, hospitalization and pharmaceutical care.

The state provides a set of administrative, financial and other services to students so as to facilitate their studies. These services include scholarships, catering and accommodation (for students with low family income), health care, counseling and psychological support, access to the Internet, lower fares for transportation etc. Additionally, the AUTH offers financial support to students who are in need. These needs may include a) financial help to students suffering from serious illnesses and who either hospitalised or in the recovery process, b) financial grant in case of unexpected needs to students who are facing major financial difficulties, even temporarily, due to family problems, which may put at risk the continuation of their students, and c) financial support in case of part time employment by the University.

The financial provisions also include free textbooks to all students, and access to university libraries, while administrative provisions are mainly related to a deferral of military service for male students due to studies.

Moreover, AUTH provides information and advice on undergraduate and postgraduate studies in Greece and abroad, and on career issues.

Examples of the existing facilities include:

- Students' Club of the AUTH
- Student Halls of Residence of the AUTH
- Foreign Student Hostels
- Sports and Recreation-University Sports Centre
- University Camping Facilities
- Student Counselling and Guidance Service
- Career Services Office of the AUTH
- Students' Association of the FVMT
- International Veterinary Students' Association – Hellas (I.V.S.A. – Hellas)
- Scholarships (from the State Scholarship Foundation, AUTH or other bodies)
- Cultural Groups

Details on services provided to students may be found in the AUTH's website:

http://www.auth.gr/students/services/index_en.html

Participation in the European Educational Programmes

The Educational Programmes Section of the University is responsible for the implementation of the SOCRATES Programme and other European Educational Programmes (TEMPUS, LINGUA, JEAN MONNET etc.). Approximately 4-5 students of the FVMT visit other Faculties abroad, while 5-6 students from other countries visit the FVMT every year.

5.2 COMMENTS

The curriculum guidebook of the FVMT lists the instructor responsible for delivering each teaching hour's content, for all courses (Appendix I). The Curriculum aims at conferring both the theoretical and the practical knowledge to the students so that the graduating veterinarian will be able to manage successfully the "Day One Skills" as these have been stated and agreed upon by the EAEVE.

In the FVMT there are various Committees that function successfully such as the Curriculum Committee, the Committee for Strategic Planning and the Research and Ethics Committee. There is considerable intra- and inter-Departmental co-ordination of teaching, although more can be done in this respect.

The FVMT has modern audio-visual and information technology facilities, which improve the quality of teaching and the delivery of information to students. Nevertheless, improvements in terms of equipment/facilities should be sought, for the benefit of both the students and the members of staff.

The pedagogical approach of the Faculty includes the application of modern methods of teaching. Clinical, food hygiene (meat inspection) and special pathology (post-mortem examinations) courses are utilizing "case-based teaching" methodology. "Interactive Computer-Assisted Learning" is another pedagogical tool that has also been used by some instructors.

Clinical training takes place in groups that are small enough to ensure hands-on experience for all students. For comments on this year's group size for students in the final year of studies see chapter 9, comment 3. In non-clinical practical/laboratory training groups consist of 20-30 students, however they are supervised by more than one staff members.

Extra-mural training and training visits to outside bodies to support undergraduate teaching should be considered adequate.

Students contribute to the design and to the quality assessment of courses and of the curriculum in general, through their participation in the Education Committee and the General Assembly of the Faculty, as well as with the completion of the questionnaires for the evaluation of courses and teaching staff.

Integrated teaching approaches, already implemented for several subjects within the FVMT, could possibly be further expanded to integrate pre-clinical and clinical courses.

Some faculty members disagree with the current marking scheme. As already mentioned, every module consists of 1-4 sections. Each section may include one or more courses and is examined in one comprehensive examination. The final mark awarded for each section is the average of the marks obtained for each of its courses. It would be possible, therefore, for a student to get a no-pass mark on an individual course but to pass the entire section (containing this course) since he/she gained higher marks in the other courses of the same section. Despite the fact that within a section teaching of its various courses is fully integrated, there are members of the academic staff who insist that students should be examined separately and obtain a pass mark (≥ 5) in each course.

5.3 SUGGESTIONS

Evaluation of teaching by the students should become compulsory for all courses. Excellence in teaching should be acknowledged and rewarded.

Generalization of integrated teaching is desirable.

In order to avoid un-necessary disputes among faculty members, a clear understanding of the situation of the marking scheme needs to be sought. Examination results of the different modules and sections of the present curriculum should be properly evaluated and

compared to those of the old curriculum. Furthermore, the composition of each section may also need to be re-evaluated. Finally, relevant decisions should be made after a comprehensive evaluation of the system specifics and performance has been made.

“Training of trainers” programmes need to be organised by the University on a more regular basis and with an increased scope. Incentives for faculty members to participate in these programmes may need to be established.

Chapter 6: FACILITIES AND EQUIPMENT

6.1 FACTUAL INFORMATION

The FVMT began its operation in 1950 and was initially situated in the area where the Clinical Department is now located. The original on-campus building was built during the early sixties, while the Clinical Department began its operation in the early seventies. During early 2001 the on-campus building was significantly expanded. The premises at Kolchiko had been founded a little earlier, but operation of the two main premises (Production Animal Clinic and Dairy Sheep Farm) started in 2009.

6.1.1 PREMISES IN GENERAL

The physical facilities of the FVMT comprise approximately 30,400 square meters of building surface area (coverage on land about 14,000 m²) and about 220 hectares of land. The building area includes 14,300 m² which are occupied by the Departments (offices, libraries, laboratories or clinics, hospitalisation places, etc.), 7,000 m² which are communal areas (lecture halls, teaching rooms, central administration services, etc.), 4,800 m² of basements (storage areas, rooms for rearing animals for teaching purposes, etc.) and 4,300 m² of buildings in the farm at Kolchiko village.

The Faculty occupies the following sites and buildings (APPENDIX V pp 230-232)

- The main buildings at the Aristotle University Campus
- The buildings of Clinics in Thessaloniki
- The premises at Kolchiko
- The premises at Pydna

THE MAIN BUILDINGS

The main buildings of FVMT (APPENDIX V.1A, p 231) were constructed some 50 years ago, and are situated within an area of 1.3 hectares at the Aristotle University Campus, close to the city centre of Thessaloniki. Their total building surface area is about 11,500 m², of which 6,700 m² are occupied by the four Departments (see below), 3,000 m² are communal areas and 1,800 are basements.

A new wing attached to the main building was opened in 2001, with a total building surface area of about 3,200 m². Apart from some Laboratories, it houses the FVMT Secretariat, the Library, a Lecture Hall, two classrooms for group work, office space for the student union etc.).

THE BUILDINGS OF THE CLINICS

The buildings of the Clinics are situated in an area of 1.8 hectares, close to the Railway Station of Thessaloniki, about 4 km to the west of the University Campus. The total building surface area is approximately 11,400 m². These buildings were constructed about 40 years ago and have been operational since 1972. Some parts (e.g. the necropsy room) were built later, while the stables are much older, operating since the early 1950s. The following

buildings comprise the FVMT Clinics: a) the main three-storey building, which is mostly used by the Clinic of Companion Animals and, partly, by the Production Animal Clinic and the Diagnostic Laboratory, b) the Laboratory of Pathology (Necropsy Room), c) the Diagnostic Imaging building, and d) the three old stables (APPENDIX V p 230).

THE PREMISES AT KOLCHIKO

The Kolchiko site is situated approximately 35 km north-east of the Thessaloniki city centre and comprises about 200 hectares of land, of which only 55 are suitable for use. It houses the following buildings:

1. The Production Animal Clinic
2. A dairy sheep farm
3. A building for goats farming
4. Supporting rooms and areas
5. Isolation area for small ruminants

The **building of the Production Animal Clinic** (APPENDIX V p 233) has a 2,500 m² surface area. It houses the clinical facilities for ruminants, office space for the academic staff, a small diagnostic laboratory, a small lecture hall (25 places), and two large animal isolation rooms accessed from a separate door outside the building. It also houses two independent furnished apartments, one for the needs of the academic staff, PhD students and residents, and the other for the students who have to stay overnight, when being on duty.

The **dairy sheep farm building** (APPENDIX V p 233) (capacity of at least 1,000 sheep) encompasses an area of 2,171 m². The building houses the main barn and animal handling facilities. It is divided into two main halls (approx. 1,000 m², each). One of them is used to house lactating sheep and the other is used for keeping rams, dry sheep and yearlings. The area between the two halls is occupied by an automated milking parlor (capacity of 24 ewes) of cutting-edge technology, which allows electronic recording of daily milk production for each ewe; there are also warehouses, offices for academic staff, and a room used to store supplies.

The **goats farming building** (capacity of 250 goats) comprises an area of 900 m² and its design is similar to that of the dairy sheep building. This building is currently not operational.

Next to the building for sheep farming there is a penthouse used for storing forages, and a construction made of concrete, which is used to prepare silage.

Among the Kolchiko premises there exists an autonomous building (140 m²), which serves as an **isolation room** for small ruminants.

THE PREMISES AT PYDNA

The Laboratory of Ichthyology expands its facilities on a 4.032 m² area by the sea, in the middle of the main Greek shellfish production area in Pydna, Pieria (APPENDIX V p 232). After a long period of efforts to obtain all necessary licenses and complete the concession of the

land, now the basic facilities are under construction and, by the end of this year, this lab will essentially be operational for the education of the students and research. Once these laboratory facilities are established, the students will practice on many issues of fish and shellfish culture.

6.1.2: PREMISES USED FOR CLINICS AND HOSPITALISATION

Table 6.1: Places available for hospitalisation and animals to be accommodated

Regular hospitalisation	Species	No. places
	Cattle (adult /calves)	$10^a + 20^b / 15^a + 10^b$
	Horses	10
	Small ruminants	$20^a + 10^b$
	Pigs	2
	Dogs	38
	Cats	9
	Other (exotics) ^d	17
Isolation facilities	Farm animals and Horses	33
	Small animals	7
	Other	

^a Places in the Production Animal Clinic at Kolchiko

^b Places in the premises of the Production Animal Clinic in Thessaloniki.

^d Exotic animal hospitalisation area, which has the capacity of housing the following animals: terraria (4 places), small rodents (2 places), rabbits and hares (2 places), terrestrial and aquatic turtles (2 places), aquarium, ICU (1 place) and other (5 places).

6.1.3 PREMISES FOR ANIMALS

- In the basement of the main building there are six rooms for keeping 10 sheep, 50 guinea pigs, 2 horses, 40 rabbits and 30 frogs for teaching purposes. There is also a room used for teaching and/or research on Ichthyology, with a preparation room and fish rearing facilities.
- Moreover, the following facilities are also used for teaching purposes, after the necessary agreements with the owners:
- The premises of the farm of the Institute of Reproduction at Ionia, Thessaloniki, approx 7 km from the city, which belongs to the National Agricultural Research Foundation (N.AG.RE.F.). This farm comprises stables for 41 bulls, 13 cows, 6 horses, 100 rams, 60 male goats, 20 boars, and 500 dairy ewes. The Institute comprises laboratories for semen processing and cryopreservation, semen biochemical analyses, hormonal analyses, embryo manipulation and transfer, as well as for cytogenetics.
- The premises of the farm in the American Farm School at Pylea, Thessaloniki, some 10 km away from the centre of the city. The farm houses premises for poultry (one

hatchery for 100,000 eggs, 21,500 layers, 20,000 turkeys, and 3,800 broilers), pigs (one building for rearing 12 sows and their off-springs (up to slaughter age), and cattle (stables for 130 cows, lodgements for 130 cows, stables for 190 calves, lodgements for 50 female calves, lodgements for 60 dry-cows, and one lodgement with eight parturition places, one milking area and one milk processing unit).

- The premises of the farm in the Agricultural Institute of Giannitsa, about 40 km away from Thessaloniki, which is also a unit of N.AG.RE.F. The farm comprises stables for 100 cows, 20 new born calves, and 2,000 sheep.
- The farm at Kolchiko (see description above).

• 6.1.4 PREMISES USED FOR THEORETICAL, PRACTICAL AND SUPERVISED TEACHING

Table 6.2: Premises for clinical work and student training

Small animals	no. consulting rooms	13
	no. surgical suites	5 + one room for endoscopies, one for otoscopies, and one for “septic surgery”.
Equine and food animals*	no. examination areas	5 (2 cattle, 1 equine, 2 small ruminants)
	no. surgical suites	6 (4 cattle, 1 equine, and 1 for small ruminants with 4 surgical tables)
other	no. pre-surgical preparation rooms	1 (3 tables)
	no. intensive care units	1
	no. examination rooms (exotics)	1

* Include premises in the Clinics in both Thessaloniki and Kolchiko

Table 6.3: Premises for lecturing

Hall	Places
<i>In the main building of the FVMT</i>	
Central Hall E. Tsiroyiannis	228
Central Hall T. Christodoulou	178
Central Hall S. Michail	99
Lecture Room N. Aspiotis	98
Lecture Room A. Panetsos	60
Lecture Room A	97
Lecture Room Animal Husbandry*	24
Lecture Room B*	25
Lecture Room E	96
<i>In the premises of the Clinics in Thessaloniki</i>	
Lecture Hall A. Spais	113
Lecture Hall K. Vlachos	106
Lecture Hall I. Vikelidis	98
Lecture Room at Kolchiko*	25

* These rooms may also be used for group work

Table 6.4: **Premises for group work**

Room	Places
1. Companion Animal Room A	24
2. Companion Animal Room B	24
3. Companion Animal Room C	24
4. Reading Room Medicine	10
5. Reading Room Surgery	10
6. Reading Room Obstetrics	16
7. Necropsy Room	10
8. Reading Room Anatomy I	15
9. Reading Room Anatomy II	15
10. Reading Room Physiology-Pharmacology	20
11. Physiology-Pharmacology Room	30
12. Pathology Room	10
13. Parasitology Room	10
14. Reading Room Food Hygiene	14
15. Reading Room Animal Husbandry	10
16. Nutrition Room	10
17. PC Room A Main Building	24
18. PC Room Epidemiology & Economics	12
19. PC Room B Clinics	9

Table 6.5: **Premises for practical work**

Laboratory	Places
1. Physiology-Pharmacology	30
2. Biochemistry-Toxicology	32
3. Anatomy (room with samples, models etc. for student self-training)	20
4. Histology	30
5. Anatomy (4 dissection rooms x 25 places)	100
6. Animal Nutrition	32
7. Animal Husbandry	30
8. Sensory Analysis Room	12
9. Microbiology	28
10. Parasitology	36
11. Pathology	60
12. Food Hygiene	24
13. Food Technology	25
14. Milk Hygiene and Technology	30
15. Ichthyology	20
16. Necropsy Hall	36

17. Diagnostic Laboratory	18
18. Training Room Surgery (4 tables x 5 places)	20
19. Poultry Medicine	10
20. Artificial Insemination	28
21. Production Animal Clinic	12
22. Production Animas Clinic *	16

Laboratories 1-15 are in the main buildings, 16-21 in the Clinics and 22 in Kolchiko

Some of these rooms may also be used for group work

*One operating room for cattle is also used for hoof trimming

For health and safety measures in the premises for practical work and in laboratories please see Chapter 5, paragraph 5.1.5

The Faculty also owns two 18-seat mini-buses “Fiat” IVECO, which are used for the **transportation of students to farms** for clinical training. Transportation of students to farms or other units for non-clinical training in animal production, food hygiene and technology, fish diseases, ecology and protection of the environment is accomplished using rented buses (with drivers), the rental expenses being paid by the University. In 2010, 165 bus exits were realised for this purpose.

6.1.5 DIAGNOSTIC LABORATORIES AND CLINICAL SUPPORT SERVICES

Diagnostic laboratories

There is a central Diagnostic Laboratory on the first floor of the Unit of Internal Medicine at the Department of Clinical Sciences. It covers the needs of both clinics (companion and production animals) and has an independent administration. This is a fully equipped laboratory with haematology, cytology and clinical chemistry analysers. It performs analyses for approximately 16,500 biochemical parameters and about 3,150 complete blood counts for about 1,800 cases yearly (clinical cases and research). It also performs analyses for customers outside the FVMT. Moreover, a small diagnostic laboratory has been established at the Production Animal Clinic in Kolchiko. This laboratory is equipped with one biochemical analyzer (VETSCAN vs2) and one haematological analyzer (VET ABC). Basic diagnostic tests can also be performed during the visits of the ambulatory clinic to the farms.

There are also two in-Clinic small diagnostic laboratories (internal medicine and dermatology), while the old rooms of the Laboratory of Obstetrics are now being modified into a modern unit for Biotechnology of Reproduction and Sperm Technology.

The Laboratories of Microbiology and Parasitology provide diagnostic services for microbiological and parasitological analyses, while Pathology also provides necropsy and biopsy services.

Samples for specific analyses (e.g. for hormones, enzymes, thyroid function tests etc.) are sent to other laboratories in Greece or abroad. For specific toxicological analyses the Veterinary Laboratories of the Ministry of Agriculture in Athens and Patras are used.

Central clinical support services

The laboratory of Diagnostic Imaging is housed in an independent building that is situated between the buildings of the Surgery and Internal Medicine Units of the Companion Animal Clinic. It is equipped with digital radiographic and ultrasound equipment for companion and production animals. A new modern ultrasound machine and a new spiral CT scan have been ordered, and, hopefully, will be installed in the Laboratory by the end of the year.

The dental examination and treatment room is also equipped with a new dental unit and a dental radiography system, including a dental digital imaging system.

The anaesthesia preparation, recovery, and critical care rooms are equipped with modern facilities for the administration of local and general (injectable and inhalational) anaesthesia, to both small and large animals. A wide range of modern monitoring equipment is also available.

Other diagnostic facilities include video-based endoscopic (gastrointestinal, respiratory and lower urinary tract), electromyographic and otoscopic equipment, as well as a retinograph. In addition, the ambulatory clinic offers some diagnostic work (e.g. ultrasound) in the farms, as well as for horses.

6.1.6 SLAUGHTERHOUSE FACILITIES

The practical training of undergraduate students takes place under the supervision of staff members in the following slaughterhouses: a) the Farma Chalastras S.A., about 25 km south-west of Thessaloniki with a total capacity of 6,451 cattle, 15,578 pigs and 16,605 small ruminants, annually, b) the Tachmazidi Bros (Lagada), 30 km north-east of Thessaloniki with a total capacity of 2,000 cattle, 7,500 pigs and 26,600 small ruminants and 450 ostriches, annually, and c) the Poultry slaughterhouse (P. Saramourtsis and sons S.A.), a modern facility comprising a poultry breeding unit, a slaughterhouse unit and a meat-processing unit. It is located in Neochorouda, approximately 20 km north-west of Thessaloniki. The capacity of the slaughterhouse is 1,900,000 broilers yearly, and produces a wide range of fresh and frozen poultry products.

Other slaughterhouses that are visited by the students following the relevant elective courses are: i) Eurofood S.A. Nea Chalkidona (3,000 tonnes/year, 30 km west of Thessaloniki), ii) Sfageiotechniki Kryas Vrissis S.A. (800 tonnes/year, 60 km west of Thessaloniki) and iii) Zlatis Edessa (2,000 tonnes/year, 60 km north-west of Thessaloniki).

6.1.7 FOODSTUFF PROCESSING UNITS

The Department of Food Hygiene and Technology of the FVMT has access to the following processing units, where the practical training of the undergraduate students takes place:

Dairy industries

The FVMT students visit two major milk industries, namely, Mevgal S.A. and EuroFeed Hellas S.A. which are situated approximately 50 km west of Thessaloniki. The former produces a

wide range of products (pasteurised milk, yogurts, different types of cheese, butter, milk cream, etc) and exports to many countries. The latter is a member of the VIVARTIA group of companies producing UHT milk, and sweetened and unsweetened condensed milk.

Food processing Units

The meat processing units that are visited by the students of the FVMT are: Edesma – Titan S.A., and Zlatis S.A. The seafood processing units are the North Aegean Sea Canneries S.A., and Apostolou frozen seafood S.A.

Also, the students visit the University Restaurant and the Food Market of Thessaloniki as well as a modern catering facility (Houtos catering).

6.1.8 WASTE MANAGEMENT

The central administration of AUTH has assigned the total management (collection and disposal) of waste and dangerous materials to a contracted specialised company (INTERGEO Environmental Technology Ltd). For this purpose, the waste materials are temporarily stored in six specially designed barrels (200 litres each), located in designated areas in the FVMT. The barrels are used for the storage of xylol, formaldehyde, liquids for x-ray development (although they are only rarely used for educational purposes), organic solvents (not halogens), other laboratory chemicals (waste from biochemical, haematological analyses etc.), and empty containers (chemical, pharmaceutical etc.).

According to the relevant legislation, special guidelines on the collection and disposal of dangerous chemical and biological materials are available to all laboratories and clinics.

6.1.9 FUTURE CHANGES

As mentioned above, the FVMT is in the process of ordering a 4 slice computer tomography scan unit combined with a modern ultrasound system, and a computer-assisted semen analyser. This equipment will, hopefully, be in operation in the Clinic of Companion Animals and in the Biotechnology Unit of the Production Animal Clinic, respectively, by the end of 2011.

Recent financial constraints made certain cuts necessary, thus expansion of the premises in Kolchiko and purchase of new or upgrading of the old laboratory, clinical and audiovisual equipment may have to be delayed.

6.2 COMMENTS

The available buildings are considered to be sufficient for serving the needs of teaching and training of undergraduate students. Since the previous evaluation, several improvements have been made, the most important of which are the operation of the Production Animal Clinic, the renovation of the Companion Animal Clinic, the merging of diagnostic laboratories, and the establishment of an Exotic Animal Unit.

The rate of equipment renewal is generally considered moderate. Occasionally, renewal rate has been high, through research program funding or by using part of the income from

clinical services. Thus, considerable part of the facilities and equipment is contemporary. Nevertheless, the majority of academic staff considers that the research equipment is only partly sufficient, while one out of four consider it completely sufficient. Evaluating the facilities and equipment for teaching purposes, the vast majority of the academic staff stated their partial or complete satisfaction.

The maintenance of buildings depends on the general policy of the AUTH. The University comprises 42 Schools and Faculties and the majority of the buildings are old. However, it should be noted that for the last 2-3 years the FVMT received great support from the University in order to renew its equipment, to operate the Production Animal Clinic and the dairy sheep Farm at Kolchiko, and to renovate the Companion Animal Clinic. Nevertheless, the old buildings of the Clinics and the old wings of the buildings in the University campus need better maintenance.

6.3 SUGGESTIONS

Although the current financial crisis may not leave room for optimism, the FVMT must intensify its efforts for obtaining a vehicle for sick animal transportation. This will contribute to the increase of the case load of farm animals, in particular cattle.

Although the facilities at Kolchiko are sufficient for the time being, a potential increase in case load will lead to an increased need for additional buildings for other species of production animals, and for rooms for educational purposes and for members of staff.

Transportation to Kolchiko is also an issue that needs to be satisfactorily addressed. At present, students have difficulties in accessing the Farm, especially during non working hours.

The Faculty should continue its efforts to find ways to finance further renewal of its educational and especially research equipment.

Chapter 7: ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

7.1 FACTUAL INFORMATION

7.1.1 ANATOMY

The following materials are used in practical anatomy training:

- Live animals: Students are trained in groups, on a cow and a dog at the clinical Department.
- Anatomical models: These are either prepared in the Laboratory of Anatomy of the FVMT or purchased. Anatomical features of the models are demonstrated by instructors, while the models are available for study in the Laboratory's museum throughout the year.
- Various organs and body parts (e.g. hind leg, head) are dissected and kept in formaline. They are demonstrated during training sessions by instructors and are available for study by the students upon request.
- Whole domestic animals (equines, ruminants, pigs, dogs, chicken) are dissected during training sessions. These animals are purchased through official animal dealers. After the completion of the dissections, the remains are collected and disposed of by a company licensed to handle such material.

Table 7.1: Material used in practical anatomical training per student

Dog	2010	2009
live animals ¹	0.05	0.05
cadavers ²	0.08	0.07
cadaver parts	limbs, brain, liver, lung, stomach, small intestine, heart	limbs brain, liver, lung, stomach, small intestine, heart
Specimen	0.05 (skeletons)	0.05 (skeletons)
disconnected skeletons (bones)	bones disconnected from 4 skeletons	bones disconnected from 4 skeletons
radiographs	skull, fore limb, hind limb, trunk	skull, fore limb, hind limb, trunk
anatomical models	animal models and models of various organs	animal models and models of various organs
computer assisted teaching	Novartis Animal Health	Novartis Animal Health

Ruminants	2010	2009
live animals ³	cow 0.05	cow 0.05
cadavers	sheep 0.29	sheep 0.29
cadaver parts	limbs, brain, liver, lung, stomach, small intestine, heart	limbs, brain, liver, lung, stomach, small intestine, heart
Specimen	0.10 (sheep skeletons) 0.03 (cow skeletons)	0.10 (sheep skeletons) 0.03 (cow skeletons)
skeletons (bones)	bones disconnected from 4 sheep and 4 cow skeletons	bones disconnected from 4 sheep and 4 cow skeletons
anatomical models	animal models and models of various organs	animal models and models of various organs
computer assisted teaching		

Equine	2010	2009
live animals		
Cadavers ⁴	0.05	0.05
cadaver parts	limbs, hind brain, liver, lung, stomach, small intestine, heart	limbs, hind brain, liver, lung, stomach, small intestine, heart
specimen	0.03 (skeletons)	0.03 (skeletons)
disconnected skeletons (bones)	Bones disconnected from 4 skeletons	Bones disconnected from 4 skeletons
anatomical models	animal models and models of various organs	animal models and models of various organs

Other	2010	2009
cadavers	pig 0.05 chicken 0.12	pig 0.05 chicken 0.12
cadaver parts	limbs, brain, liver, lung, stomach, small intestine, heart	limbs, brain, liver, lung, stomach, small intestine, heart
Specimen ⁵	pig skeletons 0.05 cat skeletons 0.04 rabbit skeletons 0.04 chicken skeletons 0.04 monkey skeleton 0.01	pig skeletons 0.05 cat skeletons 0.04 rabbit skeletons 0.04 chicken skeletons 0.04 monkey skeleton 0.01

	human skeleton 0.01	human skeleton 0.01
skeletons (bones)	bones disconnected from 4 pig skeletons	bones disconnected from 4 pig skeletons
anatomical models	animal models and models of various organs	animal models and models of various organs

¹ Four (4) dogs at the clinical department

² Three (3) dissected animals in formalin and 3-5 animals from the necropsy room

³ Four (4) cows at the clinical department

⁴ One (1) dissected animal in formalin

⁵ The total number of complete skeletons of all species is 31. There are also individual bones disconnected from 20 skeletons of all species

7.1.2 PATHOLOGY

Table 7.2: **Number of necropsies over the past 3 years**

Species	Number of necropsies			
	2010	2009	2008	Average
Food- producing animals				} 298
- Cattle	31	27	21	
- Small Ruminants	219	238	195	
- Pigs	56	43	44	
- Other farm animals	-	-	-	
Equine	9	2	9	} 1,516
- Poultry	1,789	1,379	1,294	
- Rabbits	13	61	11	
Companion animals/exotic				} 209
- Dogs	187	124	164	
- Cats	42	41	27	
- Exotics	4	2	2	
- Wild animals	13	1	21	

Students are trained in semesters 6, 8, 9 and 10 (in total 48 hours for each student).

7.1.3 ANIMAL PRODUCTION

A dairy sheep farm has been established in 2009 in the premises of Kolhiko. The flock (200 sheep) is used for the practical training. Training of students at this facility has now been incorporated into the undergraduate curriculum, starting as early as the first semester of studies (see Chapter 4). During that training students gain proficiency in management of dairy sheep and acquire important knowledge on key husbandry issues in sheep production (animal handling, housing and feeding

regimes, preventive veterinary medicine and management of epidemic diseases, application of prophylactic schemes and treatment on individual animals and on a herd basis, reproduction, growth, milk production, and disposal of animals and their products). Particular emphasis is given to ensuring that all actions are performed humanely and competently, as well as to making students aware of the risks to human health by inappropriate animal approach and handling. In addition to achieving the required competencies, special consideration is given to the welfare of animals used in practical training as well as to the health and safety of teaching staff and students.

Beginning at the academic year 2009-2010 each new student is given the opportunity to “adopt” one female animal. Through this “virtual adoption”, the student is able to observe the productive life of the animal during his/her studies (all data is available through the ALPRO™ herd management software used at the farm) and create a personal e-portfolio.

In particular the animal husbandry course at the Kolchiko farm aims at developing the following skills and competencies:

- A good understanding of the structure, types and main components of dairy sheep enterprises (including their economics e.g. cost of milk production, cost of specific diseases etc)
- Techniques for approaching, catching, moving, handling young and adult sheep
- The ability to examine the animals’ teeth and to assess age by dentition
- The ability to evaluate body condition score
- The ability to examine the animals’ feet and to perform routine paring
- Familiarisation with the use of drenching gun, administration of boluses and anthelmintics
- The offering of lambing assistance; active involvement in the care of newborn lambs and application of basic husbandry procedures (marking, tail docking, feeding of colostrum)
- Familiarisation with the injection of medicines and vaccination protocols (all treatments and vaccinations are performed by students)
- Familiarisation and understanding of the normal behaviour of healthy male and female sheep
- Familiarisation of reproductive techniques and the management of male and female sheep during the mating season (e.g. insertion and removal of intravaginal sponges and injection of melatonin boluses)
- Familiarisation with the operation of the milking parlour and its technical characteristics as well as the assessment in practice of biosecurity measures to produce high quality milk.

Practical training on Animal Production in other species of animal is performed in contracted Institutes and farms (APPENDIX II pp 197-198).

7.1.4 FOOD HYGIENE / PUBLIC HEALTH

The practical training of students in food hygiene, is based on products of animal origin that are obtained from the local market. Such products may include:

- **Laboratory of Milk Hygiene and Technology**
Different types of pasteurized milk, chocolate milk, sweetened and unsweetened condensed milk, UHT milk, milk powder, yogurt, cultured milk, cream, butter, infant milk formula, cheese and ice cream.
- **Laboratory of Food Technology**
Raw beef meat, raw pork meat and different types of sausages.
- **Laboratory of Food Hygiene**
Different types of sausages, as well as eggs, raw beef meat, pork and poultry meat, fish and shellfish.

7.1.5: CONSULTATIONS AND PATIENT FLOW SERVICES

7.1.5.1 CONSULTATIONS

All the units of the clinics are fully operational for about 48 weeks per year. Animal owners can admit their animals to the clinic or make telephone appointments for consultation. The number of consultation days is five per week and the admission hours for new small and large animal cases are from 09.00 to 13.00, although consultations may take longer and usually end at 16.00-17.00.

It is noted that, following an agreement with the animal welfare societies, the number of cats admitted to the companion animal clinic for neutering and, mainly, ovario-hysterectomy (OHE) has recently been considerably increased. Thus, the students have the opportunity to be actively involved in the performance of an OHE as well as in the administration of general anaesthesia in this animal species.

7.1.5.2 PATIENT FLOW

Table 7.3: Number of cases: a) received for consultation and b) hospitalised in the Clinics during the last three years.

Species	Number of patients						Average
	2010		2009		2008		
	a	b ¹	a	b ¹	a	b ¹	
FOOD PRODUCING							} 214
Bovine	18	18	2	2	10	10	
Ovine, caprine	256	256	139	139	198	198	
Porcine	7	7	5	5	8	8	
Other farm animals							
Poultry ²	-	-	-	-	-	-	} 11
Rabbits	13	13	11	11	8	8	
Equine	194	44	192	51	108	36	165
COMPANION / EXOTICS ³	3,535	1,154	3,325	659	2,813	525	} 3,224
Canine	2,476	784	2,488	558	2,079	453	
Feline	735	355	452	98	434	69	
Other	324	15	385	3	300	3	

¹ The numbers of hospitalized animals are included in the respective numbers of animals received for consultation, therefore they are not used in the calculations of the averages, which are used in calculating the various ratios.

² Poultry cases admitted to the respective Unit are sick or most often dead animals to be examined and necropsised for diagnostic purposes. Therefore, they have been included in Table 7.2

³ It is noted that these numbers do not include “re-examinations” (1,064, 1,062 and 1,037 in 2008, 2009 and 2010, respectively), namely animals that are admitted for re-examination(s). They are not considered new cases, however, most often, they are re-admitted long time after the first admission, and therefore, they are examined by different students.

7.1.6: VEHICLES FOR ANIMAL TRANSPORT

Transport of companion animals to and from the relevant Clinic is the responsibility of the owners. Regarding farm animals, on some rare occasions animals can be transported using designated vehicles (that are capable of towing trailers for animal transport) of the Clinic of Farm Animals. This service is offered only for selected emergency cases, free of charge, during the working hours of the day. The following vehicles are used for this purpose:

- Three “Opel Zafira 1.8i” [two (5-seat) are modified to be used as ambulance cars, while one (a 7-seat car) can only be used to transport students visiting farms with the ambulatory clinic, see chapter 6].
- Two trailers for large animal transport.

7.1.7: ON-CALL EMERGENCY SERVICE

In the Clinic of Companion Animals only second-opinion emergency cases may be admitted outside the regular admission hours. However, re-admission as

emergencies of patients examined and treated in the clinic, is allowed on a 24-hour basis, seven days a week.

On call 24-hour emergency service is also offered to equine patients; owners or referring veterinarians may contact the attending faculty member and send the equine patient to the clinic.

Concerning farm animals, animal owners can contact on-duty postgraduate student or interns at any time, 7 days a week, in case of an emergency. This service is free of charge for the animal owners who collaborate with the Clinic for teaching purposes. If deemed necessary, faculty member(s) accompanied by 2-3 students (among those on-duty in the Production Animal Clinic at that time) and by 1 postgraduate student or interns visit the farm using one of the two mobile ambulances of the Clinic to provide care to the sick animals.

7.1.8 ON FARM TEACHING AND OUTSIDE PATIENT CARE

7.1.8.1 AMBULATORY (MOBILE) CLINIC

The **Clinic of Production Animals** offers consultation services to selected cattle, small ruminant, pig and poultry farms that collaborate with the FVMT and allow to be visited by students and Faculty members in return. Occasionally, farms that are serviced by private practitioners are also visited.

The mobile clinic operates 5 days per week throughout the academic year. Two vehicles that have been modified as mobile ambulances and two mini-buses are used for the farm visits. A small group of students (according to the rotation schedule), one faculty member and 1-2 postgraduate students/residents are on duty every day.

A list of the farms to which the mobile units have access is given in APPENDIX II (pp 199-201). It is estimated that across all mobile units, approximately 90% of farm visits take place during normal working hours, while the remaining 10% refers to out-of-hours emergency services. In the companion animal clinic, emergency cases account for about 5% of the case load.

Table 7.4a: Number of farms visited by the ambulatory/mobile clinics in the past three years

Species	Number of farms			Average
	2010	2009	2008	
Food-producing animals Cattle Small ruminants Pigs	68	77	66	} 116
	24	28	19	
	21	20	25	
Poultry (no of flocks)	22	28	18	} 37
Rabbits (no production units)	15	23	4	
Equine	50	24	30	35
Aquatic animals	5	5	5	5

7.1.8.2 OTHER ON FARM SERVICES AND OUTSIDE TEACHING

Table 7.4b: Number of cases seen on outside teaching (seen by the ambulatory/mobile clinic) in the past three years

Species	Number of patients			Average
	2010	2009	2008	
Food-producing animals Cattle ¹ Small ruminants ² Pigs	238	349	184	} 1,159
	178	228	160	
	771	588	781	
Poultry ³	22	28	18	} 226 (203)
Rabbits	250	306	54	
Equine	107	77	84	89
Other				

¹ During the visits to cattle farms students are also trained in pregnancy diagnosis by rectal palpation. The number of diagnoses are 665, 1013, and 403 for 2008, 2009 and 2010, respectively.

² During the visits to small ruminant farms students are also trained in vaccinating the animals, and in oestrus synchronization by injecting melatonin.

³ The numbers of poultry "cases" are the number of flocks (Table 7.4a), as during a visit the whole flock is examined and not individual cases. However, they are not used for the calculation of Ratio 15. Instead only the number of rabbit cases (203 plus the average number in Table 7.3) is used.

7.1.9: OTHER INFORMATION

The Production Animal Clinic purchases 10 pregnant ewes every year to teach students pregnancy diagnosis and gestation monitoring until lambing.

Apart from live animals used for training students, organs and parts of carcasses are used as teaching materials in order to increase hands-on-practice of the students. Occasionally, whole or part of dead animals (mainly dogs) from the necropsy room is used for training of both under- and post-graduate students in surgery. The material is either unfixed or frozen and thawed before the training course. Moreover, dead young calves are collected by the mobile clinic and are deep-frozen for future use. During classes these calves are thawed and put in a special apparatus resembling the uterus of a pregnant cow in various faulty dispositions. The students are asked to

handle these dispositions and pull out the calf. After completing this exercise, the students fetotomize the carcasses. Organs or parts of carcasses are also used for other teaching purposes. Udders, uterus, ovaries and limbs of ruminants are being collected from the slaughterhouses for intramammary injections, suturing, palpation, and foot care.

The level of clinical services offered by the Faculty to companion and large animals (horses and food animal species) is superior to that of private practitioners in terms of facilities, equipment, hours of service, expertise and responsiveness.

The Faculty accepts first and second-opinion cases. The proportion of first- and second-opinion cases varies among the species and the different clinics. With regards to companion animals, the proportion of second-opinion cases has been estimated to be 50%. For pigs, ruminants, poultry and rabbits almost all are first-opinion cases. In contrast, for equines only about 20% are first-opinion, the remaining 80% being second-opinion cases.

The Faculty has a very good collaboration with local associations of private practitioners of all animal species. Practitioners are encouraged to communicate with staff members and refer cases for consultation, treatment, hospitalization or special diagnostic procedures (endoscopy, diagnostic imaging, electrophysiology etc). On certain occasions, the Faculty organises continuing education seminars with practical training for private practitioners or makes the premises of the clinics available for organising similar events. Furthermore, private practitioners, who are well acknowledged in a particular specialisation area, are invited annually to lecture to students.

There is a number of Diplomates of European Colleges of Veterinary Specialisation among the academic staff and several others that have been specialized in a particular field of Veterinary Medicine, without having board certification. In companion animals there exist faculty members specialized in dermatology, diagnostic imaging, anaesthesia analgesia and intensive care, orthopaedic and soft tissue surgery, clinical oncology, neurology, gastroenterology, cardiology, endoscopy, dentistry, ophthalmology, and exotic animal medicine.

European board certified specialists exist for dermatology, anesthesia and analgesia, diagnostic imaging, clinical pathology, animal reproduction, bovine health management, small ruminant health management, porcine health management, veterinary parasitology, pharmacology and toxicology, veterinary public health.

The Faculty maintains collaborations with the following institutions, with the aim of providing students with practical training on their premises (see also chapter 6.3):

- The National Agricultural Research Foundation at Ionia, Thessaloniki.
- The American Farm School at Pylea, Thessaloniki.

Since 2009 in the Companion Animal Clinic and 2010 in the Production Animal Clinic case records are kept using an electronic system (e-vet). Each Clinic also keeps detailed individual records of each patient. The electronic system provides the opportunity for easy retrieval of the data. The system is accessible to all students for teaching purposes.

7.1.10: RATIOS

Table 7.5: **Animals available for clinical training (in the clinics of the Faculty or seen through the Ambulatory clinic) as ratio to the number of students in the last full year of clinical training**

			Denominator
R11.			
number of students graduating annually	103	1	
number of food-producing animals seen at the Faculty	214	2.08	2.08
R12			
number of students graduating annually	103	1	
number of individual food animal consultations outside the Faculty	1,159	11.25	11.25
R13			
number of students graduating annually	103	1	
number of herd health visits	116	1.13	1.13
R14			
number of students graduating annually	103	1	
number of equine cases	254	2.47	2.47
R15			
number of students graduating annually	103	1	
number of poultry/rabbit cases	214	2.08	2.08

R16	number of students graduating annually	=	$\frac{103}{3,224}$	=	$\frac{1}{31.30}$	31.30
	number of companion animal cases seen at the Faculty					

R17	number of students graduating annually	=	$\frac{103}{37}$	=	$\frac{1}{0.36}$	0.36
	Poultry (flocks) Rabbits (production units) seen					

Table 7.6: Animals available for necropsy

R18	number of students graduating annually	=	$\frac{103}{298}$	=	$\frac{1}{2.89}$	2.89
	number of necropsies food producing animals+equines					

R19	number of students graduating annually	=	$\frac{103}{1,516}$	=	$\frac{1}{13.72}$	13.72
	number of poultry/rabbits					

R20	number of students graduating annually	=	$\frac{103}{209}$	=	$\frac{1}{2.03}$	2.03
	Necropsies companion animals					

NB. In calculating the above ratios, the number of students graduating annually was taken into account. The mean number of graduating students in the past 5 years (Table 9.4) is about 103. However, this number does not reflect the number of students in the **last full year of clinical training**, which is, normally, around 90 (however it is higher-than-normal during the current and to a lesser extent next year, see chapter 9). If the usual (lower) number is used then all the above ratios will be improved. Moreover, ratio R16 is negatively affected by the low number of cases of companion animals, which started decreasing from 2007 due to a turmoil in Higher Education in the country, and continued in 2008 with the beginning of the economical crisis. It was then when measures were taken

to increase the companion animal caseload. As a result, the companion animal case load increased by 18.2% in 2009 (from 2,813 to 3,325) and by a further 6.3% in 2010 (from 3,325 to 3,535). It is of interest to note that with the usual number of students attending the clinics in the last (5th) year of their studies, the mean ratio becomes 35.82 (3224/90), while for the year 2010 increases to 39.28 (3535/90). Finally, clinical training includes out-of-hours service (about 200 hours for each student in companion animals), as well as training in elective courses for students who choose such courses. Moreover, a significant number of re-examinations (see footnote No 3 in Table 7.3), which contribute considerably to clinical training.

7.1.11 OTHER SPECIES

One 3-hour practical training session in “Farming and Pathology of Aquatic Organisms” is held every year for the students of the 6th semester at the rearing facilities of the Ichthyology Laboratory, in the main building of the FVMT (using live fish or other aquatic organisms). This Laboratory consists of three rooms, equipped with aquariums, where fish and shellfish can be maintained. Students have the opportunity to visit these aquarium rooms, see the operation of the recirculation systems, perform clinical manipulations (application of treatments, blood sampling, vaccination, anaesthesia) and familiarise themselves with shellfish species, especially those that are not farmed (horse mussel, oysters, clams). The students also visit commercial farms located close to Thessaloniki and have the opportunity to see all the necessary installations and equipment for fish and shellfish farming.

Students of the 7th semester, following the elective course “Diseases of Farmed Aquatic Animals”, are trained in the same facilities for 6 hours.

Basic principles of bee diseases and bee culture are taught as a separate course. Training is provided in bee anatomy, bee hives and collection of specimens for laboratory examination and diagnosis of infectious and parasitic diseases, as well as toxicoses. Practical training takes place in the Laboratory of Parasitology and in the farm of the AUTH Faculty of Agriculture, after a mutual agreement between the two institutions. Additional training on this subject is offered to those students enrolled in the two respective elective courses.

Additionally to the animals used for Anatomy instruction, the following animals (numbers/year) are used for teaching purposes in Basic Sciences:

- a) Physiology: 84 Wistar rats, 12 New Zealand rabbits and 40 frogs
- b) Pharmacology: 50 New Zealand rabbits.

7.2 COMMENTS

Production animal consultations, treatment and hospitalisation are free of charge in an effort to maintain a high case load. Companion animal case load has been significantly increased the last two years while equine case load is considered satisfactory, despite the low equine population in the area and the entire country.

Ambulatory clinic's range of activities extends at approximately 80 km around Thessaloniki. In this broader region considerable populations of production animals are reared, including cattle (approx 20,000), small ruminants (500,000), pigs (3,500 sows and approx. 70,000 fattening pigs in the farms visited), poultry (18,000,000 broilers per year) and equidae (5,201 in the 7 prefectures of central Macedonia, 823 of which in the prefecture of Thessaloniki). FVMT is not allowed to have exclusive rights for providing veterinary services to the farms in any part of this region. On the other hand the FVMT does not wish to compete with local veterinary practitioners. Co-operation with the latter ensures the availability of first- and second-opinion farm and other species of animal cases for better training of the students.

The small number of bovine cases admitted to the production animal clinic may be attributed not only to the small number of cattle raised in the region around Thessaloniki and to the inability to exclusively provide veterinary services to farms of the region or part(s) of it, but also to the fact that many farmers are reluctant to transport their animals to a clinic where they may become infected with various contagious diseases. However, as mentioned elsewhere, our students have the opportunity to be trained on a rather adequate number of cases and herds at the farm level.

It is believed that the operation of the new Production Animal Clinic at Kolchiko will increase the annual number of consultations for farm animals, especially bovine.

7.3 SUGGESTIONS

The FVMT needs to intensify its efforts to retain the momentum of caseload increase in companion animals, something that will improve the clinical training of the students. Combined with the resulting increase in the Clinics revenue, this will contribute greatly to the elevation of the level of the offered services and the further improvement of the clinical training of the students.

Similarly, an increase in the number of staff in the clinics (academic, and technical and other support staff, drivers, etc.) will greatly improve both the clinical training of the students and the operation of the clinics.

Additional vehicles (truck) are needed for the transportation of large animals, in order to increase the number of hospitalised production animals.

Chapter 8. LIBRARY AND LEARNING RESOURCES

8.1. FACTUAL INFORMATION

8 .1.1 LIBRARY AND OTHER INFORMATION TECHNOLOGY SERVICES

MAIN LIBRARY

The Aristotle University Library is housed in the Library building at the centre of the University campus (APPENDIX V.1c p 231). Together with the Departmental libraries it makes up the AUTH Library System, which provides access to approximately 800,000 book titles, 363,000 e-books, 20,000 electronic journals and 2,500 annual subscriptions of printed journals.

The AUTH Library System offers access to electronic journals either through subscriptions or through the HEAL-Link Consortium (HELLENIC ACADEMIC LIBRARIES LINK). This consortium has established agreements with publishers of scientific journals and electronic sources of information, which provide online access to full text of scientific journals, books and to bibliographic and full-text databases. HEAL-Link resources include SCOPUS and SCIENCE DIRECT (Elsevier) and access to them by AUTH students and staff is provided using computers that are physically located in the University through IP recognition, or remotely, using VPN access.

Other databases and collections that are available through the AUTH Library System include ProQuest Central, JSTOR, ProjectMUSE, Agricola, CSA Natural Science, Periodicals Archive Online, Gale (AUTH selection), Cochrane, Embase, and Web of Science.

The Central Library has a reading room with a capacity of 1,300 seats, which is used solely for studying. It also has a scientific-educational section which can be used by students to search for bibliography listings, and two computer labs, one of which offers IT services. Finally, it has a resource room in the new building with fully equipped computers and a Braille printer for visually impaired students.

A total of 27 computers are available to users of the Library through which available resources can be accessed. Moreover, wireless internet access is available within the Central Library. Wireless Internet access is also available in 19 other Faculties/Schools/Laboratories or other University buildings within the main campus of the University. Remote access (from outside the University) is also possible, following connection to the University Network via VPN. Moreover, there exists the potential to connect to Scopus and Science Direct (Elsevier), using a computer that is not physically located in the University campus, by using the login and password details that allow access to the AUTH account.

Other library resources which are available and searchable online include **Psifiothiki**, a digital repository, which allows access to rare publications, archived material,

material from the personal collections of benefactors of the Library, Doctoral and Masters theses and other material.

Also, the Library has acquired and made available to the AUTH University community access to REFWORKS (*RefWorks Copyright © 2009*), an online reference management, writing and collaboration tool, the service **RefAware**, and the web-based course management system “Blackboard”, which has more than 11,000 active users and 949 topics, of which 477 active users visit the 74 topics that are taught by 44 teachers at the FVM.

The AUTH Library's annual operating budget over the past three years was: 1,282,542 € in 2008, 1,290,000 € in 2009, and 1,324,000 € in 2010. There are 50 full-time employees, excluding employees for cleaning and security services.

Exchanges with other university libraries

For reference questions and interlibrary loans, the AUTH Library offers an online reference service. Using a web form, students and staff members can submit a question or a request for books not included in the collection of the AUTH Library. In such cases, it is possible to order this from other collaborating libraries in Greece or abroad.

Library Instruction Services

The mission of the Library Instruction Service is to instruct AUTH faculty and students on matters related to available library services, by offering seminars addressed to all members of the AUTH community. Personal help and consultations is also available to all AUTH community members, by appointment.

The Central Library is open on all working days throughout the year. The administrative services are available daily from 8.00 a.m. to 2.00 p.m., and the reading room from 8.00 a.m. to 10.00 p.m. During examination periods, the reading room opening hours are extended until midnight, while the scientific section is open from 8.00 a.m. to 8.00 p.m. During the summer months and during Christmas and Easter holidays, the working hours of the reading room are regulated accordingly.

The AUTH Departmental Libraries have reading rooms as well, but their working hours are regulated by each Department individually. Moreover, anyone can have access to the AUTH Library System over the internet at the address www.lib.auth.gr. However, access to full text of subscribed or other specialised resources requires a password.

FVMT LIBRARY

The FVMT Library is managed by the Library Committee, which is composed of three members of the academic staff of the Faculty and the Librarian. The President and the members of the Committee are appointed by the General Assembly of the Faculty for a term of two years, which may be renewable. The FVMT Library is part of the AUTH Library System, and operates in accordance with its Policies and Procedures as they are set-up and approved by the Senate of the University.

The FVMT Library is specific to the Faculty of Veterinary Medicine. Its **budget** was 6,605 €, 6,768 € and 5,403 € for the years 2008, 2009 and 2010, respectively. This budget refers to the purchase of books, and operating costs, but does not include librarian salaries, which are paid by the University. Furthermore, costs for renewal of journal subscriptions are not included in this budget, since they are also covered by the AUTH Library System.

Number of full-time employees: 2

Number of journals received each year as hard copies: 67

Availabilities for online literature search in FVMT

All staff members have direct access to the AUTH Library for online services from their office or home. Students also have access not only from the PCs in the three computer labs of the FVMT, but also from their home. There are also 3 PCs and one netbook inside the FVMT Library that are available to students for online literature searches, through the AUTH Library website. Students also have access to the printed journals and books in the Library.

Availability of textbooks

Teaching in the FVMT is in Greek, therefore students usually study from notes written by the course instructors or from books that are written in the Greek language. Moreover, since course material (notes and books) that is required for reading is distributed to students free of charge there is no need to have many copies available at the library. Nevertheless, many textbooks that are used for instruction at the FVMT are available (in multiple copies) in the main library of the Faculty. Furthermore, many books written in English are available in the main and subsidiary libraries of the FVMT, including several classical reference books, which are available in multiple copies.

The total number of books in the Libraries of the Faculty is 18,000 (2000 are in the main library and the remaining are in the subsidiary libraries).

Library opening hours:	<u>weekdays</u>	<u>weekends</u>
during term-time	08.30-17.00	-
during vacations	08.30-14.30	-
closed	August 1-15	

Adjacent to the FVMT, there exists a reading area with 85 student reading places. It remains open on weekdays only, from 08.00 am to 08.00 pm during term-time, from 08.00 am to 02.30 pm during vacations, and is closed from the 1st to the 15th August.

SUBSIDIARY LIBRARIES OF THE FACULTY

There are a total of 105 student reading places in 10 out of the 18 Subsidiary Libraries located in the various Departments. Undergraduate students have access to these Libraries during working days and hours. A member of the teaching or support staff is responsible for the operation of each of those libraries.

The Subsidiary Libraries of the FVMT are located at the following Laboratories or Clinics:

1. Laboratory of Anatomy, Histology and Embryology
2. Laboratory of Physiology
3. Laboratory of Biochemistry and Toxicology
4. Laboratory of Pharmacology
5. Laboratory of Nutrition
6. Laboratory of Animal Husbandry
7. Laboratory of Ichthyology
8. Laboratory of Ecology and Protection of the Environment
9. Laboratory of Animal Production Economics
10. Laboratory of Microbiology and Infectious Diseases
11. Laboratory of Pathology
12. Library of Avian Medicine
13. Laboratory of Parasitology and Parasitic Diseases
14. Laboratory of Food Hygiene
15. Diagnostic Laboratory at the Department of Clinical Sciences
16. Clinic of Companion Animals, Unit of Internal Medicine
17. Clinic of Companion Animals, Unit of Surgery
18. Clinic of Production Animals

The total annual budget of the Subsidiary Libraries during the last three years was: 30,231 €, 30,231 €, and 28,322 € for the years 2008, 2009 and 2010, respectively.

Titles, call numbers, location, status and other details as well as statistics of use for all the books of the subsidiary libraries are available through a centralised system.

INFORMATION TECHNOLOGY SERVICES

In the FVMT main library there exist one photocopier, two scanners, one projector, and A/V equipment (DVD, Video, TV). There are 84 video tapes, 75 of which have

been transferred to DVDs for easier access. There also exist 76 CDs and 24 slide collections, each of which includes also an audio cassette tape. This material is available to the students who can use it either in the Library, where three PCs are available for this purpose, or in the computer lab located close to the Library, next to the Secretariat of the Faculty.

In the FVMT there exist two computer laboratories with 24 computers (in the main building) and one in the buildings of the Clinics (9 computers) with internet access. One of the two computer laboratories in the main building is available at the Laboratory of Animal Production Economics. This is used for the teaching needs of the courses offered by the Laboratory (undergraduate, graduate and elective courses in the areas of Biostatistics, Epidemiology and Economics of Animal Production). In the companion animal clinic there are also 15 computers used to keep electronic case records or to study the records of archived cases. These computers may also be used for Internet connection.

Several commercial software programs are also available to the AUTH community, free of charge, through special arrangements and licenses. Support related to the AUTH network and internet access is provided by the AUTH Network Operations Center.

Instruction on using computers and on performing bibliographical searches is provided to undergraduate students during the subjects of “Elements of Information Technology” “Introduction to Veterinary Education”, “Biostatistics”, “Economics of Animal Production” and “Epidemiology”. Additionally, there is a continuous co-operation between the undergraduate students and the teaching staff about the use of such self-learning recourses, throughout the entire period of studies.

8.2 COMMENTS

Facilities, equipment and services of the AUTH Library system are at a very good level. Printed and online collections are numerous and cover adequately many scientific areas. Capabilities of online literature searches and access to full-text of journals and books are impressive. Coupled with the capability to search the catalogues of other Greek Universities and Institutes and to request materials from other Libraries, most queries of students of our Faculty can be reasonably answered.

Assistance to users of the Library System is offered from both the Central Library and the FVMT Library and is quite valuable. Furthermore, services as Blackboard and RefWorks are very useful to students and faculty members of the FVMT. It seems that AUTH very actively supports its Library System, as can be evidenced by the impressive progress in the acquisitions, co-operations with other libraries or consortia and its operations. This can be viewed as a reasonable guarantee that this development will continue into the future.

Full-time employees and operating hours of the FVMT Library and the reading room, especially during the weekends are not adequate. However, this is made less severe by the capabilities for online searches, which are also possible from remote locations (outside the University campus).

IT facilities are deemed adequate, both in terms of the number of computers and software available to the students (in the Faculty and the clinics), and in terms of instructional facilities. This is evidenced by the fact that there are no observed bottlenecks in the computer laboratories that are available for student use either in the main Faculty facilities or in the clinics. However, the number of available student places is marginally adequate during classes that are taught using PCs. Even though classes are broken down in many small groups, still it would be desirable to have more computers available for these activities.

Instruction of students in basic principles of use of IT is deemed adequate.

Even though the computers at the FVMT Library (and their software) are serviced regularly, still heavy use from the students results often in problems, which can affect their performance considerably.

8.3 SUGGESTIONS

Additional Library staff should be hired. This would allow the Faculty to increase operating hours of the FVMT Library and the reading room, especially during the weekends.

Many books and journals are kept in the main FVMT Library. However, central accumulation is sometimes problematic, since academic staff and students are working in three locations (Campus, Clinics and Kolchiko) a considerable distance apart. We believe that books should be more accessible, during training time, at the areas where this training takes place, and not in a centrally-located library. For this reason, many specialised reference books are kept in the Subsidiary Libraries of the Faculty. Furthermore, since all books and course notes are provided for free to all students there is not a large need for them to consult the library, when they study for their exams.

Even though, the AUTH Library provides access to a wealth of materials and services, it seems that many students do not use the Library services extensively and do not benefit from the full range of available resources. More efforts should be made to remedy this by encouraging faculty members to discuss the library resources and their use with students, as well as encourage this use through the assignment of problems or exercises that require bibliographic searches and self-learning activities.

Computers in the computer labs should be upgraded and their support should be more effective. Furthermore, wireless Internet access must become available throughout the AUTH campus, and also in the Clinics and at Kolchiko.

Chapter 9: STUDENT ADMISSION AND ENROLMENT

9.1 UNDERGRADUATE COURSES

9.1.1 UNDERGRADUATE STUDENT NUMBERS

The following tables provide information about the number of students currently enrolled in the FVMT.

Table 9.1: **Undergraduate student composition in 2010**

Total number of undergraduate students	528
Male students	(43.0%) 227
Female students	(57.0%) 301
Foreign students from	
- EU countries (Bulgaria, Cyprus, Portugal)	43
- Non-EU countries (Albania, Ethiopia, Georgia, USA)	6
Students not in any specific year*	698

** It refers to students that have fulfilled attendance requirements for all courses and, therefore, they do not attend classes or other instruction sessions (“non-active” students, see 9.1.3).*

9.1.2 STUDENT ADMISSION

The academic year begins on the 1st of September and ends on the 31st of August of the following year. The minimum admission requirement is a High School Diploma (Greek Lyceum). Entrants to the FVMT must satisfy the general matriculation requirements of the University, which include a Nation-wide examination. Performance in this examination is a common criterion for anyone who wishes to enter Greek Universities. This examination is conducted once a year, under the supervision of the Ministry of Education.

Admission to the FVMT is granted only for the fall semester of each academic year and only on a full-time basis. The number of students admitted each year is determined by the Ministry of Education. Because of the nature of the admittance examination system, in general first year students in FVMT have a sound basic knowledge in biology and in physical sciences like physics and chemistry, obtained during their high school studies.

It should be noted that admittance of students in the various university schools in Greece is competitive and is based on the overall score obtained in the national exams. This results in the admission to the FVMT of some students who may have obtained a high score, but their first choice of area of studies was not necessarily veterinary medicine. These students usually take the national exams again and, if they succeed in getting

admitted to another school, they leave the FVMT (see Table 9.2). The percentage of students re-sitting the national exams and leave the FVMT is of about 10-15%.

The number of undergraduate students admitted to the FVMT each academic year consists of a “standard” intake of about 75-90, and a “supplementary” intake of around 20-30 students (Table 9.2). The supplementary intake is legislated in the Greek laws regarding admission and enrolment of students to Greek Universities. This supplementary intake may include students of Greek origin from foreign countries or from Cyprus, and, in addition, from the School of Veterinary Medicine in Karditsa (Greece) students with disabilities or serious illnesses, and students belonging in low income families or in families with more than three children. Finally, graduates of other Schools of Greek Universities desiring to obtain a second degree. Students of the latter category have to take special examinations, and if they are successful they may be admitted to one of the first semesters, depending on their previous studies.

A number of scholarships awarded by the AUTH are available to foreign students. It is necessary that foreign students have an adequate command of the Greek language in order to benefit fully from their studies in FVMT. The common practice is that all non-native speakers attend a Greek language course, offered by the School of Modern Greek, before commencing their studies.

Following enrolment, all students receive the FVMT Curriculum Guidebook containing comprehensive information on curricular elements, Unit allocation and other information about their studies. In addition, they receive the AUTH Guidebook in which all the support facilities offered by the University may be found (it may also be found at: http://www.auth.gr/students/guidebooks/index_en.html).

Table 9.2: Intake of veterinary students in the past five years

Year	Number of applying for admission	Number admitted			Number attending 1 st year
		“standard” intake	Other entry mode ^b	Not attending	
2010	NA ^a	79	25	10-12 ^c	104 (~90-92 ^d)
2009	NA	75	20	8	87
2008	NA	80	22	14	88
2007	NA	90	33	12	111
2006	NA	86	25	14	97
Average	NA	82	25	11.6-12.0	97.4 (94.6-95)

^a Not applicable

^b Supplementary intake, see above

^c Students who are enrolled in the first year, but it is estimated that they will re-sit the national exams and leave the FVMT in 2011.

^d Estimated number of students who will proceed to the 2nd year of studies.

9.1.3 STUDENT FLOW

Table 9.1 includes a category of students that do not belong in “any specific year”. These are called “non-active” students. They are students who have completed the attendance of the courses comprising the five-year study programme (including electives), but have not graduated yet. They are only taking examinations without attending classes or other forms of instruction. Therefore, these students are not included in ratios R1, R2, and R3 (chapter 10).

Table 9.3.1: Student flow and total number of undergraduate veterinary students (academic year 2010-2011)

Number of students present after admitted year 1	
1st year	104 (90-92 ^a)
2nd year	87
3rd year	88
4th year	107 (12 ^b)
5th year	142 (52 ^b)
Number of active students	528 (514-516)

^a The number of students expected to leave the Faculty (see comment Nr 3 below)

^b The numbers in parentheses refer to students of “previous years” (see comment Nr 3 below)

Table 9.3.2: Student flow – Follow up of the 128 and 97 students first enrolled in the academic years 2005-2006 and 2006-2007, respectively: listed are the numbers of these students in each of the five years of study, when their initial cohorts have reached their final year (2009-2010 and 2010-2011, respectively).

Enrolled in 2005-06		Enrolled in 2006-07	
1st year in 2009-10	0	1st year in 2010-11	3
2nd year in 2009-10	0	2nd year in 2010-11	1
3rd year in 2009-10	7	3rd year in 2010-11	
4th year in 2009-10	52	4th year in 2010-11	2

5th year in 2009-10	69	5th year in 2010-11	91
Nr of students graduated in 2010	25		
Nr of students completed their programme but not yet graduated	103*		

* 103 students are included in the “non-active” students.

Table 9.4: **Number of students graduating annually over the past five years:**

Year	Number graduating	Number graduating in 5 years (MNY)
2010	129	25
2009	75	13
2008	119	14
2007	111	3
2006	82	3

As already mentioned, non-active students do not attend courses or other instruction sessions and are only taking exams. This is the reason why the number of graduating students is larger than the number of students attending the respective final year, even though only a small number of the latter are graduating at the end of the fifth year.

Table 9.5: **Average duration of studies** (students graduated in the year 2010)

Duration of attendance	number
5 years	25
6 years	28
7 years	35
8 years	22
9 years	14
10 years	5
Average duration of studies of the students who graduated in year 2010	6.90

9.2 COMMENTS

1. The standard of students entering the Veterinary Faculty is very high. The Faculty is among the most highly rated choices for students in Greece, which means that students need to obtain high scores in the national exams in order to be admitted. Students contemplating a career in veterinary medicine have a sound basic knowledge in biology and in physical sciences like physics and chemistry, obtained during their high school studies as well as in the use of computers.
2. The Faculty is advocating strongly to the Ministry of Education the need to keep the number of students entering each year low. During the last few years the number of students admitted to the FVMT is smaller compared to previous years.
3. During the current academic year (see table 9.3) the number of the 4th and 5th year students (107 and 142, respectively) is large and may have a negative impact on their clinical training. This situation was created by the decision of the Faculty (necessitated by bureaucratic reasons) to give permission to the students of previous years to enter the 4th and now the 5th year without passing the prerequisite course examinations. As shown in Table 9.3, from the total of 142 students in the 5th year only 90 are “standard” and 52 are students from previous years. Similarly, of the 107 students in the 4th year only 95 are “standard” and 12 are from previous years. However, this is an extraordinary situation and it is expected that from the year 2012 onward the number of students entering the clinical years will be decreased to about 90 or less. Indeed, as shown in table 9.3.1, the number of 2nd and 3rd year students is 87 and 88, respectively, while of the 104 first year students only 90-92 are expected to continue their studies in the FVMT and the total number of students to be 514-516, instead of 528 (Table 9.3.1).
4. Currently, faculty members at the clinics are making a big effort in order to minimize the negative impact that the increased number of students may have to their clinical training. It should be mentioned, however, that clinical training in elective courses is not affected by the large number of 5th year students, since the number of students that can be enrolled in each elective course is fixed and consistently small (in most courses offered by Companion Animal Clinic the maximum allowable number of students is 6-10, see appendix I).
5. Average duration of studies during the period 2001-2007 was 8 years, while it was 6.92 years during the period from 1950 (year of Faculty opening) to 1999. As shown in Table 9.5, the average duration of studies for students who graduated in 2010 was about 6.8 years. Data concerning study duration under the new curriculum are available only for years 2008-2010, since the new curriculum was adopted in 2003. A comparison was made among students graduating the academic years 2008, 2009 and 2010 (students that entered the Faculty in the academic years 2003-04, 2004-05 and 2005-06, respectively) and graduates of the years 2005, 2006 and 2007 (who had entered the Faculty in the years 2000-01, 2001-02 and 2002-03, respectively). It was found that only 15 out of 400 students (3.75%) graduated during the years 2005-2007 within 5 years of studies. But, 56 out of 369 (15.18%) new curriculum students

graduated during the years 2008, 2009 and 2010 within a five-year period. Also, 45.9% and 54.6% of students had graduated within seven years after commencement of the studies, under the old and the new curriculum, respectively.

6. It seems that benchmarks such as “duration of studies” and “graduation grade” are improved under the new curriculum but more data are needed to draw valid conclusions.
7. The number of new-curriculum students graduating within a 5-year period may be bigger than that of the old-curriculum students, but it is, still, not satisfactory, reflecting the necessity to further evaluate and improve veterinary studies in the FVMT.
8. Almost all students who drop out of the Faculty are students whose first choice of area of studies was not veterinary medicine (see section 9.1.2). The number of these drop-outs may not be affected by the FVMT as it is the result of the national system of entrance examinations. Additionally, there exists a small number of students who have stopped attending veterinary studies, however, they have never notified, formally, the FVMT of this decision. Therefore, the FVMT records list these students under the year of studies during which they stopped attending.

9.3 SUGGESTIONS

The number of students admitted to the Faculty has to be kept low. The Faculty should continue advocating strongly to the Ministry of Education the need to keep the number of admitted students low (both for new students and for those that comprise the “supplementary intake”).

The average duration of studies is not satisfactory. Student failures can be attributed to a variety of reasons and FVMT should evaluate this situation and provide solutions and improvements (see also comments and suggestions in chapters 4 & 5).

Chapter 10: ACADEMIC AND SUPPORT STAFF

10.1 FACTUAL INFORMATION

Table 10.1: Personnel in the establishment provided for veterinary training

	Budgeted posts (FTE)		Non-budgeted posts (FTE)		Total (FTE)	
	VS	NVS	VS	NVS	VS	NVS
1. Academic staff						
Teaching staff (total FTE)	81.5 ¹	9	-	-	81.5	9
Research staff (total FTE)	-	-	5.1 ²	-	5.1	-
Others (please specify) (FTE)	2 ³	0.4 ⁴	12.6 ⁵	-	14.6	0.4
Total FTE	83.5	9.4	17.7	-	101.2	9.4
Total FTE (VS + NVS)	92.9		17.7		110.6 ⁶	
FTE providing last year teaching	41.5 (VS) 0.1 (NVS)		17.7 (VS)		59.3 ⁷	
2. Support staff						
a) responsible for the care and treatment of animals	1		15 ⁸		16	
b) responsible for the preparation of practical and clinical teaching.	7				7	
c) responsible for administration, general services, maintenance, etc.	9		11 ⁸		20	
d) engaged in research work	-		-		-	
e) others (please specify)						
2. Drivers			1 ⁸		1	
3. Security personnel	1		5 ⁸		6	
4. Cleaning personnel			17 ⁸		17	
5. Gardeners			1 ⁸		1	
Total support staff	18		50		68	
3. Total staff	110.9		67.7		178.6	

¹ One full professor since last year works, temporarily, part time (50%)

^{2,5} Seventeen PhD students², three residents⁵, and 15 post-graduate (MSc) students⁵ in the clinical disciplines, including Pathology, are included in the teaching staff, because although they are not paid any salary, they do not pay any fees and, in addition, the clinic pays all expenses for their research (experimental animals, consumables, cost of various analyses, publications etc.). Postgraduate students and residents perform clinical teaching activities for 70% of their work time, while PhD students are involved in clinical teaching accounting for 30% of their work time.

³ Two Scientific collaborators (members of the permanent staff) working in the FVMT for about 30 years (1 FTE each)

⁴ Four members of Special Scientific Teaching Staff (0.1 FTE each). They are not veterinarians, however, they hold a degree of Higher Education (e.g. Biology) and are involved in laboratory teaching of undergraduate students.

⁶ This number of FTEs corresponds to 132 staff members [97 budgeted academic teaching staff (86 VS and 11 NVS), and 35 non-budgeted posts, all VS]. For their distribution to the five Departments see Tab. 10.2.

⁷ The number of last (5th) year teaching staff may be higher for the students who, in their last year follow non-clinical electives

⁸ These posts are indirectly budgeted FTE since they are paid by a private company, which however is contracted by the University.

Table 10.2: Allocation of academic (veterinary surgeon and non veterinary surgeon) teaching staff – expressed as FTE – and support staff to the various departments

Department*	Academic teaching staff										Support staff (see table 10.1)		
	Full prof.		Associate prof.		Assistant prof.		Lecturers		Other ¹		Technical (b + d + e)	animal carers (a)	Admin. / (c)
	VS	NVS	VS	NVS	VS	NVS	VS	NVS	VS	NVS			
1 st	4	-	2	2	3	1	4	1	-	0.1	5	3	1
2 nd	2	3	3	-	3	-	2	-	1	0.1	4	3	2
3 rd	5	-	2	-	5	-	5	1	0.3		4	2	3
4 th	3	-	3	-	3	1	2	-	-	0.1	2	-	2
5 th	4.5	-	3	-	13	-	10	-	18.4	0.1	12	8	3
FVMT											5	-	9
Total	18.5	3	13	2	27	2	23	2	19.7	0.4	32	16	20

¹ "Other" includes the staff categories ²⁻⁵ in Table 10.1

*** Departments**

1st : Department of Animal Structure and Function

2nd : Department of Animal Production, Ichthyology, Ecology and Protection of the Environment

3rd : Department of Infectious & Parasitic Diseases, and Pathology

4th : Department of Food Hygiene and Technology

5th : Department of Clinical Sciences

Tab. 10.3: Ratios students/staff

$$R 1: \frac{\text{no. of total FTE academic staff at Faculty}^1}{\text{no. undergraduate students at Faculty}^2} = \frac{110.6}{528^4} = \frac{1}{4.77} = \text{Denominator } \mathbf{4.77}$$

$$R 2: \frac{\text{no. of total FTE at Faculty}^1}{\text{no. undergraduate students at Faculty}^2} = \frac{178.6}{528^4} = \frac{1}{2.95} = \text{Denominator } \mathbf{2.95}$$

R 3:	$\frac{\text{no. total VS FTE at Faculty}^1}{\text{no. undergraduate students at Faculty}^2} = \frac{101.2}{528^4} = \frac{1}{5.22}$	Denominator 5.22
R 4:	$\frac{\text{no. total VS FTE at Faculty}^1}{\text{no. students graduating annually}^3} = \frac{101.2}{103^5} = \frac{1}{1.02}$	Denominator 1.02
R 5:	$\frac{\text{no. total academic FTE at Faculty}^1}{\text{no. total FTE support staff at Faculty}^2} = \frac{110.6}{68^6} = \frac{1}{0.61}$	Denominator 0.61

¹ Table 10.1, ² Table 9.3.1, ³ Table 9.4

⁴ As explained in chapter 9 (Table 9.3.1) the number of first year students will be decreased by 10 to 12, and, therefore, the number of undergraduate students will be decreased accordingly

⁵ Under the conditions prevailing in our Faculty (see chapter 9, Table 9.4), the number of graduating students is larger than the number of students attending the respective final year

⁶ It is noted that ratio R5 becomes worse considering the very small number of technicians, research staff and administrative personnel available to the various Departments

Universities are self-governed legal entities under the supervision of the State. Personnel salaries are covered by the State.

Each Faculty/School is fully independent as regards the selection of its academic staff and also the determination of the scientific fields of the positions to be filled and the planning for human resources. However, the Ministry of Education has the authority to determine the number of new posts to be filled every academic year in all Greek Universities. Furthermore, the Ministry of Education has the authority to monitor the selection process in order to avoid procedural irregularities before appointing academic staff selected by the Faculties/Schools. Briefly, the Universities have full autonomy for the academic part of the selection process, but the Ministry of Education has complete control on the economic and legal part of the selection, and appointment process. Any candidate participating in a selection process for an academic position in any Faculty, may appeal the decision, on grounds of procedural irregularities.

Every year, the Ministry of education decides on the number of new positions to be allocated to each Institution of Higher Education, and then each such Institution determines the allocation of these positions to its Faculties/Schools. For the FVMT, further allocation of new positions to the Departments and then to the Laboratories and Clinics is determined by the General Assembly of the Faculty, following a proposal from the Strategic Planning Committee, and, theoretically, based on the teaching burden (hours of lectures and practical sessions) and the number of undergraduate students trained each year in the various Laboratories/Clinics. Additionally, the Faculty can advertise and refill any position that becomes vacant because of retirement or resignation of a member of the academic staff.

Filling of a position following retirement or resignation for any reason may be made in the same or different discipline and rank. From the 12 faculty vacancies due to retirement or resignation, during the last 3-4 years, 7 new faculty members have been elected but their formal appointment is still pending, while the remaining 5 vacancies have already been advertised and the process has been initiated. However, because of the present difficult financial situation this process has been delayed in comparison to previous years.

Tenure is associated with Professor or Associate Professor ranks. Lecturer or Assistant Professor positions are non-tenured positions. Assistant Professors may become tenured following a total of 7 years of service and after spending 3 years at this rank. Only after obtaining tenure an Assistant Professor may apply for promotion to Associate Professor. Members of the academic staff not obtaining tenure are released from the University.

The selection procedure for a position (at the rank of Professor, Associate Professor, Assistant Professor or Lecturer) can be initiated by the Faculty, either within the context of yearly planning of the Departments (provided the posts have been allocated to the Faculty) or following an application of a faculty member for promotion to a higher rank. The position opening and description is publicised in the daily press and on the website of the University. After the end of the deadline for submission of applications, the General Assembly of the School appoints a special electorate for each post consisting of 15 members. Five members originate from the Department the position belongs to, 5 from the remaining Departments, and 5 from other Faculties of the same or other Universities. The electorate consists of Faculty members of the same or superior rank to that of the position to be filled. The electorate appoints a Committee consisting of 3 members (from the FVMT and at least one from other Faculties/Schools), who submit a written recommendation to the electorate. It is noted that for any position (Lecturer to Professor) no one may be appointed unless he/she holds a PhD. Candidates are evaluated using a variety of criteria, including the number and quality of publications, especially in internationally refereed scientific journals, adequate teaching ability and experience, and other scientific and administrative accomplishments of the candidate, depending on the rank of the post. Moreover, the personality of the candidate and his/her contribution to the society are also taken into consideration.

Additionally, teaching staff of the University is classified in two categories: full time and part time. The latter are allowed to undertake outside work, such as consultations or private practices, but the Research Committee of the University reserves 15% of the income from outside work, while there exists a limit on the amount of this income that is permitted by law. On the other hand, the part time staff members are not obligated to reside in the city where the School operates, but they have to be present in the University at least two days per week. In this case the monthly salary they receive is equivalent to 70% of that of the full time staff.

In addition, the General Assembly of the School approves formal leave of absence for staff members to visit other academic institutions in Greece or abroad to gain experience in teaching or research activities that are similar to those of their own. According to the national legislation, staff members going abroad for scientific work (sabbatical leave) are entitled to

additional financial support of an extra salary per month, provided they do not receive any other remuneration from the visiting institution. Maximum allowable duration of sabbatical leave is 6 months for every 3 years of service or one year for every six years of service. Nevertheless, members of the academic staff receive very little financial support for meeting or conference attendance.

10.2 COMMENTS AND SUGGESTIONS

It is apparent that the ratio of teaching staff to students is satisfactory. However, given the heavy teaching and clinical workload, the clinical members of staff advocate that their number should be increased.

It should be mentioned that about 90% of the academic staff of the FVMT are qualified veterinarians.

According to the average national standards the salary levels of the various categories of the teaching staff may be considered satisfactory, when compared to those of other categories of State employees. However, when compared with salaries paid in industry and in practice, as well as in other EU countries, they should be considered very unsatisfactory.

Of particular concern is the decreasing number of the support staff, especially technicians and secretaries. As a result, the FVMT is forced to hire additional employees on short-term contracts from its own budget (mainly research projects and clinical income), with a negative impact on its finances. Furthermore, faculty members are burdened with administrative and technical tasks, which increases very much their workload and is a very inefficient use of their time.

The increased bureaucracy related to faculty promotion procedures results in significant delays in their promotions, which may have a negative effect in faculty psychology and work. This should become a matter of priority for the FVMT.

Chapter 11. CONTINUING EDUCATION

11.1 FACTUAL INFORMATION

The FVMT has been hosting continuing professional development seminars, wet labs, courses and conferences for veterinary practitioners, state veterinarians and medical doctors, for many years. These continuing education courses are organized by the Faculty alone or in association with various veterinary and medical societies, organisations and pharmaceutical companies. The facilities of the Faculty are also used for continuing education courses for veterinary practitioners, state veterinarians and medical surgeons, organised by other bodies.

More specifically:

1. Continuing Professional Development courses and wet labs for veterinary practitioners or state veterinarians are organised regularly on topics including:
 - Small animal emergency procedures
 - Small animal anaesthesia & intensive care
 - Large animal hoof surgery
 - Animal breeding, husbandry and nutrition
 - Small animal diagnostic imaging & ultrasonography
 - Gastrointestinal endoscopy
 - Laboratory animal husbandry and healthcare
 - Reproductive problems in production and companion animals
 - Small animal clinical neurology
 - Small animal dermatology
 - Small ruminant medicine
2. Continuing Professional Development courses and wet labs, in association with the AUTH Faculty of Medicine and other national medical surgical societies, addressed to general and thoracic surgeons. These include:
 - Laparoscopic wet labs in pigs for human general surgeons
 - Thoracoscopic wet labs in pigs for human thoracic surgeons
 - Stapling wet labs in pigs for human general surgeons
3. Also every year FVMT is involved in organizing wet labs in association with various veterinary clinical associations, on several topics of interest to practicing veterinarians, including:
 - Small animal orthopaedic surgery
 - Small animal dermatology wet labs
4. Recently, FVMT has established a formal cooperation with the Hellenic Companion Animal Veterinary Society, in order to co-organize seminars and workshops on various topics. In addition, a member of the academic staff of the companion animal clinic is responsible for the organization of a series of workshops in various venues around Greece, in cooperation with the Hellenic Veterinary Medical Society. Finally, a similar long-standing cooperation exists

with the Association of Veterinary Surgeons of Northern Greece, based in Thessaloniki.

In addition, members of the academic staff, especially of the Departments of Clinical Sciences and Food Hygiene and Technology, are invited to present lectures in many congresses/seminars/refresher courses etc. organised by relevant professional bodies and organizations all over Greece. Moreover, many faculty members participate frequently in the organising and/or the scientific committees of such activities. Several members of the Production Animal Clinic, and the Department of Animal Production are often invited to speak on various topics to members of local associations of farmers, animal breeders etc. Finally, Faculty members have been invited to speak to refresher courses for veterinary practitioners and/or veterinary authorities in foreign countries.

Over the last year 5-6 years, the FVMT has organized an average of 3-4 continuing education courses each year, and many other courses co-organised with or organised by external organisations, where staff members of the FVMT are the main speakers.

11.2 COMMENTS AND SUGGESTIONS

As mentioned in Chapter 1, among the aims of the FVMT is to provide the means for lifelong learning and to contribute to continuous professional development of veterinarians in Greece and abroad. Towards this goal the FVMT is organising or its members are participating in high quality continuing education programmes. These programmes are very popular among practicing veterinarians, as evidenced by the large numbers of participants. Except for the workshops/wet labs where the number is limited, refresher courses are usually attended by large numbers of practitioners. The FVMT is the main “source” of speakers for such activities in Greece. Support provided by local pharmaceutical and other companies is invaluable. Furthermore, such activities also contribute to the increase of the income of the FVMT.

FVMT should continue this active involvement in continuing education to the benefit of both its staff and the veterinary professionals in Greece.

Chapter 12. POSTGRADUATE EDUCATION

12.1 FACTUAL INFORMATION

12.1.1 CLINICAL SPECIALTY TRAINING (INTERNS AND RESIDENTS)

Table 12.1.1 Clinical specialty training

Clinical discipline	Nr interns	Title anticipated	Nr residents	Diploma or title anticipated	Nr Trainees**	Diploma or title anticipated
Small Animal Internal Medicine	8	Certificate of attendance	-	-	4	Diploma of Postgraduate Specialisation
Veterinary Clinical Pathology	5	Certificate of attendance	-	-	-	
Veterinary Radiology	1	Certificate attendance	-	-		
Ophthalmology	1	Certificate attendance	-	-		
Exotic Animal Medicine	1	Certificate attendance	-	-	-	
Small Animal Surgery & Obstetrics	2	Certificate attendance	-	-	11	Diploma of Postgraduate Specialisation
Equine Medicine & Surgery	2	Certificate attendance	-	-	-	
Veterinary Anaesthesia & Analgesia	1	Certificate attendance	3	Dip ECVA*		
Veterinary Dermatology	-	Certificate attendance	3	Dip ECVD*	-	
Large Animal Medicine, Surgery & Reproduction	5	Certificate attendance	-	-	-	

*: Certified by the EBVS

** : Small Animal Surgery and Internal Medicine each offer a 2-year programme of postgraduate clinical training, which leads to a Diploma of postgraduate specialisation (equivalent to MSc)

Interns and residents receive no grant or salary, however they do not pay any fees. Furthermore, the clinic covers all expenses of residents and PhD students incurred in relation to their training, research and publications.

12.1.2 RESEARCH EDUCATION PROGRAMMES

Table 12.1.2 Number of research students enrolled in different programmes

Type of degree	Full time	Part time	Duration
PhD	61	-	3-6 years*

MSc in Farm Animal Breeding & Medicine	12/year	-	2 years
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* Holding an MSc diploma (or equivalent postgraduate clinical training, see table 12.1.1) is a prerequisite for pursuing a PhD. In exceptional cases and at the discretion of the Faculty, non-MSc holders may pursue a PhD but in these cases the duration of the PhD programme should be at minimum 4 years (6 years at maximum); The Internal Regulations for the fulfillment of a Doctorate (PhD) and Masters (MSc) thesis are given in Appendices III (pp 205-213) and IV (pp217-227), respectively.

A very small number of students are supported financially by grants from the State Scholarship Foundation, AUTH, or other research grants. Students pursuing a PhD in the Clinics, most often also do clinical work on the subject of their thesis (e.g. surgery, anaesthesia/intensive care, ophthalmology, obstetrics etc.) and participate in teaching. In return, all their research expenses are covered by the clinic.

No minimum publication requirements for awarding a postgraduate degree exist at the FVMT. Publication of thesis findings in internationally refereed scientific journals prior to its completion is, however, viewed very favorably during the evaluation of the thesis.

The number of PhDs awarded by FVMT during the last five years is shown in Table 12.1.3.

Table 12.1.3 Number of PhDs awarded by FVMT in 2006-2010

Year	2006	2007	2008	2009	2010
No of theses	18	6	15	10	10

12.2 COMMENTS

The number of postgraduate diplomas, PhD and certificates awarded annually could be considered as satisfactory.

There is an increased demand for postgraduate research or postgraduate training (especially clinical) programmes. Approximately 10% of the total number of students graduating each year are participating in postgraduate research training programmes. If the number of interns or students working towards an MSc or European Diploma is taken into account, the percentage rises to greater than 25%. It should be noted that the number of applicants for any position of postgraduate education, especially in clinical subjects, is much greater than the number of places offered.

12.3 SUGGESTIONS

The number of scholarships provided to research students should be increased towards a final goal of every postgraduate student being completely supported financially by a scholarship or research grant, for the entire duration of their studies.

There is a need for increasing EBVS recognized residency programmes by encouraging existing Diplomates to apply to have their center approved. In addition, more members of the academic staff need to apply to obtain the Diplomate status. Young veterinarians should also be encouraged to follow residency programmes organised by the various European Specialty Colleges.

Chapter 13: RESEARCH

13.1 FACTUAL INFORMATION

Research in the FVMT is coordinated by its Research and Ethics Committee. All research projects in the FVMT are conducted by the faculty members or by the students enrolled in PhD or MSc programmes, under the supervision of faculty members. Research is often performed in cooperation with outside veterinary or other bio-medical researchers. However, there are no staff members holding purely research positions.

The FVMT makes a significant contribution to the quantity and quality of research conducted within the Aristotle University of Thessaloniki. This contribution is also evident in the satisfactory level of research productivity through international collaborations, and in the number of influential publications in peer-reviewed journals. The research work carried out in the FVMT reflects its multidisciplinary character, covering in a balanced way basic, applied and clinical research.

Education should rest on evidence-based knowledge, which is best gained by conducting research, either applied or basic. Therefore, involvement in active research enhances students' professional skills, and sharpens their skills of critically evaluating scientific articles. Moreover, this involvement enlarges the pool of students interested in undertaking an MSc or a PhD after completion of their studies. While the primary focus of the FVMT is to train veterinary students, one of the parallel goals and commitments is to encourage undergraduates to get involved in research.

Over the past few years, a University-wide programme provided an opportunity for undergraduate students to receive some financial assistance for conducting research under the supervision of a faculty member. Unfortunately, the number of students supported this way is very small. However, a number of students is involved in research, mainly by assisting in the experimental work of ongoing research projects, in the various Laboratories and Clinics of the FVMT. Although it is difficult to estimate the exact percentage of undergraduate students involved in scholarly research and the time spent, some assumptions can be made by considering the number of papers published in peer-reviewed journals and/or presented in international conferences, in which a student is a co-author. In particular, during the last three years 7 such research papers have been published in international peer-reviewed journals, while 5 presentations have also been made in Greek and/or international conferences. Another research project was presented at the Faculty.

Acquaintance of students with research is also attempted through the organization of seminars given by academic staff, that are aiming at informing students about their research interests and scientific methods applied, and by providing the opportunity to undergraduates to attend public defences of PhD or MSc theses, and to participate in local scientific meetings, workshops or seminars.

In addition, during the last year of their studies students may undertake (in the context of elective courses), individually or in groups of 2-3 individuals, the preparation of a scientific article, either a literature review, a case report or a case series analysis of a clinical topic, in a form that is suitable for publication. Although it cannot be considered original research, this project allows students to get additional experience in conducting literature searches, in evaluating data and in authoring a scientific paper. Findings are summarized and are presented in front of an audience consisting of Faculty members and the students' classmates. Students are working hard to complete such projects and following completion as much as 20% in the final grade of the particular elective course is gained. During the last three academic years many such review articles have been produced. In addition, one prospective and 3 retrospective clinical studies have been presented.

13.2 COMMENTS & SUGGESTIONS

AUTH provides only limited financial support to a small number of students conducting research work in a Laboratory or Clinic under the supervision of a member of staff. Apart from that, a number of FVMT staff members engage students in their on-going research. The Faculty should encourage, more actively, student participation in research projects, under faculty supervision. This may be achieved by allocating a certain amount of money from the Faculty budget to laboratories employing students for their research. However, in view of the fact that the budget for this type of research projects would be limited, the Faculty should find other ways to support such projects, for example by collaborating with pharmaceutical or other private veterinary companies.

The FVMT should capitalize on the work of its Research & Ethics Committee to introduce a vibrant research environment where undergraduate students play a pivotal role. Collaborations with other Departments at the AUTH, as well as with National and International Institutes and private industries in the field of veterinary medicine and animal production would attract the interest and cover the curiosity of a significant number of students. Increased student participation in research may also be achieved by instituting a Faculty award for undergraduate students that conduct high quality research. It should also be understood that faculty members would also benefit from having students involved in their research since this could improve the research productivity of their laboratories and produce competitive MSc or PhD candidates in specific research fields.