Self-Evaluation Report of Veterinary Education at The Koret School of Veterinary Medicine, The Hebrew University of Jerusalem, Israel

Prepared for the Stage 1 visit of a Team of Experts from The European Association of Establishments for Veterinary Education

February 2011

Contents

PREFACE

The Koret School of Veterinary Medicine was established by a decree of the Council for Higher Education of the Ministry of Education in 1985. The school was granted autonomous status within the Robert H. Smith Faculty of Agriculture, Food and Environment of the Hebrew University of Jerusalem. The Hebrew University of Jerusalem is committed to the highest standards and is known as the best university in Israel and for many years is ranked amongst the top 100 universities in the world. University policy dictates that departments of the University regularly undergo external evaluations of research and teaching. For this reason the Hebrew University of Jerusalem was fully supportive of our request to invite the European Association of Establishments for Veterinary Education (EAEVE) for a Stage 1 visit to the Koret School of Veterinary Medicine from 21-25 February, 2011.

This Self Evaluation Report, which is the basis for the external evaluation by EAEVE provides the necessary information needed by the team of visiting experts. The Koret School of Veterinary Medicine has adopted and honours all of the directives relating to the Veterinary Profession that are published in “Directive 2005/36/EC of the European Parliament”.

We believe that we have supplied all the relevant information required by the Team of Experts. However the team should feel free to request any additional information, any additional visits to sites or institutions, any additional meetings or consultations with individuals or organizations within or outside the school and the university

Rehovot, 1 November 2010.

Prof. Shimon Harrus
Director,
Koret School of Veterinary Medicine
Hebrew University of Jerusalem

INTRODUCTION

Since the establishment of the State of Israel in 1948 until 1985 there was no facility for the training of veterinary students in Israel. A constant but decreasing number of Israeli students studied abroad and returned to Israel together with new immigrant veterinarians to comprise the veterinary work force in Israel. There was no center for basic veterinary research, veterinary continuing education and advanced veterinary training or specialty training. Veterinarians were not trained to meet the specific needs of the country. These factors lead to the eventual establishment of the Koret School of Veterinary Medicine at the Hebrew University of Jerusalem on November 28, 1985.

The Hebrew University's Koret School of Veterinary Medicine is the only veterinary school in Israel. Its primary mandate is to create a permanently evolving cadre of Israeli-trained veterinary professionals with a broad expertise in the particular climatic, zoological, and environmental conditions of the country. Students trained in Israel become thoroughly familiar with the animal health problems endemic to the region - both in regard to clinical practice and in terms of the nature of the basic and applied research that is required to understand the aetiology of those problems and how to deal with them. Likewise, the Koret School of Veterinary Medicine is mandated to improve public health in Israel and around the world by addressing animal- and vector-borne diseases especially zoonotic diseases. The School is also concerned with promoting and improving animal welfare for livestock, food production and companion animals worldwide. The Koret School of Veterinary Medicine recognizes its special responsibility to the Middle Eastern and under developed countries. The Koret School of Veterinary Medicine is an independent school but an integral part of the Robert H. Smith Faculty of Agriculture, Food and Environment whose mission is to focus on "feeding the world".

The Koret School of Veterinary Medicine at the Hebrew University elected to follow the American system of Veterinary Education which involves a 3 year pre-veterinary programme (B.Sc. degree in life sciences) followed by a 4 year veterinary programme. The total programme takes at least 7 years. Currently, the school admits 55 new students each year. Israeli veterinary students are amongst the top students in the Hebrew University. They are generally older than most veterinary students around the world as they reach veterinary school after at least 2 or more years of army service and then a year off for travel or work, and 3 years for the completion of a B.Sc. degree. So, students entering veterinary school are aged 25-30 years. Like most schools in the USA and Europe, the number of female students exceeds 75%. Presently, the number of active veterinarians in Israel is about 1,200. The Koret School of Veterinary Medicine

has now graduated more than 600 veterinarians, so locally trained veterinarians now account for more than half the total veterinary work force in Israel.

The Koret School is acknowledged to be responsible for important innovations and new dimensions in veterinary clinical practice and research in Israel and has raised the standards of veterinary care throughout the country. Likewise, through collaborative research with partners in neighbouring countries and around the world, the Koret School of Veterinary Medicine is actively contributing to the improvement of animal medicine, animal welfare, food production, and public health in the region and around the globe. The school has now become accepted as the center for all veterinary, undergraduate, graduate and post graduate training in Israel, as well as for veterinary research and veterinary continuing education.

The school is comprised of two basic units:

1. **Basic Science** & **Pathobiology** – this unit includes the departments of anatomy, physiology, pharmacology, toxicology, pathology, clinical pathology, microbiology, virology, parasitology and epidemiology.
2. **Clinical Sciences** – this unit includes the different clinical disciples (i.e. Food producing animal medicine, small animal medicine, exotic animal medicine, food hygiene and animal welfare). The clinical training takes place at the Veterinary Teaching Hospital and extramural veterinary facilities all over the country.

While the first unit is located in the Hebrew University, Robert H. Smith Faculty of Agricultural, Food and Environment campus in Rehovot, the teaching hospital is located 10 kilometres away at the Ministry of Agriculture Centre in the city of Rishon Lezion. Extramural facilities in different places in the country (mainly in the center) are being used.

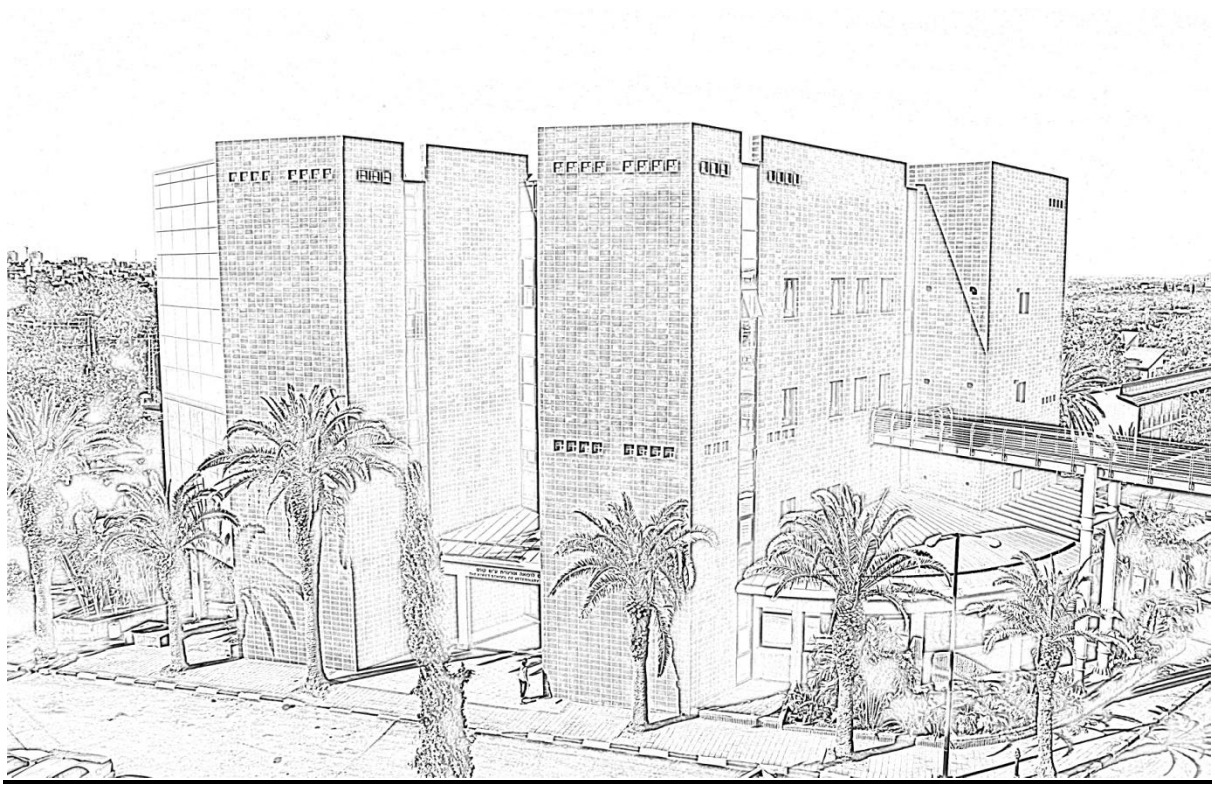
Research at the Koret School of Veterinary Medicine involves a broad range of basic and applied topics in veterinary science, including infectious and zoonotic diseases that have serious implications for public and animal health; pathogenesis of vector-borne diseases (e.g. West Nile fever, Epizootic hemorrhagic disease, leishmaniasis, ehrlichiosis, bartonellosis); immunology; pathogen-host interactions; development of new vaccines; molecular evolution and ecology; developmental biology; biomechanical properties of bone; mechanisms responsible for epilepsy in animals; the pathogenesis of glaucoma and age-related macular degeneration (AMD); veterinary pharmacological research, slow release preparations for drug administration through the gastrointestinal tract and veterinary oncology.

The curriculum of the Koret School of Veterinary Medicine includes preclinical and clinical courses leading to a Doctor of Veterinary Medicine (DVM) degree. The last year at the Koret School is a 12-months (equivalent to 3.5 semesters) clinical year comprising rotations through the various departments in the hospital as well as external rotations. The School also offers one-year internship programs for new graduates, three-year residencies in various specialties, externship programs for foreign students, continuing education programs for practicing veterinarians, special courses for new-immigrant veterinarians and a veterinary nursing programme. In addition, the school offers MSc and PhD programmes as well as Post doctoral training. In an independent international academic review conducted in 2007, the Koret School received superlative commendations for the significant increase in the quality and excellence of its educational and research programs.

The Veterinary Teaching Hospital opened its doors in 1988. Right from the beginning it became the heart of the Koret School of Veterinary Medicine of the Hebrew University. The hospital provides clinical training to veterinary students through the years (especially in the final year), serves as the leading primary care and veterinary referral centre in Israel, and acts as a positive stimulus for raising the level of clinical veterinary medicine throughout the profession in Israel. In the past 20 years, since the hospital's inception, it has made tremendous progress in all aspects of its activities. The staff includes 45 clinicians, 22 of whom are internationally recognized specialists/diplomates (board certified by the American or the European Veterinary Specialization Colleges). The school now has specialists in Small Animal Internal Medicine, Small Animal Surgery, Neurology, Ophthalmology, Cardiology, Oncology, Pharmacology and Toxicology, Clinical Pathology, Emergency and Intensive care medicine, Bovine Health Management, Equine surgery, Equine Internal Medicine and Dermatology. The primary strength of the hospital has always been its dedicated, motivated and extremely highly-qualified staff - clinicians, technicians and support staff. Several members of the staff serve on the boards of national and international organizations, editorial boards of international journals, are invited speakers at professional and scientific international meetings; they present cutting-edge research, publish scientific papers in leading scientific journals and compete successfully for international research grants.

1

Objectives



Chapter 1. OBJECTIVES

1.1 FACTUAL INFORMATION

The School of Veterinary Medicine at the Hebrew University of Jerusalem is solely responsible for the training of veterinarians in Israel. The school provides high-quality undergraduate education in veterinary medicine and also offers further professional and scientific post-graduate education as well as continuing education and the training of veterinary nurses. The veterinary programme is a broad based programme that considers the entire chain of food production, “from farm to table”. There is an emphasis on zoonotic diseases as well as on the high-standard of veterinary care of individual animals. Most importantly, the curriculum aims to fulfil the EU requirements for veterinary training (EUDirective 2005/36/EC) with adjustments for local conditions. This directive outlines the principles of veterinary education. Education is based on scientific grounds as well as proven experience and provides students with adequate learning opportunities, thus preparing the foundation for life-long learning

The basic objectives of the Koret School of Veterinary Medicine are listed below. These objectives are determined by the Director of the school in consultation with the School’s Academic Planning and Development Committee. This committee meets 2-3 times each year and changes to the list of objectives are made only on rare occasions. The objectives are:

1. To train high quality, compassionate veterinary students well versed in modern veterinary knowledge and techniques towards a DVM degree and as professionals with high integrity, placing a special emphasis on the specific needs of the region, so that they will be able to meet the present and future demands for their professional services.
2. To perform research and provide instruction in the newer dimensions where contributions of veterinary medical knowledge are of great value, through the development of veterinary post-graduate courses (M.Sc., PhD, Post doctorate), as well as DVM/M.Sc. and DVM/PhD tracks designed to train students in state-of-the-art research in veterinary science and related areas.
3. The School recognizes its special responsibilities to Middle Eastern and other underdeveloped countries. It plans to provide humanitarian and educational leadership at a very exciting time in the history of the veterinary profession, when, more than ever before, veterinarians are being called upon to solve health, food shortage and environmental problems that confront the nation and the world.

4. The school strives to become the leading centre for veterinary education, continuing education and veterinary research for the country and the entire Middle East.
5. To become recognized as one of the top veterinary schools in the world.

The Hebrew University of Jerusalem demands regular international reviews of all faculties and schools every 5 to 6 years, in order to assess the achievements of the faculties or schools. These visits also determine to what extent the school meets its objectives and may make recommendations for changes. The most recent international scientific review and site visit took place in November 2007.

1.2 COMMENTS

Assessment of the achievement of objectives

With respect to objective 1 above we believe that we are to a large extent successful in training veterinary students well versed in modern veterinary knowledge and with high integrity, able to meet the present and future demands for their professional services. This is supported by the feedback we have received from local practitioners who have employed our graduates. Also, our graduates have competed very successfully in obtaining residency positions abroad and have proved in many cases to be the leading residents in those schools. Many now serve on international committees and examination committees of specialty colleges.

With regard to research, our school has made rapid strides in developing an active research programme and obtained highly competitive prestigious grants. The number and value of grants per researcher is the highest in the Faculty of Agriculture. The level of research and the list of publications is excellent and researches are often invited to speak at international congresses.

As far as our objective to make a contribution to the region, we have in spite of political tensions and reluctance for cooperation in the region been able to interact on both a formal and individual basis with colleagues in neighbouring countries (Egypt and Jordan) and to establish joint research projects with veterinarians in the Palestinian Authority.

We have successfully become the leading centre for all veterinary education, continuing veterinary education and para-veterinary education (veterinary nurses) in the country and are authorised by the Chief Veterinarian of the Ministry of Agriculture to offer upgrading courses to new immigrant veterinarians, courses for the veterinary licensing examination and courses for a soon to be introduced licence renewal programme for small animal practitioners.

We continue to strive to improve with the ultimate goal of becoming one of the best schools of veterinary medicine in the world.

Main strengths of the School.

The new research building now offers the researchers excellent facilities and equipment for research. It also offers the most modern anatomy teaching laboratory. It offers spacious and comfortable facilities for research students and 2 conference rooms. This coupled with the now well established research teams of basic researchers and clinician researchers will further strengthen an already very good research team.

The Veterinary Teaching Hospital has undergone partial renovation and has acquired funds for construction of a new Emergency and Critical Care unit as well as a new auditorium for teaching. The hospital now has 22 international specialists (17 European board certified Diplomates and 5 American board certified diplomats) and 4 Israeli certified specialists, a total of 26 specialists, covering 14 different disciplines. This team provides a clinical service of an extremely high standard by any criteria.

One of the main strengths of the Koret School of Veterinary Medicine is the quality of its students and teaching staff. The selection process for students is based mainly on academic merit and the students at the Koret School of Veterinary Medicine are continually being referred to as being amongst the best students in the Hebrew University of Jerusalem. They are also more mature and demanding than regular students, having graduated high school at the age of 17 or 18, spent 2 or more years of army service followed by a year off, a BSc. degree, meaning that they enter veterinary school in their late twenties.

A very good teacher/student ratio. This is due in part to the relatively low number of students. A modern undergraduate curriculum with relatively young well trained teachers resulting in a very good teacher/student relationship.

We offer a wide range of specialty residencies certified by the American or European colleges as well as a DVM/MSc or DVM/PhD programme.

Main weaknesses of the School

This is a young school which still has to develop in many ways and traditions. Some of the staff are still very young and lack experience which plays an important role in the school's stature.

The clinical research programme lacks financial support as almost no grants for veterinary clinical research are available.

Clinicians have, in addition to a heavy clinical load a significant teaching load and serve on various committees. This is very demanding and sometimes overpowering.

The distance between the school and Veterinary Teaching Hospital although small is sometimes problematic when clinicians on duty have to visit the Rehovot campus for meetings or teaching and then return to continue their clinical responsibilities.

Although funding and positions are available the school is finding it hard to attract basic veterinary researchers due to the shortage of adequately qualified candidates, especially those that are also trained as veterinarians.

The Veterinary Teaching Hospital has many specialists but is unable to recruit a specialist in veterinary diagnostic imaging which is a very important service needed by many of the departments.

1.2 SUGGESTIONS

The School of Veterinary Medicine and Veterinary Teaching Hospital should continue its efforts to select only outstanding students and staff members for positions in the school and hospital. A 5 year plan should be developed with a fixed time schedule and implementation should commence as soon as possible as outlined in the Vision for the Future Report which was prepared and recently submitted to the President of the University.

2

Organization

Chapter 2. ORGANIZATION

2.1 FACTUAL INFORMATION

Details of the school

Name of the School: The Koret School of Veterinary Medicine

Address: P.O. Box 12, Rehovot 76100, Israel

Telephone: +972-8-9489021

Fax: +972-8-9467940

Email: Ksvm@agri.huji.ac.il

Website: http://ksvm.agri.huji.ac.il

Title and name of the head of the school

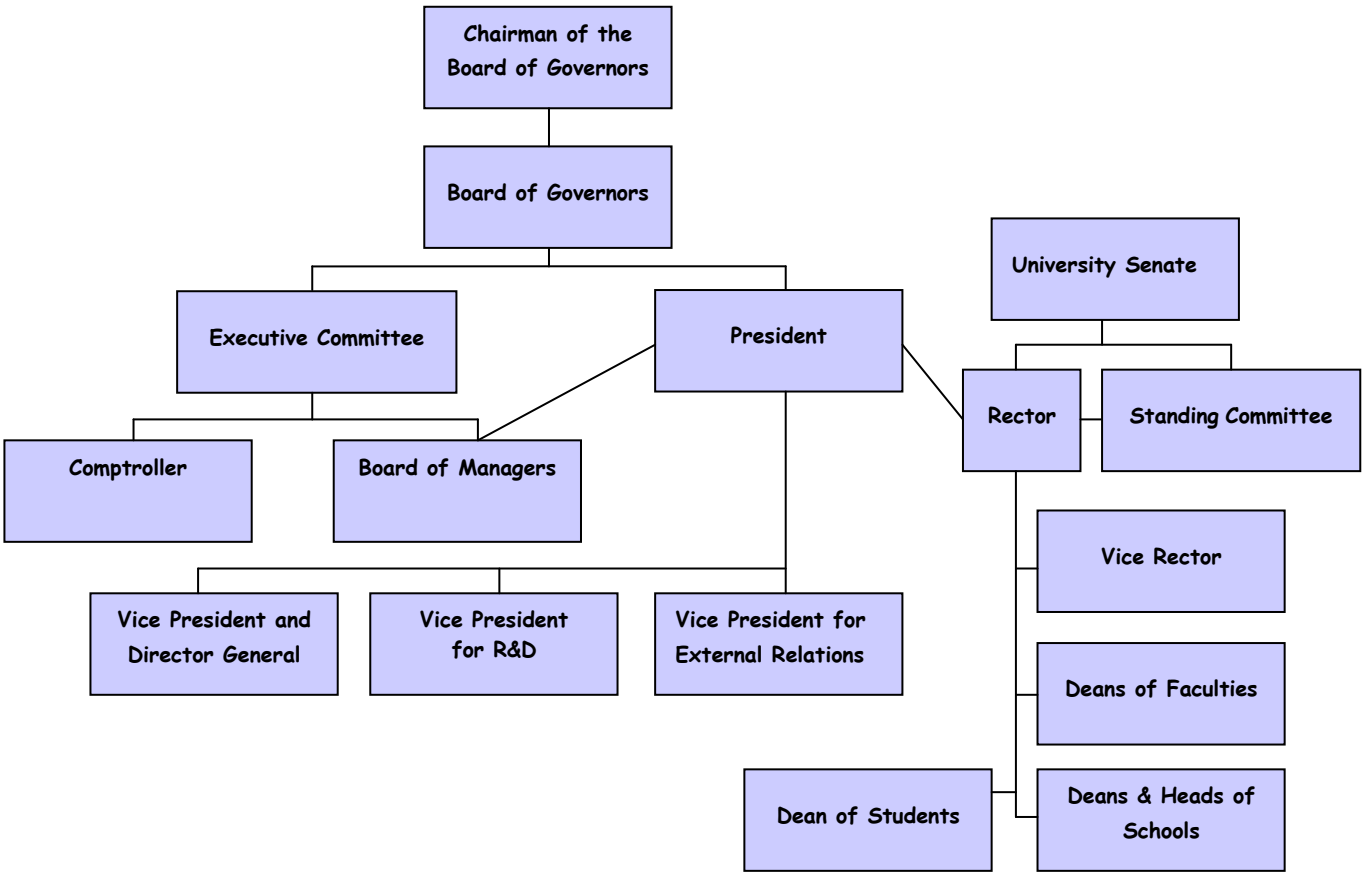
Prof. Shimon Harrus, DVM, PhD
Koret School of Veterinary Medicine
P.O. Box 12,
Rehovot 76100,
Israel

2.2. OFFICE BEARERS AND AUTHORITY

The Hebrew University of Jerusalem is governed by a Board of Governors and administered by the President. The President has overall responsibility for University Affairs; the Rector is responsible mainly for academic affairs while the Director General is responsible mainly for administrative affairs. Together they form the committee responsible for all major decisions of the university.

The President - Prof. Menachem Ben Sasson
The Rector - Prof. Sarah Stroumsa
The Director General – Ms. Billy Shapira

Structure of University



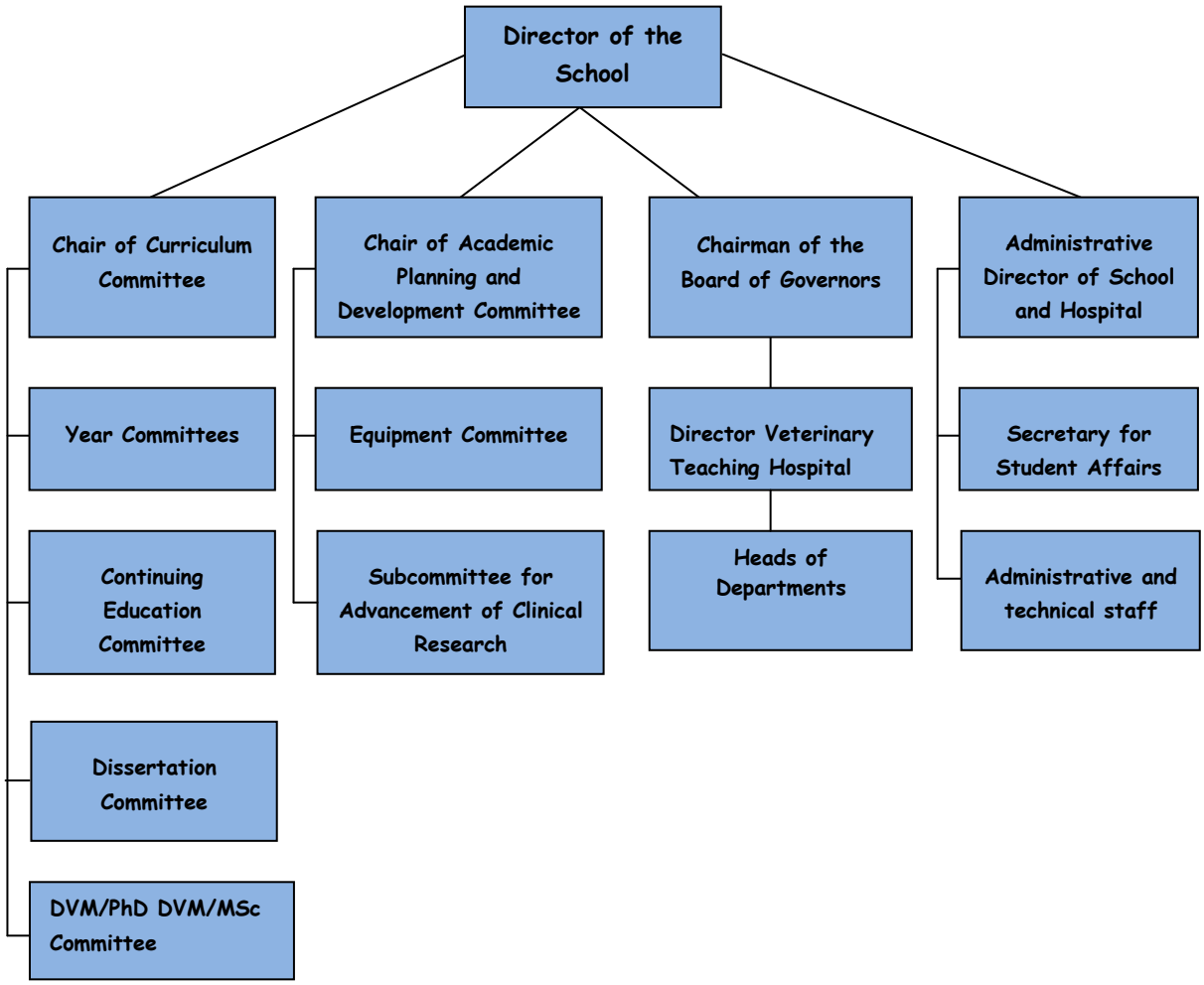
The head of the Koret School of Veterinary Medicine is like other heads of autonomous schools and Deans responsible directly to the Rector. However, as an independent school the head of the school may have direct contact with the President and Director General.

The Koret School of Veterinary Medicine was established as an autonomous school within the administrative framework of the Robert H. Smith Faculty of Agriculture, Food and Environment of the Hebrew University. Several such schools exist in the Hebrew University of Jerusalem. This autonomy includes an independent budget, independence in determining the curriculum and academic development plans, independence in making faculty appointments, and independent committees that run the school and hospital.

The School of Veterinary Medicine is administered by a Director who is assisted by the administrative director, 4 secretaries, the director of the veterinary teaching hospital and various committees. The Director of the school is the person in charge for the day to day running of the school. The Director is responsible to the Dean of the Faculty of Agriculture and the University Administration (President, Rector and General Director). He is elected by the Council of the School according to the constitution for election of Deans which calls for a search committee to filter candidates and make recommendations of candidates for elections. The day to day running of the school is administered by;

Director of School - Prof. Shimon Harrus
Director of Veterinary Teaching Hospital - Prof. Ron Shahar
Administrative Director- Mr. Andrei Ianc
Chairperson Planning and Development Committee – Prof. Gad Baneth
Chairperson Curriculum Committee – Dr. Merav Shamir

Structure of the school



2. Major Committees

The Director of the school is by virtue of his appointment a member of all major committees.

1. Curriculum Committee

a. Chairperson, Dr. Merav Shamir

b. Charge

The curriculum committee's main function is determining and implementing the teaching program of the school. In addition the committee is responsible for evaluating the standard of courses and teaching at the school. From time to time the committee recommends revising certain courses and curricula, it also proposes the introduction

of new courses and the cancelling of unnecessary courses. The committee is also responsible for the examinations in all 4 years. It debates specific academic issues regarding failure and passing of students. The chairperson of the curriculum committee and the head of each year committee meet once or twice every semester with each class and then reports to the curriculum committee on the students' impressions of each course. The post graduate studies (M.Sc., PhD programs) are being held at the school under the umbrella of a combined teaching program for the Koret School of Veterinary Medicine and Animal Sciences Department of the Faculty of Agriculture.

2. Year Committees

Head, First Year Committee, Dr. Gila Zur
Head, Second Year Committee, Dr. Gilad Segev
Head, Third Year Committee, Dr. Gillian Dank
Head, Fourth Year Committee, Prof. Itamar Aroch

b. Charge

The year committees serve as extensions of the curriculum committee. They are comprised of the course coordinators of main courses in each specific year. The year committee heads are in day to day contact with the students' representatives (2 per year). The year committees meet whenever needed (at least twice per semester) and discuss relevant curriculum issues. Their heads are members of the curriculum committee. Issues that need immediate solutions and day to day issues are discussed by the year committees. All major decisions are discussed with the curriculum committee chair, and those needing a more significant discussion are transferred to the curriculum committee.

3. Continuing Education Committee

a. Chairperson, Prof. Hylton Bark

b. Charge

The Continuing education Committee is a subcommittee of the Curriculum Committee and is charged with the planning and organization of continuing education courses for local veterinarians, new immigrant veterinarians, and foreign veterinarians and for courses to prepare veterinarians for the licensing examination. In addition when guests from abroad visit for formal teaching purposes they are frequently requested to present continuing education courses as well. The Director of Veterinary Services for the Ministry of Agriculture has recently agreed that all

continuing education in the realm of Public Health will only be recognized if it is planned and organized by the School of Veterinary Medicine.

4. Graduate Students Committee for the DVM/M.Sc. and DVM/PhD tracks..

a. Chairperson, Dr. Gila Kahila Bar-Gal

b. Charge

The DVM/M.Sc. and DVM/PhD are 2 new programs that were initiated by the school in 2004. These are demanding programs for excellent DVM students only. By extending their studies duration and supporting these bright students with a lot of flexibility and financial support, we aimed at encouraging DVM students to perform cutting edge research relevant to the veterinary medical profession and increasing the research capacity at the school. The training that they receive enhances their abilities to become excellent scientists in the future and prepares them for an academic career.

5. Academic Planning and Development Committee

a. Chairperson, Prof. Gad Baneth

b. Charge

The aims of the committee are to establish the primary areas of research at the school, to direct and recruit the staff needed for teaching and research, and to create protocols and academic bylaws relevant to the academic development and planning. In addition, the committee is responsible for the allotment of research and office space.

5a. Subcommittee for advancement of clinical research

a. Chairperson, Prof. Itamar Aroch

b. Charge

To advance clinical research at the Veterinary Teaching Hospital. To nominate advisors for junior clinical academic staff and to assist and guide them in performing research.

6. Final Dissertation Committee

a. Chairperson, Dr. Yuval Gottlieb

b. Charge

This committee's task is coordinate the selection of students' final research theses, to approve projects and supervisors and to facilitate the writing and reviewing process. The final thesis requires that the students define a question or a problem which is preferably related to the field of veterinary medicine (but not obligatory). They have to plan their objectives, methods, data collection and method of analysis in advance and then prepare a proposal which suggests a way to solve the research problem. They are then required to perform the study under the supervision of their supervisor and often perform the project in his/her laboratory. Then, they are required to analyze the results and discuss them with respect to the current knowledge in the specific field.

Several types of theses are accepted:

1. Prospective and retrospective studies of clinical cases that were treated in the hospital.
2. Experimental studies that aim to study the immune responses, pathological processes, clinical entities or others. When necessary the approval from the Ethics Committee for Animal Experimentation is required at the time of proposal submission.
3. Laboratory experiments in order to better understand various scientific aspects in life sciences.
4. Epidemiological surveys which are based on laboratory and clinical data.
5. Meta-analyses which relate to specific questions or problems.
6. Any other subjects which may be the initiative of the student and is accepted by his/her mentor and approved by the Dissertation Committe.

The committee members meet every 3 months and discuss the proposals. Thereafter, a letter with suggested corrections or approval is sent to each student and their mentor. Completed theses are sent to the head of the committee and then sent to two reviewers. When a thesis returns from the reviewers, it is sent to the student with suggested corrections or with a final grade which is based on the grade that was given by each of the two reviewers and by the mentor with the respective weights of 40%, 40% and 20%.

2.3. PHYSICAL FACILITIES

Physical Plant

The Koret School of Veterinary Medicine is currently located on two campuses: one in the Robert H. Smith Faculty of Agriculture, Food and Environment at Rehovot and the other in the Agricultural Centre Campus in Beit-Dagan, 10 Km. from Rehovot. The veterinary school in the Rehovot campus was established in 1985 but the actual School building construction was started in 2006 and completed in 2010. This is a four-story (a total area of about 4,000 square meters) red brick, steel and glass building, which was planned by the architect Sherman Tzadok and was built with the help of the generous donations of the Koret foundation, Robert H. Smith and the Taylor family as well as matching funds raised by the university.

The entrance level (a total area of 1,000 square meters) houses the management and administration offices, school secretaries, a board room, seminar rooms, faculty offices and the anatomy laboratory. The latter anatomy laboratory is a unique facility that was pre-designed to become a modern sophisticated anatomy laboratory. The laboratory itself contains ten dissection tables that are connected to a ventilation and extraction system for keeping odours and hazardous vapours to a minimum and maintaining a user friendly environment. The laboratory contains a computer classroom with 16 stations with computer aided instruction in comparative anatomy.

The 2nd, 3rd & 4th floors (2,800 square meters) are dedicated for research. They house laboratories, communal research equipment areas, researchers' offices and students' study areas. Each floor serves 8-12 researchers. Laboratories included are: laboratories for the study of infectious diseases, veterinary pathobiology, veterinary genetics, veterinary ophthalmology, veterinary pathophysiology and pharmacology, neurophysiology as well as a biomechanics laboratory, a tissue culture laboratory, microscopy laboratories, darkrooms and thermally insulated facilities. An Insectarium is included in the basement, and an SPF animal facility (accredited by the Association for Assessment and Accreditation of Laboratory Animal Care (AALAC) is located on the second floor.

The Veterinary Teaching Hospital

The Veterinary Teaching Hospital is located at the Agriculture Centre in Rishon Le-Zion. The hospital is located near the Governmental Veterinary Diagnostic Laboratories (Kimron Veterinary Institute) and the Government Horticultural Research Institute (Volcani Institute). Adjacent to these institutes The Ministry of Agriculture provided land for the construction of the Veterinary Teaching Hospital of the Hebrew University of Jerusalem. The reason for choosing this site was to allow for the Koret School of Veterinary Medicine to utilize facilities of the Kimron Veterinary Institute, use personnel

for teaching and enter into joint research projects. The site is also closer to the center of the country which has a larger pet animal population but is still surrounded by farms belonging to Kibbutzim and Moshavim (agricultural communities).

On this campus the Koret School of Veterinary Medicine has its Veterinary Teaching Hospital. The Veterinary Teaching Hospital has 2 floors:

Ground floor - Veterinary Teaching Hospital and teaching auditorium.

First floor - Classrooms, seminar room, laboratories, student facilities, library and faculty offices.

This facility at the Agriculture Centre encompasses a site of 14,120 m^2 and buildings of about 4,500m^2.

Libraries

By the virtue of the fact that the Koret School of Veterinary Medicine is located at 2 different campuses of the Hebrew University and also uses facilities of the Kimron Veterinary Institute, the library facilities are situated at 3 different sites: one library at the Robert H. Smith Faculty of Agriculture, Food and Environment, the second at the Kimron Veterinary Institute and the third at the Veterinary Teaching Hospital (for more details see chapter 8.)

Computer classrooms

The veterinary students have access to 2 computer classrooms. One classroom is located at the Veterinary Teaching Hospital and contains 10 computers. This classroom is open 24 hours a day throughout the year. The second is the Agriculture Faculty computer classroom. It is a big classroom that serves all students of the Faculty of Agriculture and contains 60 computers. In addition, a new Anatomy Computer Class was opened in 2006 at the Anatomy Hall. The class contains 16 computers using teaching software such as “Virtual Canine Anatomy” and the “Radiology Anatomy Program”.

2.4 COMMENTS

The organizational system now in place at the Koret School of Veterinary Medicine seems to be working well. However, this is a relatively new system introduced by the new director 3 years ago.

2.5 SUGGESTIONS

The new organizational system still has to be tested. We propose to continue monitoring and evaluating this system over time. However, when significant issues are found changes and corrections to the organizational system will be implemented immediately.

3

Finances

Chapter 3: FINANCES

3.1 FACTUAL INFORMATION

The Koret School of Veterinary Medicine receives funding from a variety of sources including government funding via the University budget, through competitive and non-competitive research grants and via fund raising. In addition, the school provides sophisticated veterinary services to the public and produces a significant income which is a supplement to the budget. The Koret School of Veterinary Medicine functions as an independent school within the Agriculture faculty. This status allows the school complete autonomy on the it's budget which is allocated directly from the university to the school and not through the Faculty of Agriculture. It is important to emphasise that due to the fact that the school is located in the campus of the Agricultural Faculty, it benefits from Faculty administrative services such as infra structure, accounting and manpower. For these services the school pays the faculty an overhead of 7.5% from its own budget. The university also covers the cost of basic infrastructural items such as; security, electricity, water, communications, cleaning and maintenance. The estimated cost of these items appears in Table 3.1 under ”To university administered outside the Faculty”.

3.1.1 GENERAL INFORMATION

Funding to the Koret School of Veterinary Medicine must be placed in the context of how all Israeli universities are financed and how the Hebrew University allocates funds to its departments and faculties. The Hebrew University receives its funding from the Council for Higher Education of the Ministry of Education. The amount of funding received by the Koret School of Veterinary Medicine is based on a model devised by the President of the Hebrew University of Jerusalem. This model is influenced by the number of veterinary students (DVM) and post-graduate students (master’s and doctoral students) graduating each year, the annual number of frontal teaching hours and laboratory teaching hours, the number of tenure track positions, competitive and non-competitive research grant proposals submitted and awarded. The formula also takes into account the number of years it takes each student to graduate. This formula is differential and encompasses ten categories ("hard science" vs. humanities) that takes into account actual cost differences of education. Additional parameters influencing the final budget are the value of external competitive and non competitive research grants funded. Basically, the per student budgetary allocation for veterinary and medical students is the highest in the Hebrew University.

The School, including the Veterinary Teaching Hospital has additional sources of income such as a significant income generated by the Veterinary Teaching Hospital from veterinary services, income from continuing education courses as well as independent fund raising and fund raising by the international friends of the Hebrew University of Jerusalem and from philanthropists.

This model alone does not adequately meet the needs of the veterinary school as it does not take into account the large costs involved in maintaining a modern sophisticated Veterinary Teaching Hospital. However, considering all the items mentioned above we are provided with a satisfactory budget. There is no specific allocation of university funds for the construction of new buildings. These are achieved through the recruitment of funds from private or public donors. Major items of equipment are purchased through funding obtained from research grants, university start-up funds which are made available to new recruits, university participation of up to 50% for certain items of equipment, donations recruited by the school administration, and by income of the Veterinary Teaching Hospital. The university also provides funds for an interdepartmental laboratory of expensive equipment that is made available to all researchers.

In 2010 this model will undergo certain modifications and will be based primarily on 3 major parameters; 1. Research – submission and success in acquiring competitive research grants. 2. Teaching – number of teaching hours. 3. Number of students.

Tuition fees

All students at Israeli universities pay the same tuition fees; irrespective of the subject and the degree programme studied. The tuition is determined by the Ministry of Education and is a uniform sum for all students. Presently, the annual tuition fees are capped at US$3,000/year. Scholarships, bursaries and student loans are available according to socio-economic conditions of the student and according to academic performance (excellence).

3.1.2 INFORMATION ON EXTRA INCOME

The veterinary teaching hospital functions as a registered non-profit organization and does not give any of its income back to the university or faculty. The school pays the university an overhead of 20% on research grants.

3.1.3 OVERVIEW INCOME (REVENUE) AND EXPENDITURE

Table 3.1: Income/Revenue (New Israel Shekels)

	State (government)		Income generated by the Faculty		
Year	To university administered outside the Faculty	Direct to Faculty	Income from services provide	Research	Total
2009*	3,077,275	15,718,466	15,906,559	2,310,056	37,012,356
2008	3,000,000	16,699,273	14,095,331	2,094,235	35,888,830
2007	3,000,000	16,605,750	12,756,824	1,558,476	33,921,050

*year prior to visitation

Table 3.2: Expenditure

Year	Pay		Non Pay			Total
	Salaries	Teaching support	Research support	Clinical support	Other[1)]	
2009*	20,856,663	1,437,211	2,816,420	13,046,641	3,122,017	41,278,952
2008	19,402,964	1,802,501	3,716,629	12,502,012	3,034,262	40,548,368
2007	17,821,030	1,341,620	12,619,781	12,619,781	3,031,349	37,676,921

*year prior to visitation,

[1)]These additional expenses covered directly by the University are for city taxes, utilities, communications, security, maintenance and gardening.

3.2 COMMENTS

The Hebrew University of Jerusalem, together with all the universities in Israel has suffered from budget cuts over the past few years and is now facing a deficit budget. In spite of this, the Koret School of Veterinary Medicine budget has not been affected and the school and hospital have continued to develop as planned. This does not negate the fact that had additional funds been available, progress would have been greater.

The lack of funding has affected mainly the level of sophistication of the Veterinary Teaching Hospital with regard to the lack of equipment such as the newer imaging modalities of MRI and nuclear medicine. The need for a Linear Accelerator and upgrading and additions to the hospital building which is now too small and over 20 years old. So the number one priority now is for renovation of the Veterinary Teaching Hospital, structural additions to the Veterinary Teaching Hospital and the purchase of new equipment. To this end we have just received funding from a donor for the construction of a new Emergency and Intensive Care facility and from the university to build a new teaching auditorium. We plan to start building in 2011.

With regard to financial autonomy, the school is completely independent in this respect and free to handle all its finances as it sees appropriate for the benefit of the school. This autonomy relates also to income from services that the school offers and none of this income is diverted elsewhere, so it is a big incentive to the school to increase its income by offering services. However, we are cognizant not to allow these services to affect our standard of teaching and research activities.

3.3 SUGGESTIONS

The goal of the Koret School of Veterinary Medicine is to be counted as one of the leading Schools of Veterinary Medicine with broad international relations and as such able to make a significant contribution to the region and under developed countries. In order to achieve this aim, the Koret School of Veterinary Medicine must continue to grow. Today's budget is only sufficient to support the operation at its current level. However the aspirations of the School's leadership and the administration of the University are to provide The Koret School with all the advantages necessary to compete on the world stage. The budgetary requirements to meet these aspirations must be sought; the human resources are clearly available as our students have shown repeatedly that they are amongst the best in the Hebrew University.

The Koret School of Veterinary Medicine administration has recently presented the President of the university with a detailed year by year, 5 year plan for the continued development of the school. Among the important and more urgent items contained in this vision for the future of the school are

1. Recruitment of research staff
2. Improvement of the existing infra-structure and the addition of new facilities at the Veterinary Teaching Hospital
3. Renovation of, or construction of a new Post Mortem facility
4. Construction and equipping of a new emergency and critical care unit (a donor has recently made funds available)
5. Investment in new items of equipment for the imaging department
6. Investment in research equipment

4

Curriculum

Chapter 4. CURRICULUM

4.1 FACTUAL INFORMATION

The Koret School of Veterinary Medicine of the Hebrew University of Jerusalem, is the only school of Veterinary Medicine in Israel. It provides both veterinary (DVM) and post graduate education in veterinary medicine. The total training period for the DVM (Doctor of Veterinary Medicine) degree is 7 years. The latter are composed of 2 periods, the first one of 3 years which culminates in a Bachelor's degree in Life Sciences and may be studied at any of the Ministry of Education approved universities in the country, and a second period of 4 years studied at the Koret School of Veterinary Medicine of the Hebrew University of Jerusalem. Approximately 70% of students entering the second 4 year programme have completed their bachelor's degree at the Hebrew University of Jerusalem. The others completed a similar degree at other universities based on the course prerequisites in the curriculum determined by the Koret School of Veterinary Medicine and in prior consultation with the admissions committee of the Koret School of Veterinary Medicine. The curriculum for the Bachelors degree in these universities is structured to meet the pre-requisites and the high standards demanded by the Koret School. This ensures that the bachelor's degree is of a similar standard and academic content in all participating universities. The 4 year period of veterinary training consists of 3 years (6 semesters) theoretical and practical training and a fourth and last year (seven years altogether) consisting of 12 full months (3.5 semesters) of exclusive clinical work. Seven and a half of the 12 months are undertaken at the University's Veterinary Teaching Hospital in clinical rotations of 2 weeks each, and the remaining 3.5 months consist of two-week rotations performed under veterinary supervision at different veterinary services including public health, abattoirs, poultry field laboratory, farm animal medicine, zoological gardens and elective rotations. Some of these elective rotations may be undertaken at veterinary schools in Europe and the USA. (See chapter 4, tables 4.3.1 and 4.3.2)

The Koret School of Veterinary Medicine selects students to the second period after they have acquired a Bachelor's degree in Life Sciences at an accredited university in Israel. This 4 year programme is under the direct supervision of the Curriculum Committee of the Koret School of Veterinary Medicine of which the Director (Dean) of the school is a member. During this second part of the undergraduate education which is done exclusively at the Koret School of Veterinary Medicine, the students are obliged to complete a research project which is equivalent to the thesis required for completing a master's degree. As there is no defined national curriculum, the curriculum committee has the academic freedom to determine the curriculum and make the necessary changes. The goal of the school's curriculum is to educate a new

generation of modern compassionate veterinarians, trained with a strong scientific base and having comprehensive knowledge in all fields of veterinary sciences, with emphasis on clinical work, public health and the specific needs of the region. They are expected to have the skills to be able to perform well in all the dimensions of veterinary medicine and to be able to continue self learning after graduation. There is no tracking at the Koret School of Veterinary Medicine. However, students can take enrichment courses and clinical rotations in order to strengthen their capabilities in specific animal species. Themes like personal communication skills, ethical considerations, interaction with clients and colleagues, scientific thinking and critical reading of scientific publications are all emphasised and are a visible part of the veterinary education in our school.

We believe that our graduates should be able to contribute to the society and to the environment in which they operate, both by practicing the best veterinary medicine possible but also by serving as role models for professional behaviour environmental keepers and human beings.

Students that successfully complete all seven years and have completed their research thesis receive the degree Doctor of Veterinary Medicine (DVM). These students are then eligible to obtain a license to practice veterinary medicine in Israel. The School's Curriculum Committee is responsible for determining the school's educational goals and objectives, developing the education program that meets these goals, and constructing a system to evaluate the quality of all teaching activities (frontal and clinical). The Committee is directed by a chairperson and is responsible for the graduate education at the school. The committee comprises the Director of the School of Veterinary Medicine, heads of year committees (four members, one for each academic year), representatives of all departments, an administrator, a student, the secretary of academic affairs and the head of the curriculum committee of the Robert H. Smith Faculty for Agriculture, Food and Environment of the Hebrew University of Jerusalem. The curriculum committee nominates a course coordinator for each course most of whom have the academic rank of a senior lecturer from the specific department. The course coordinator consults with other members of the department and prepares a detailed syllabus of the course which is then presented to the curriculum committee for approval. The course coordinator is responsible for the content of the course, coordinating this content with other related courses to avoid un-necessary redundancy. The committee determines the methods for evaluating the students and evaluates the quality of the courses both by examining the student's grades, the teacher evaluations and discussing the student's feedback with other teachers of the course.

The curriculum committee has appointed the following sub-committees to aid in the smooth running of the teaching programme:

Year committees – for each academic year. The head of each year committee also serves as a member of the curriculum committee. Other members of this committee are two lecturers and three students. The year committees meet two or more times a year (as needed) and deal with academic issues of the specific year or class. They may meet more frequently if issues arise that require immediate attention. Their task is to closely monitor the teaching during the year and work to make adjustments in real time. The head of each year committee is responsible for the entire teaching of the specific year in cooperation with the heads of the different disciplines and course coordinators..

School admission committee - deals with the admission criteria and acceptance of students. From time to time it may recommend revision of the school's admission criteria and pre-requisites for application. The committee meets annually to review all applications to the school and accept the new students.

Communications committee – comprises two members of the curriculum committee, a clinical instructor and three students from each class (15 members all together). This committee openly discusses with the students extracurricular issues that arise during their studies and that may interfere with the teaching and learning environment at the school and at the teaching hospital.

Teaching evaluation and quality control committee – Members of this committee include two members of the curriculum committee and three other lecturers. This committee discusses issues related to improvement of teaching, lecturer evaluations, clinical teaching evaluation, mentoring of new teachers and more related topics.

Objectives set by the Hebrew University

Today the Hebrew University is the only Israeli University ranked among the first 100 universities worldwide. It is ranked 65th in the Chinese ranking and 92nd in the Times Higher Education survey. The Faculty of Social Sciences is ranked 49; the Faculty of Humanities is ranked 41; and the Institute of Chemistry is ranked 60 among universities worldwide. This ranking is the result of calculation regarding the number of scientific articles published in prestigious journals and the number of citations. For example, in the Institute of Chemistry: 2,377 articles and 36,992 citations during the 10 month period January 1, 2008 – October 31, 2008. This puts the Hebrew University first among Israeli universities in the number of scientific articles per scientist in this field. These articles appear in the best journals and are frequently cited by other

scientists. The University, however, cannot afford to rest on its laurels, but must move upwards, seeking to serve the best and the brightest students and to nurture the most creative and inspiring research in all fields. This nurturing of creativity is the core of the vision of the Hebrew University.

Academic International Profile

In the global world of knowledge, scientific excellence thrives on exchange of ideas. For a small country like Israel, international exposure is a lifeline to academic excellence and the University must invest in developing the network of such lifelines. The international profile of the University is reflected in its visibility and cooperation agreements and exchanges. Those in charge of academic exchange and cooperation agreements are the Vice-Rector, and the Associate Rector for Administration and Academic Secretary.

The University has academic agreements with universities in 33 countries. Europe aims at making internal European borders transparent as far as higher education and research are concerned. Europe is now extending a cooperative hand to non-European countries, including Israel. Last year 38 Hebrew University students spent one term in Europe as part of the Erasmus Mundus student exchange program. This year over 30 students are participating in this program. There is also an increasing demand by partner universities to send their students to the Hebrew University. The Provost of the Rothberg International School, is acting vigorously to ensure a richer English program for international students and to tighten the English program's connection with syllabi of all faculties.

Academic Review

The Hebrew University of Jerusalem believes that review and evaluation at regular intervals prevent stagnation and allow for improvement, solution of problems, renovation and optimal use of available resources. In the Office of the Rector, the person responsible for academic evaluation at the Hebrew University is the Vice-Rector, Prof. Yaacov Schul. The mandate of the Review Committee is open-ended, and the Committee is asked to examine all aspects of the reviewed unit or units of similar disciplines: infrastructure, administrative personnel, curricula, quality of students, achievements and satisfaction, and the activity of faculty members in research, teaching, supervision of research students, involvement in University life and in the academic world, as well as the global standing of the relevant unit(s). After several years of extensive review activity, including 17 reviews by external visiting committees, this year was dedicated largely to re-evaluate the recommendations of the review committees and focus on their implementation. Prof. Eli Friedman, head of Academic Review in the Experimental Sciences reports that the academic review by a committee of external experts is customary in first-rate academic institutions in the Western world, and after implementation of this process in the Hebrew University for a

number of years, it now appears that the units are no longer apprehensive about the process, assuming it is geared mainly towards weaker units. This self evaluation forces the unit to take an in-depth look at itself. With the guidance of the Administration and sometimes after several revisions, most of the units produce a serious and important self-evaluation text, even before the arrival of the Review Committee.

4.1.1 POWER OF SUBJECTS AND TYPES OF TRAINING

4.1.1.1 POWER OF SUBJECTS

The major portion of the curriculum at the Koret School of Veterinary Medicine consists of “core courses" which are compulsory for all students. All of the first, second and the first half of the third year courses are “core courses”. Attendance of all lectures is obligatory. The extent of elective courses is limited and consists of at least 4 credit points which is ~56 hours and equal to2 ECTS. The purpose of the elective courses is to support the student in gaining broader and more diversified knowledge and experience in a specific area of veterinary medicine they are more interested in or want to strengthen. Table 4.3 (in section 4.1.2) shows the elective courses available at the Faculty during the 2010-2011 academic years. Some of these elective courses are limited to a relatively small group of students, and some are opened to postgraduate students from the Animal Sciences department at the, Robert H. Smith Faculty of Agriculture, Food and Environment.

Most of the lectures are given to the entire class, but when active participation of the students is required or when the lecture is highly demonstrative the class may split in half or thirds in order to allow better contact between the lecturer and the individual student during the demonstration.

The time allocated for examinations as well as for core and elective courses are presented separately in Table 4.1; in Table 4.2, the column “Other” includes examinations.

During the last and clinical year the students rotate between the hospital departments and selected veterinary facilities and services outside the Faculty. About one third of these rotations are elective and some may be taken abroad. The head of the 4th year committee is responsible for approving, monitoring and controlling the teaching provided during the electives taken outside the Faculty.

4.1.1.2 TYPES OF TRAINING

The following definitions are used when classifying different types of training in the current report: 1) frontal lectures, 2) self-directed learning and 3) supervised practical training.

4.1.1.2.1 Frontal Lectures

- **Lectures:** convey mainly theoretical knowledge, they are complemented by textbooks, journal articles and provide up-to-date information. Lecturers are encouraged to incorporate literature (articles and textbook) review exercises, seminar presentations, and clinical problem oriented exercises in their courses throughout the years.

- **Seminars:** tutorial group work including supervised teaching sessions is directed towards a smaller group of students. These sessions in which they work on their own or as a team are part of the theoretical teaching and are used mainly for the "elective" courses but are also involved in teaching of the "Core courses". Information is illustrated and knowledge extended by the presentation of audio-visual material, exercises, discussions, introduction and solving clinical cases, interactive computer programs and more.

4.1.1.2.2 Self-directed learning

This refers to sessions of individual students making use of defined teaching material provided by the Faculty. In our curriculum time for self directed learning is allocated in the teaching schedule and composes about 20% of the study days. This time is mostly used by the students to fulfill self directed learning tasks such as preparing seminars, studying for examinations and weekly quizzes. An attempt has been made over the last two years to combine these self learning hours to one complete 8 hour day instead of it being divided to two hours each day. In this way the students will be able to spend time in the laboratories where they perform their basic science research project or join their mentor for the project while collecting data for the clinical studies. The number of hours given for self-directed learning in Table 4.2 includes only hours that are within the curriculum. The actual working day of an average student is probably much longer than reported here.

4.1.1.2.3 Supervised practical training

- **Laboratory and desk based work**. Includes teaching sessions where students actively perform laboratory experiments, use microscopes for the examination of histological or pathological specimens, perform dissections, necropsies, read radiographs and analyze clinical pathological test results. It also includes practicing clinical approaches and problem solving using medical records, video cases and interactive computer programs without the actual handling of live animals, actual body organs or samples. Other practical work includes teaching sessions where students themselves work on clinical cases at the Veterinary Teaching Hospital or through excursions to farms, slaughterhouses and processing plants. This type of learning is part of the curriculum in all four years. The total number of hours given in the tables refers to laboratory and desk based work that is formally included in the teaching schedule but the same type of work takes place during the clinical rotations in the last 3.5 semesters of the fourth year. Students that go out to the farms and the field will often come back with samples and work in the laboratory to complete the analysis. When rotating at the teaching hospital, as part of working up of clinical cases they are also engaged in the diagnostic laboratory. Hence the total number of hours dedicated to desk based work is significantly increased through the large number of hours spent in the laboratory in the clinical year.

- **Non-clinical animal work** – Includes sessions where students study through the use of normal animals, and animal models, visits to other facilities such as farms, abattoirs, food processing facilities, zoos and other extramural activities

- **Clinical work** refers to strictly hands-on procedures done by students and includes work on animals in a clinical environment at the veterinary teaching hospital, or organs and cadavers at the pathology department. Students also practice herd and poultry medicine through clinical rotations in the farms, and experience public health consideration and management, thus making use of relevant diagnostic data. Surgery and other clinical procedures such as insertion of intravenous and urine catheters, chest and feeding tubes, application of external fixation and more are both taught theoretically, practiced during sessions in the second and third year and also performed by the students during the last and clinical year when they actually work on clinical cases supervised by their clinical instructors.

4.1.2 GRADUATE CURRICULUM FOLLOWED BY ALL STUDENTS

4.1.2.1 CURRICULUM HOURS

The veterinary curriculum in Israel has always been divided into two periods as described above. The undergraduate studies of life sciences leading to Bachelor of Sciences; 165 Credit points (CP), which takes three years to complete, and to the graduate Doctor of Veterinary Medicine degree(DVM); 250 CP, which takes four years to complete. One CP is equivalent to 1hour of lecture per week for 14 weeks (except in the 4th year where 1 CP=1 clinical week – a total of 50 CP). The overall structure of the DVM degree programme takes 7 years to complete and appears in Tables 4.1-4.4. Our school does not offer a tracking system but allows students to elect courses in different disciplines during the third year and offers 16 weeks of elective rotations out of a total of 50 weeks of clinical work in the fourth year (32%). Students can elect some of the clinical rotations twice (ambulatory bovine medicine, ambulatory equine medicine, public health, and more) hence are able to achieve a higher degree of expertise in areas they wish to develop. Courses written in ***Italics*** are new courses starting in the coming academic year (2010-2011).
Clinical rotations are two weeks each and always include weekly seminars, case presentation and self guided learning although not mentioned in the tables as such.

Table 4.1: **General table of curriculum hours taken by all students in DVM programme. Number of ECTS are shown in parenthesis at the total column only.**

Year	Theoretical training			Supervised practical training				
	Lectures A	Seminar B	Self directed learning C	Labs D	Non-clinical animal work E	Clinical work F	Other - exams G	**Total**
First	565	56	240	226		14	51	**1152(46)**
Second	735	46	112	116	20	20	58	**1107(44)**
Third	700	104	16	27	100	224	47	**1218(49)**
Fourth		96				2400		**2496(100)**
Total	**2000(80)**	**302(12)**	**368(15)**	**369(15)**	**120(4.8)**	**2658(106)**	**156(6)**	**5973(239)**

1 ECTS = 25 learning hours. These hours refer only to curriculum hours within the formal teaching hours. These do not include self learning hours done by the students in their free time.

Table 4.2.1 Content of the compulsory courses in the 3 year Bachelor degree (B.Sc.), 1 credit point (CP) =14 lecture hours or one weekly hour for 14 weeks semester. Total of 165 CP (equals 2310 hours or 92.5 ECTS) is needed to obtain the bachelor degree. The courses listed below must be taken by all students that apply for veterinary school. The number given in the table is the minimal number of hours demanded by us in each subject in order to be accepted to the school of veterinary medicine. Students must prove that they are proficient in English by taking courses and/or passing an examination. They do not receive credit points for this.

Subject	Number of hours	Number of CP	ECTS	Comments
Physics	84	6	3.5	
Chemistry	168	12	7	
Biology (animal, plant, cell biology)	168	12	7	
Statistics	42	3	1.7	
Physiology	84	6	3.5	
Biochemistry	84	6	3.5	
English				
Immunology	28	2	1	
Endocrinology	28	2	1	
Genetics	56	4	2.3	
Microbiology	56	4	2.3	
Biomathematics	56	4	2.3	
Total	**854**	**61***	**34****	

***The remaining 100 CP needed to complete the bachelor degree in each university are taken in different areas of life sciences and are not controlled by the veterinary school.

** The ECTS are calculated as 1 ECTS = 25 formal learning hours.

These are additional 34 ECTS that are taken by all students and are part of the basic science chapter of the veterinary education.

Table 4.2.2.1 – Content of DVM degree given in number of hours dedicated to each subject and divided into different subject material; Basic or clinical sciences. ECTS are given in parenthesis in the total columns only

– **Basic sciences** – taken by all students

Subject	Theoretical training			Supervised practical			Other (exams)	Total
	Lecture	Seminar	Self directed learning	Labs	Non clinical work	Clinical work		
	A	B	C	D	E	F	G	
Basic Sciences								
Anatomy	56		26	170			6	**258**
Physiology	42		6				3	**51**
Histology	42		6	56			3	**107**
Embryology	28						3	**31**
Pharmacology (basic)	42		6				3	**51**
Toxicology	28						3	**31**
Microbiology (including virology, bacteriology, mycology)	144		12				8	**164**
Clinical immunology	28						3	**31**
Epidemiology	28		6				3	**37**
Professional ethics	28		4				3	**35**
Total	**466 (18.5)**		**66 (2.6)**	**226 (9)**			**38 (1.5)**	**796 (32)**

A total of 66 ECTS are given in basic sciences to all students, 34 of which are obtained as part of the bachelor degree whereas the remaining 32 are given during the first and second year of the DVM degree.

Table 4.2.2.2 – Content of the Veterinary Medicine degree given in number of hours dedicated for each subject and each teaching method. ECTS are given in parenthesis.
- Clinical sciences – taken by all students

Subject	Theoretical training			Supervised practical			Other	Total
	Lecture	Semi-nar	Self directed	Lab	Non clinical work with animals	Clinical work	Exams	
	A	B	C	D	E	F	G	
Clinical Sciences								
Obstetrics (food animals and equine)	8					20		**28 (1.5)**
Obstetrics (small animal)	2*					4		**6**
Pathology	112		14	60	10	100	9	**305 (12)**
Parasitology	78			20			6	**104 (4)**
Clinical medicine and surgery (inc. anesthesia)								
Small animal medicine	175		10			300	8	**493 (20)**
Small animal surgery Soft tissue and orthopaedic labs	105			15		250 Student spays 20 hrs	8	**398 (16)**
Large animal medicine and surgery (bovine Ovine, porcine)##	140					100	8	**248 (10)**
Equine medicine and surgery	154					300	8	**462 (18.5)**
Anesthesia (small and large animal)	42		10	12		100	8	**172 (7)**
Poultry medicine	35				10**		3	**48 (2)**
Field Veterinary medicine (ambulatory clinics)						100		**100 (4)**
Preventive Medicine#								
Diagnostic imaging	63					100	3	**166 (6.5)**

* given as part of the small animal medicine and surgery courses.
** Demonstration tours in farms with the teacher.
# this is included in various courses depending on species
Porcine medicine is part of the large animal medicine course

Table 4.2.2.2 – **Clinical sciences continued and animal production**

Subject	Theoretical training			Supervised practical			Other	Total
	Lecture	Semi-nar.	Self directed	Lab	Non clinical work with animals	Clinical work	Exam	
	A	B	C	D	E	F	G	
Clinical Sciences cont.								
Reproduction and reproductive disorders	20 (LA) 6 (SA)					50(LA) 20(SA)	3 1	**73** **27** **(4)**
Veterinary state medicine and public health	28						3	**31** **(1.2)**
Veterinary legislation and forensic medicine	28						3	**31** **(1.2)**
Therapeutics (clinical pharmacology)	36		6				3	**45** **(2)**
Clinical pathology (inc. laboratory diagnostic methods and interpretations)	42						4	**46** **(2)**
Total clinical Sciences	**1074** **(43)**		**40** **(1.6)**	**107** **(4.3)**	**20** **(1)**	**1464** **(58.5)**	**78 (3)**	**2783** **(112)**
Animal production *								
Animal nutrition	28						3	**31** **(1.2)**
Agronomy*								
Rural economics								
Animal husbandry	14 (poultry) 28 (ruminant						3 3	**48(2)**
Animal ethology and protection	20		8				3	**31** **(1.2)**
Total in animal production	**90** **(3.6)**		**8**				**12** **(0.5)**	**110** **(4.4)**

* These subjects are studied in the BSc degree

Table 4.2.2.3 – Content of the Veterinary Medicine degree given in number of hours dedicated for each subject and each teaching method – food hygiene / public health - taken by all students.

Subject	Theoretical training			Supervised practical			Other	Total
	Lecture	Semi-nar	Self directed	Lab	Non clinical work with animals	Clinical work	Exam	
	A	B	C	D	E	F	G	
Food Hygiene/Public health								
Inspection and control of animal food stuff or foodstuffs of animal origin and the respective feedstuff production	21						3	**24 (1)**
Food Hygiene & technology	49		6				3	**58 (2.3)**
Food science including legislation		In clinical sciences						
Practical work(including practical work in places where slaughtering and processing of foodstuff takes place)			6			100		**106 (4.2)**
Total	**70**		**12**			**100**	**6**	**188 (7.5)**
Professional Knowledge								
Practice management	7						3	**10 (0.5)**
Veterinary certification and report writing	6		8					**14 (0.5)**
Career planning and opportunities	7							**7**
Total	**20**		**8**				**3**	**31 (1.2)**
Total of all obligatory EU listed clinical studies	**2254 (90)**		**68 (3)**	**107 (4.3)**	**20 (0.8)**	**1564 (62.5)**	**100 (4)**	**4113 (164.5)**

Table 4.2.2.3 continued

Total of 4113 hours of clinical sciences, public health, animal production, and professional development are given as obligatory courses to all students. These are EU listed subjects only and are equal to 164.5 ECTS. An additional 1646 hours are given in basic sciences courses that are also EU listed subjects and are equal to 66 ECTS, 34 of which are given as part of the bachelor degree and the remaining 32 are given in the first 4 semesters of the DVM program. A total of **5759** learning hours, equals **230 ECTS** of obligatory courses are required for all students.

Table 4.3.1: Curriculum hours in EU-listed subjects offered and to be taken as **electives courses (ECTS in parenthesis)**

Subject	Theoretical training			Supervised practical			Other	Total
	Lect-ure	Semi-nar	Self directed	Lab	Non clinical work with animals	Clinical work	Exams	
	A	B	C	D	E	F	G	
A. Basic Science								
Advanced diagnostic methods	28							28 (1)
Clinical Sciences								
B. Small animals								
*Advance course in small animal medicine	28		9				3	40 (1.6)
Selected chapters in small animal dermatology	14						3	17 (0.5)
Advanced cardiology	7			7			3	17 (0.5)
Neuro-emergenc-ies	10				4		3	17 (0.5)
SA oncology	8	6					3	17 (0.5)
C. Equine medicine and surgery								
*Equine theriogen-ology	21			9	12		3	45 (1.8)
D. Animal productio n								
*Theriogen -ology of farm animals	30				12		3	45 (1.8)

E. Food hygiene/ public health								
* Veterinary public health	100				26		4	130 (5.2)
Wild and migrating birds – epidemiol-ogy and medicine	28						3	31 (1.2)
Laboratory animal medicine (medical school)				50				50 (2)

Students must elect from the above list, courses that are equal to at least 4 credit points (CP) which are 56 learning hours (2.2 ECTS). They must first elect one of the major courses (*) from either one of the groups (A-D) and then add to that another free elective course.

Table 4.3.2: Curriculum hours in EU-listed subjects offered and to be taken as **elective clinical rotations (ECTS in parenthesis)**

Subject	Theoretical training			Supervised practical			Other	Total
	Lect -ure	Semi-nar	Self directed	Lab	Non clinical work with animals	Clinical work	Exams	
	A	B	C	D	E	F	G	
Basic Science								
Pathology						100		**100(4)**
Clinical sciences								
Advanced equine medicine and surgery (H)						100		**100(4)**
Small animal medicine (H)			8			100		**108(4)**
SA surgery (H)						100		**100(4)**
Emergency & critical care (H)						100		**100(4)**
Zoo & wildlife medicine (O)						100		**100(4)**
Small animal private clinic (O)						100		**100(4)**
Neurology & neurosurgery (H)						100		**100(4)**
Advanced imaging (H)						100		**100(4)**
Animal production								
Ambulatory farm animal medicine (O)						100		**100(4)**
Small ruminants medicine in the field (O)						100		**100(4)**
Poultry medicine in the field (O)						100		**100(4)**
Food hygiene/ public health								
Public health in practice (O)						100		**100(4)**
Clinical rotation with laboratory animals (O)						100		**100(4)**
Professional knowledge								
Animal welfare (O)						100		**100(4)**

H – Veterinary Teaching Hospital

O – Outside Veterinary Teaching Hospital

In addition to the compulsory rotations, the student must elect **6** rotations of two weeks each from this list of 15 optional clinical rotations offered to them in the fourth year:

1. They must take an additional **2** rotations in two of the following – ambulatory farm animal medicine, equine medicine and surgery, small animal medicine, small animal surgery, emergency and critical care.
2. They must take **3** of the following – laboratory animal medicine, zoo and wildlife, farm animal ambulatory, ovine medicine, equine ambulatory medicine, poultry medicine in the field, public health, animal welfare.
3. They must elect **1** of the following: radiology and US, anesthesia, neurology, dermatology, ophthalmology, oncology, cardiology, exotic pet medicine.

A total of **600** hours equal to **24 ECTS** are taken by each student as an elective rotation during the last 12 months of the veterinary education.

Table 4.4: curriculum hours in subjects not listed in Table 4.2 to be taken by each student, including dissertation (final graduation thesis). (ECTS in parenthesis)

Subject	Theoretical training			Supervised practical training			Other	Total
	Lect -ure.	Sem inar.	Self directed	Lab	Non clinical work with animals	Clinical work	Exams	
	A	B	C	D	E	F	G	
Research project *		1	200	200		200		**400 (16)**
Basic Science								
School's seminar in life sciences and veterinary medicine		112						**112 (4.6)**
Clinical sciences								
Pet nutrition (dogs, cats horses	46						3	**49 (2)**
Introduction to clinical methods (inc. restrain, basic clinical procedures, physical examination	42						3	**45 (1.8)**
Clinical methods (see above)				42			4	**47 (1.8)**
Exotic animal medicine (birds, reptiles, small mammals)	42						3	**45 (1.8)**
Early Clinical exposure (during third year) including visits in production animal farms		48			100			**148 (6)**
Emergency and critical care						200		**200 (8)**
Animal production								
Animal welfare	28						3	**31 (1.2)**
Practical experience in milk production farm						14		**14 (0.5)**
Food hygiene/ public health								
Laboratory animal medicine	28						3	**31 (1.2)**
Total	**186 (7.5)**	**161 (6.5)**	**200 (8)**	**242 (9.6)**	**100 (4)**	**414 (16.5)**	**19 (0.5)**	**1122 (45)**

* The research projects are of three major types:

Clinical studies, retrospective/prospective studies or basic science.

Therefore the hours are dedicated either to pure laboratory work, collection and processing of samples in the clinical work or reviewing medical record in the retrospective studies. The hours written are in general for type of research project.

A total of 1122 obligatory learning hours equal to 45 ECTS are taken by all students. These are non EU listed subjects but include the research project and other courses listed above.

4.1.3 FURTHER INFORMATION ON THE CURRICULUM

The Koret School of Veterinary Medicine actively promotes research based learning. To this end, each student must perform a research project mentored by a researcher of the school or other approved institution. This project is equivalent to the Master's degree thesis and in many cases results in publication in an international journal. Completion of this research project is a prerequisite to graduating. It will also allow the student to continue on to a PhD degree in the future (if they receive a grade of 85 or higher). The school encourages top students to combine their DVM studies with a MSc or PhD. This program is longer than the regular programme by 2-4 years. Students in the combined program take a year off, (usually after the first 2 years of basic science studies), during which they also prepare the research proposal, and then and work in the laboratory. They return to their veterinary studies the following year to complete the remainder of the veterinary curriculum and then complete their research. This takes at least another year or two.

Special emphasis is placed on scientific writing and presentation skills of scientific data. Each student presents two abstracts during his studies and work in a format similar to abstracts in international conferences.. The first one is on a given topic, literature review or presentation of a recent paper. The second seminar is given in the third year on the topic of each student research project. The students take a course in the first year on scientific writing in which they learn to ask a scientific question and write a research proposal (including introduction, material and methods and statistical analysis). The student is only allowed to perform the project if was approved by the dissertation committee.

During the last three years an attempt has been made to introduce clinical work into the curriculum as early as possible. To achieve this aim a "Clinical day" has been introduced in the third year. This allows 3rd year students to spend one day a week rotating through various departments in the Veterinary Teaching Hospital. They are also permitted to act as assistants in student spays. Starting 2011, all students from 1st-4th year will participate in spaying/neutering activity. Students of the fourth year perform at least 6 spays and two castrations of either dogs or cats. Starting from this year each fourth year student will be assisted by a third year student, the fourth year anesthetist will be assisted by a second year student and the technician will be assisted by a first year student who will learn basic principles of preparing a patient for aseptic procedure.

Future plans

The major development of the curriculum in the last years and the years to come is toward increasing the amount of teaching hours in the field of public health, animal welfare and the association between veterinary medicine and environmental issues. We believe that as veterinarians we not only have to serve as environmental keepers but also to form and enforce the balance between public health, increasing need for food production, animal welfare and environmental safety. Our curriculum will develop in the direction that prepares our graduates for the challenges facing the future veterinarians.

Most of our students, as in other schools in the world, dream of a career in the field of companion animal medicine (dogs, cats, horses and other pets). The second most popular field is ruminant medicine. Poultry medicine, public health and food hygiene are of little interest to young students wishing to start their veterinary education. The school is aware of the tremendous need to supply talented and well trained veterinarians that wish to develop a career in these areas and has taken steps aimed at locating students with the potential to take up such positions and encourage them to continue in these directions. Students with these special interests are considered for admission with special criteria (5 positions each year =10% of the students). The admission committee also adds points to applicants with an agricultural background preferably farm animals, applicants that have proven former interest in public health issues and food hygiene (previous work in the field, research).

This year a special training program for poultry medicine was initiated within the curriculum of the school. Five students, one from second year and four from the first year, are taking part in a special program subsidized by the Israeli Poultry Board. These students, during the four year veterinary training, will in addition to the regular studies be exposed to additional, training and clinical experience in poultry medicine and will after graduation be expected to work in the framework of the Poultry Board for a period of at least four years. They will perform a research project in the field of poultry medicine under the mentorship of leading poultry veterinarians. They will participate in workshops and international conferences, will be exposed to clinical work in the field during summer vacations and will take suitable elective courses in the last two semesters. Similarly, in order to encourage students to enter the field of dairy farm medicine, the Milk Board offered four scholarships for the four best research proposals in the field of animal welfare and dairy farming.

We look at the curriculum as built from different components; basic sciences, companion animal medicine, farm animal medicine, public health and, animal welfare. Our aim for the future is to strengthen the public health and animal welfare component by adding courses and increasing the amount of teaching hours within the curriculum of the school. We are also planning to offer a DVM, MPH programme similar to the DVM, MSc, and the DVM, PhD programmes we already offer. We are constantly looking for ways to attract new graduates to develop a career in this important and fast growing discipline of the veterinary profession.

4.1.4 OBLIGATORY EXTRAMURAL WORK

The Koret School of Veterinary Medicine cooperates closely with most if not all institutions and facilities that deal with animals, veterinary medicine, medical research, agriculture and agricultural research, food production facilities and public health authorities. This cooperation enabled us to incorporate the best personnel in each of the mentioned disciplines in the teaching program as well as in instructing our students while they rotate through these facilities outside the university.

One of the prerequisites for application to the Koret School of Veterinary Medicine is prior exposure to companion as well as food animals husbandry and handling. Applicants need to prove that they have had at least one month's practical experience with companion and food animals according to the following criteria:

- Companion Animal Clinic: 1 week (minimum 30 hours)
- Equine Stables or with an Equine clinician: 1 week (minimum 30 hours)
- Food Producing Animals (poultry, bovine, ruminants, etc…): 2 weeks (minimum 60 hours)

All forms relating to practical experience need to be submitted to the school secretary at the time of application.

In the first year, as part of the poultry and farm animal husbandry courses students visit poultry and dairy farms in the vicinity of the school. They also get to visit several food production facilities where different food products are prepared for all kinds of farm animals. These are private facilities that have working relations with teachers of the school, hence agree to accept our students on a regular basis for many years. During the first year students rotate in the dairy facility of the Volcani Institute for agricultural research. This allows the students to acquire some experience in milking and working with dairy cows.

In the second year students spend time at the Kimron Veterinary Institute of the Ministry of Agriculture, several of our external teachers are from there. Here, students participate mainly in the work of the pathology department performing post-mortems and examining pathological specimens and slides as part of the pathology course of the second year. They also observe the routine diagnostic processes performed at the institution. Being the main government diagnostic laboratory in Israel, veterinarians from the entire country send a wide range of samples for analysis to different department of the Kimron Veterinary Institute.

In the third year, students get to visit farm animal facilities around the country as part of the farm animal medicine and surgery course. In addition there is a visit to a porcine breeding and production facility where the students are taught the different medical

aspects of intensive porcine production, discuss husbandry and other issues of the porcine industry and medicine. Following this they visit a porcine slaughterhouse.

Most of the extramural training takes place in the last and clinical year. Between 15 to 18 out of the 25 clinical rotations of the fourth year are performed within the veterinary teaching hospital, 7 to 10 of them (two weeks each) are held in extramural facilities (table 4.5).

Students can elect to travel and perform an externship in universities overseas. In this case some of the elective extramural work is done in veterinary schools in other countries. All elective rotations must be approved in advance by the head of the fourth year academic affairs.

Table 4.5 -DVM studies - extramural work in the following institutions

Nature of work	Minimum period		Maximum period		Year in which carried out	Facility name or location
	Hours	% total study time	Hours	% total study time		
Farm animal ambulatory medicine	100 (two weeks (6 days a week)	100%	300 If they elect this rotation twice as an elective	100%	fourth	Farms around the VTH
Poultry medicine	100 (2 weeks)	80%	200 If they elect another rotation	80%	fourth	diagnostic laboratories + field medicine in the farms
Pathology	100 (2 weeks)	100%	200	100%	fourth	Pathology department, Kimron institute
Public health/food hygiene	100 (2 weeks)	100%	200	100%	fourth	2 slaughter houses, three municipalities & quarantine
Zoo & wild life medicine	0		100	100%	fourth	Safari zoological garden, biblical zoo
Ovine medicine in the field	0		100	100%	fourth	Ambulatory field medicine in ovine farms
Animal welfare	0		100	100%	fourth	SPCA & Kimron institute.

4.1.5 SPECIFIC INFORMATION ON THE PRACTICAL TRAINING IN FOOD HYGIENE/PUBLIC HEALTH

The Public Health rotation, a mandatory rotation (Course # 65767), is a 2 week rotation during the 4th year of veterinary studies. The rotation can also be taken as an additional elective. There are between 13-17 rotations annually, with 2-3 students per rotation. The students together with their mentors visit a number of facilities that are controlled by public health veterinarians. The rotation is therefore held in several facilities outside the Koret School of Veterinary Medicine. Students are given introductory lectures by various individuals in their different fields and later (on the same day) have practical exposure in the specific work done by those same people.

Before the rotation starts, students are given articles on topics associated with veterinary public health which they are to present to an audience on the final rotation day. They are encouraged to review the subject of these articles beforehand and consult with various experts in the field. For this to be accomplished, the use of additional recent articles from peer reviewed journals is regarded as necessary. An analysis of the details of the methods and statistical analysis used in individual articles to prove significance of trends is important for the seminar presentation.

Students undergo training in slaughterhouse management over a 2 day period, including ante mortal and post mortal examination of domestic livestock and poultry. They spend 3 days with various municipal veterinarians where they are taught how zoonotic diseases relate to meat hygiene and visit butcheries, and other places where meat products are sold in raw or cooked state for later consumption, they are also taught how companion animals are controlled in the same regard and get to visit and witness the day to day work in quarantine centres. They are introduced to some common problems faced by municipal veterinarians in their local communities. Municipal vets explain how to efficiently control stray dog and cat populations, to reduce the annual incidence of animal bites and the complaints by residents as regards to barking nuisance, and companion animal litter control. One morning is devoted to reviewing the HACCP principles. The students attend a two hours lecture, given by a food engineer from the veterinary services. Thereafter they are given an assignment which includes the preparation of a HACCP program for either a slaughterhouse or a food factory. This assignment is presented to the HACCP instructor at the end of the rotation. The students spend a morning at a government approved laboratory which undertakes routine bacterial sampling of meat. Here, they are not only made more aware of the various standards available as well as laws that allow for punishment of offenders, but are also shown the procedures commonly performed in a well equipped facility. Later on the same day, the students visit a government veterinarian working in Meat Import and Export control.

Two days of the rotation allow students to accompany a Ministry of Agriculture Veterinarian on his routine rounds. This may vary in nature according to the season, but generally involves the testing of different livestock flocks for transmissible disease, as well as the vaccination and tagging of animals for identification purposes. During this time, the veterinarian explains how notifiable diseases are controlled and the available options for use in case of disease outbreak.

The control of the fish industry is taught on the 9th day of the rotation by a public health veterinarian. Here, the students visit retail stores that sell fish products. Occasionally, students spend a day with a Nature Conservation Authority veterinarian, where wildlife population and disease control is continually monitored.

4.1.6 RATIOS

Main indicators to be used in the evaluation of Veterinary Faculties(see also Annex III)

Parameter addressed		Indicator (Ratios)	denominator obtained
Types of training **(see Annex II, chapter 4.1.3)**	**R6:**	**Theoretical Training 2670** **Supervised Practical training 3147**	1.18
	R7:	**Clinical Work 2568** **Laboratory and desk based work + non clinical animal work 489**	0.19
	R8:	**Self directed learning 368** **Teaching load 2670**	7.2
Training Food Hygiene/Public Health	**R9:**	**Total no. curriculum-hours Food Hygiene/Public Health 403** **Total no. hours vet.curriculum 5973**	14.8
	R10:	**Total no. curriculum-hours Food Hygiene/Public Health 403** **Hours obligatory extramural work in veterinary inspection 230**	0.57

4.2 COMMENTS AND SUGGESTIONS

Total of 4113 hours of clinical sciences, public health, animal production, and professional development are given as obligatory courses to all students. These are all EU listed subjects and are equal to 164.5 ECTS. An additional 1646 hours are given in basic sciences courses that are also EU listed subjects and are equal to 66 ECTS. 34 of which are given as part of the bachelor degree and the remaining 32 are given in the first 4 semesters of the DVM program. A total of **5759** learning hours, equals **230 ECTS** of obligatory courses that are EU listed subjects are taken by all students. In addition to that, our students are required to take a total of **1122** learning hours equal to **45 ECTS** in subjects that are not listed by the EU but are still an essential part of our curriculum. These include the research project and other courses listed above. In addition to that our students elect two or more of the elective courses offered to them during the fifth and sixth semester equal to **56** learning hours (**2.2 ECTS**). They have to elect one major course from one of the school's disciplines; small animal, food animal, equine medicine or public health and add another course from the list below. During the last year students can elect 6 of the 25 rotations, the rest are obligatory and are done either in the veterinary hospital or in one of the extramural facilities mentioned earlier (**600** hours = **24 ECTS**).
The overall number of learning hours is 7537 (300 ECTS), 850 (34 ECTS) of which are taken as part of the bachelor degree, 656 hours (26.2 ECTS) are elective and about 2500 hours (100 ECTS) are clinical work taken in the last year.

The veterinary curriculum contains all aspects and disciplines of the veterinary profession in Israel. In our school 80 % of the teaching load falls on the staff of the school. The remaining 20% of the teaching load is taken up by external teachers who are amongst leading veterinarians from the field in all disciplines of the profession. This provides our students with the best, updated information that is not only current but also extremely relevant to the situations and the needs of the profession in the country as well as regional challenges facing us from time to time.
We are aware of the fact that Israel is surrounded by countries that may not always cooperate with us in issues regarding infectious and transmissible diseases. This may at times be crucial for public health here and in the neighbouring countries. For this reason we believe that public health issues, epidemiology and emerging zoonotic diseases, must have a priority that will be reflected in our school's curriculum. In the last few years the proportion of these courses (zoonotic diseases, food hygiene and food production) was increased.
During the years the curriculum was revised several times based on reviews either by external committees or by senior staff members of the school itself. The aim was always to improve both the curriculum and the quality of teaching. Over the years, more and more staff members of the school completed residencies and became European or American specialists' in different disciplines of veterinary medicine. As

diplomats they serve in international committees of the different colleges that discuss and set future horizons for veterinary education. Now days, the school's curriculum committee is regularly updated regarding major developments in any field of the veterinary profession and make sure to implement these new directions and ideas into the curriculum of the school taking into considerations the special needs of the country and the region.

Comments related to ratios related to training, R6, R7, R8, R9, R10

The ratios for R6, R9 and R10 fall within the range of present denominators and box plots established by ECOVE 2010.

Ratio R7 which compares the relationship between the Clinical work and Laboratory and desk based work + non clinical work is lower in our case. One of the reasons for this is that the number of laboratories is less than in other schools as it does not include the laboratories undertaken in the BSc studies in the first 3 years which amount to a considerable number of hours. The second reason for this is that fact that we have a very large clinical work load (3.5 semesters) which also tends to tilt the ratio as compared to others schools.

Ratio R8 which compares the relationship of self directed learning to the teaching load is slightly lower when the clinical year is not included in the teaching load and doubles when this is included. It was not clear to us whether the clinical year should be included or not.

5

Teaching quality and evaluation

Chapter 5. TEACHING AND LEARNING: QUALITY AND EVALUATION

5.1 FACTUAL INFORMATION

The Koret School of Veterinary Medicine is academically independent from the rest of the Faculty of Agriculture and therefore the evaluation and quality control of both the curriculum and teaching is the responsibility of the school's curriculum committee. During the 25 years since the school was established external evaluation of both the teaching and the curriculum was undertaken though national and international committees as is required of all schools in the Hebrew University of Jerusalem. The comments and suggestions of these committees have served as guidelines for the modification and improvement of our performance during the years. Additionally, a uniform teaching evaluation system for all teachers at the Hebrew University of Jerusalem is undertaken each semester. This teacher evaluation system is based on a questionnaire which the students are required to complete for each course. This is done anonymously at the end of each semester. This questionnaire asks the following questions

Students are required to answer the following questions by ranking them on a scale of 1 to 20

- To what extend did the course attribute to your knowledge
- To what extent did the course provide you with tool s for self analysis and independent thought
- To what extent was the information presented in an organized, clear and interesting manner
- To what extent did the assignments (literature, projects) contribute to the course
- To what extent did the frontal exercises contribute to the course
- To what extent did the course on the internet assist during your studies
- How well did the teacher cope with questions and comments
- To what extent was the lecturers attitude appropriate
- What was the extent of the availability and compliance of the lecturer (meetings, telephone, email)
- To what extent are you satisfied with the course itself
- To what extent are you satisfied with the lecturer

Students are then required to rate the following questions

- The extent of assignments was; Excessive/appropriate/insufficient
- The pace of the course was: too fast/ appropriate/slow
- The level of the course was; very high/appropriate/low
- Do you have any additional comments

In addition to the questionnaire, structured meetings of class representatives with the head of the year committee (a subcommittee of the curriculum committee), course organizers or both take place. These meetings are held at least twice in each semester so that problematic academic issues that need more urgent attendance can be dealt with before the upcoming meeting of the curriculum committee. In these meetings the students speak openly and point out problems in the teaching program and teaching quality that need to be attended.

Academic promotion at the Hebrew University of Jerusalem is based among other criteria on high level of teaching. Each lecturer is evaluated by the students as mentioned above and by a faculty member of the rank of senior lecturer or higher who are requested to attend specific lectures during the year and report back to the Director of the school. These evaluation forms filled by the students and by the senior faculty member are open for the lecturers to see and learn from in order to improve their performance in teaching. The weight the university gives to the quality of teaching in the promotion process provides an incentive to lecturers to improve the level of teaching.

Courses and workshops for improving teaching skills are regularly held at the faculty of agriculture and all lecturers of the school are invited and encouraged to participate,

Our students and the level of knowledge they acquired are best evaluated during the very intensive fourth year in which we work closely with each and every one of them. The final exam held in the tree major disciplines serves as an addition mean of evaluation.

Clinical instruction in the fourth year at the Koret School of Veterinary Medicine takes place in small groups and often on a one to one basis with the clinician. Clinicians ensure that students receive hands-on experience and feedback on their work. Students develop their clinical skills through their full involvement in case management under suitable supervision. The fourth (clinical) year is practically free from scheduled lectures but includes morning ward rounds in each department and case presentation once a week. The instruction provided includes basic clinical training across common domestic species. Most of the year is spent in rotations at the teaching hospital of the Koret School of Veterinary Medicine where the students are directly supervised by one of our specialists or residents in each department. The morning meetings are regularly attended by all the staff that are “on clinics” in the same week and hence run by the board certified personnel present in each week. At the end of each rotation the staff on duty during that particular rotation fills in a form to evaluate the students’ performance. This evaluation is based on the students basic

knowledge, ability to logically use the problem oriented approach to diagnosis and patient care, the students willingness to work hard and his/her relationships with his fellow students, owners and supervising clinicians. Also, his/her attitude to the welfare of his/her patients is considered.

Some of the clinical rotations are held outside the university facility. These include farm animal medicine, poultry, public health and pathology. In these areas, the students are accompanied by a highly qualified veterinarian in the field and learn through a structured teaching program that includes clinical and hand on experience, seminars, visits to veterinary and farm facilities where the activity takes place (slaughter house, poultry enclosure, food producing factories, etc). For production animals such as cows or sheep, practical work includes farm case-based training.

In veterinary food hygiene/public health, practical training familiarizes students with food hygiene and control at various stages in the food chain. Students are exposed to the various stages and steps of inspection through which the food product goes from the animal to the plate. They witness the ante-mortem inspection, killing and post-mortem examination aimed to ensure the quality of food product at the beginning of the process, and the work of the official veterinarians, inspectors of food producing factories, transportation and quality control of the end product before it is sold as food for people. All the teachers, veterinarians and facilities used to teach students during this rotation are regularly evaluated by the course coordinator who is a senior lecturer in our school and approved by the curriculum committee.

Another less formal way in which we regularly evaluate the overall curriculum and training of our students is through personal interviews with students from our school that have undertaken an externship in an overseas country during their fourth year. We ask the students to what extent they felt well prepared for the academic and clinical challenges presented to them during the externship and to compare themselves with their peers with respect to their level of overall knowledge and technical skills.

Course organizers are advised to collect questions from examinations given in veterinary schools in other countries and present them as part of their exam in order to verify that similar level of knowledge is achieved.

In our school most of the theoretical clinical teaching is given by our board certified clinical staff that also supervises and serves as clinical instructors during the fourth year. This ensures that all the theoretical knowledge taught in the first years will be carried out and enhanced through demonstration and hand on experience while working on real cases during the last and clinical year.

5.1.1 THE TEACHING PROGRAMME

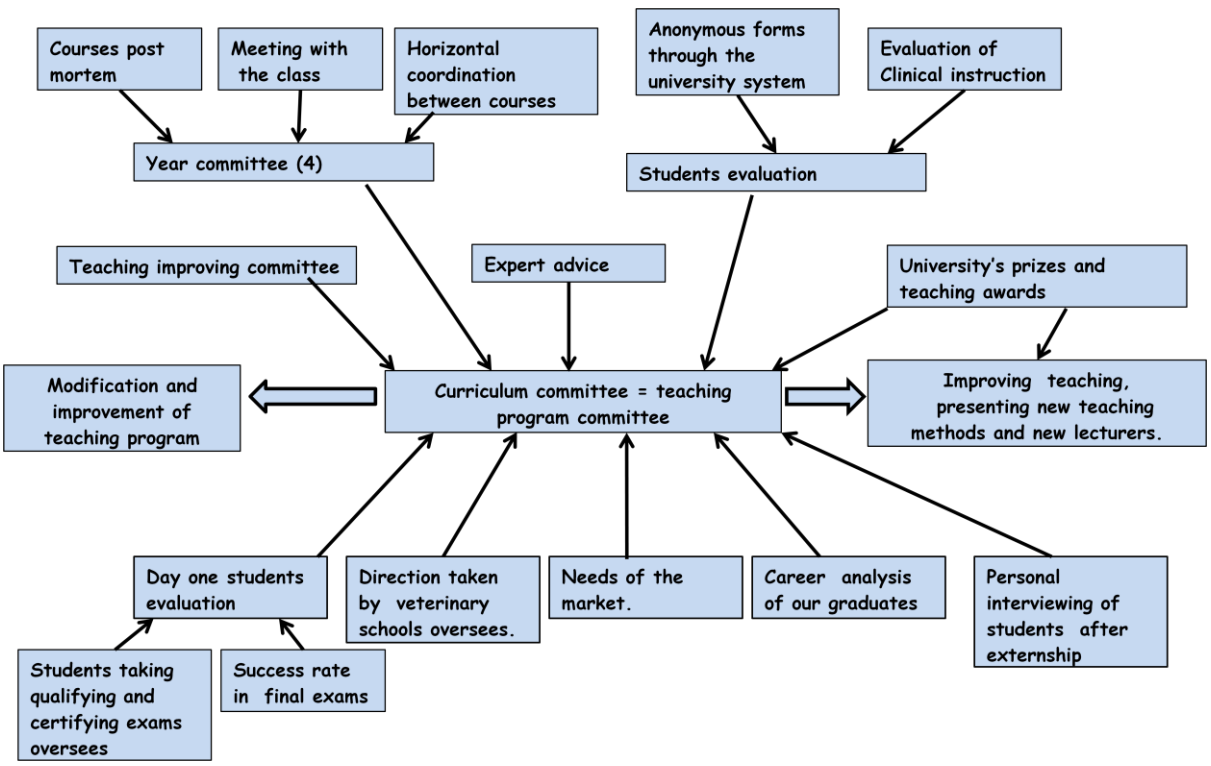
Co-ordination of teaching

At the Koret School of Veterinary Medicine all students follow the identical program and a single comprehensive curriculum common to all, except for few elective courses offered to the third year students and a few open elective clinical rotations in the last year. Having received a comprehensive training our graduates are licensed by the Ministry of Agriculture to practice all fields of veterinary medicine upon graduation. As our curriculum is approved by the Ministry of Agriculture the graduates of the Koret School of Veterinary Medicine do not have to take a licensing examination as do graduates of all other schools.

It is the goal as the curriculum planning committee is to make sure our teaching program meets the current basic needs of each and every field of veterinary profession without compromising the quality of teaching and is in compliance with the Directive 2005/36/EC. In order to achieve this goal and be able to provide excellent modern training for our students our curriculum committee is made up of members of all school departments and disciplines and regularly consult and cooperate with department heads and course coordinators who are not members of the committee. The relatively small size of our school in terms of number of staff members is a benefit in a way. The fact that the same people are members of several different committees, enable close cooperation and communication between committees.

In the Koret School of Veterinary Medicine successfully completing each year is a pre-requisite for starting the next year as courses presented in a given year are based on the knowledge achieved in courses taken in the previous years. In order for that to happen a good vertical coordination between teachers and courses is necessary. In our school we have initiated a method where the board certified personnel who teach the clinical course in the third year will participate at least in part of the teaching in the basic science courses of the first two pre-clinical years. For instance one of our surgeons who lecture in small animal surgery is the course coordinator and principal teacher of comparative anatomy course given in the first year. Other senior lecturers that teach the clinical courses of the third year also take part in anatomy, physiology, pharmacology, introduction to clinical methods, clinical pathology and radiology. In this way the vertical coordination of the teaching program is not only kept but pre-planned so that what is taught in the first two years is the basis of what is taught in the third and fourth year. In order to prevent redundancy, horizontal coordination is also necessary and is achieved by the hard work of the year committees

Figure 5.1.1: The role of the curriculum committee in the teaching programme



Curriculum modification and updating is a constant process performed by the curriculum committee with the constant input from all subcommittees, department heads, and leading personnel in veterinary medicine, student's evaluations reports and others. The committee meets 6 times a year to present, discuss and decide on changes in the teaching program, teaching personnel and teaching methods.

Other issues such as student's affairs and minor temporary alternation in the teaching program are discussed by the year committee and only rarely brought to the attention of all the members of the curriculum committee. Occasionally when an issue is brought up for discussion, an expert is invited to consult the committee. This person can be either from the school's academic staff or not. If a change in a course is desired the course coordinator will be invited to participate in the discussion and most of the time will be the one to present the desired change.

Most courses in the school are multiple teacher courses meaning that two or more lecturers are participating in teaching the course. The school always seeks the best person in the country that can teach a certain topic even if he/she is not a faculty member. For this reason a considerable number of our lecturers are not employees of the Koret School of Veterinary Medicine. Each course has a course coordinator who in most cases is from the school's academic staff. The course coordinator is the person that is responsible for the syllabus and quality of teaching in his course. He needs to be familiar with and periodically evaluate the material taught by other lecturers in his course, go through their notes and exam questions and see that they are appropriate, up to date and of a high standard

Courses notes and standard veterinary textbooks

A recommended reading list is part of the syllabus of each course and is updated by the lecturers each and every year. Some lecturers ask the students to read specific chapters/pages in a certain text book to prepare themselves before the course starts. Providing the students with a reading list that is based on standard veterinary textbooks and that may be complemented by peer reviewed papers is obligatory for each course. In addition, some lecturers have prepared comprehensive notes in Hebrew that are offered to the students before the beginning of the course. These notes are usually based on the current standard veterinary literature but are summarized and highlight the most important ideas and information according to the teacher's point of view. The school's web site contains power-point presentations of most courses in PDF format. Some teachers provide the students with printed notes of their power point lecture presentation which then serves as writing notes into which the students add their remarks during class. We are cognisant of the fact that when

notes in Hebrew are provided, the students will avoid reading the English literature recommended by the teacher. In order to stress the need to be familiar with the standard veterinary textbooks and acquire the habit of consulting the most current publications, teachers are encouraged to integrate self learning, seminars and exercises in their courses. By doing that; students have to practice reading scientific and clinical material and process it into pragmatic and practice information.

***Established arrangements between the faculty and outside bodies*:**

The school works in close cooperation with all veterinary facilities and institutions in Israel. The large variety of clinical exposure needed for completeness of the undergraduate education can only be met when such cooperation exist. Our students meet with veterinary professionals in the field from the first year and throughout the entire learning period. This way they not only get to learn from the most experienced veterinarians in each discipline but also learn to acknowledge the importance of constant dialog between the academia and veterinary medicine in the field. The school cooperates very closely with both the Kimron Veterinary Institute and with the Hahaklait Organisation that is the main body that provides medical care for farm animals. In both cases the cooperation involves frontal teaching during the first three undergraduate years and supervising students in their clinical rotations during the last, fourth year of the veterinary education. While in their clinical rotations, students accompany veterinarians from the Kimron institution or the Hahaklait and get exposed to their work. Teachers from both institutions who meet the academic requirements (teaching and research) of the Hebrew University of Jerusalem may receive adjunct academic appointments. These teachers are considered an essential part of the teaching personnel and take part in curriculum planning and school's committees. Municipal veterinary services including abattoirs and slaughterhouses are open for our students in the last year while they are taking a rotation in public health. Poultry medicine in Israel is primarily run by a state organization that include three major laboratories in which all diagnostic tests are done and post mortem examinations take place. The veterinarians in these laboratories are specialists in poultry medicine and are responsible for the health of the flocks in the area of the laboratory. This is done through regular visits to the farms collecting samples and performing all diagnostic tests and routine treatments as needed. Students in the final year rotate in one or more of these laboratories and work with the veterinarian during these two weeks rotation. As part of the elective rotations students are entitled to work with private veterinarians in different cities around Israel. They can also choose to join private farm animal doctors. Almost all veterinarians are happy to cooperate and have students work with them for a period of two weeks. Each outside rotation as such, must be approved in advance by the head of the fourth year committee to make

sure the veterinarian and the facility meet the standard required for teaching our students. The veterinarians are also required to report back to the head of the 4th year committee on the student's performance during such a rotation.

In the last few years the cooperation between the school and the Israel nature authorities were tightened. The school's specialists are often being called to consult on sick wild animal that are brought in from the nature authorities as well as on captive animals from any of the zoological gardens in the country. Students are always part of this activity; they join the specialists as they examine the animal or treat it and hence are exposed to proper handling of wild animals and experience different ways of restraining and treating an animal that is not used to human touch.

Learning objectives

The Koret School of Veterinary Medicine is the only veterinary school in Israel and as such is obliged to train and authorize veterinarians to fill the state needs in each field and discipline of veterinary medicine. As part of the Hebrew University of Jerusalem the school strives for excellence and wishes to play an important role in veterinary research. As part of the global veterinary community the school is aiming to contribute to the progression of the veterinary profession in the region and worldwide. For these objectives to be fulfilled the school management is constantly encouraging students to strive for the best and the school will invest in research facilities and grants, support the combined DVM -PHD programme and promote different disciplines when needed. The school's senior personnel are in constant contact with colleagues outside the university, each in his/her own discipline; by doing that they are continuously updated with the professional needs. This information is brought to the Curriculum committee meeting and the latter modify the learning program so it will fit with the emerging need.

All students in our school must lead and perform a research project as part of the undergraduate program; this enables each and every student to experience research methodology and scientific thinking and open the door for them to pursue their career in research. Most of the students projects are of a high enough quality and importance for publication in a peer review journal.

This also assists us in achieving the goal of our day one students to being able to choose any path and field of veterinary medicine upon graduation. For this to be possible they must be equipped with current core knowledge and skills in each and every discipline and be familiar and open minded for the different career options.

Evidences of day one skills

No formal way exists in which the school collects information regarding the level of our day one graduates. We do know that for many years, graduates of our school are preferred by most if not all employers in the country. We also know from young graduates that attempted to start off a career in the USA, that they had no difficulties passing the board examination anywhere they tried. Graduates of our school are often matched through the US matching program and complete internship and residencies in the USA. From personal communication with colleagues in veterinary schools overseas we learn that our graduates do not fail to meet the higher standards of their schools.
The relative small community of veterinarians in Israel and the tight connections among us enable the school personnel to meet regularly with graduates that became practitioners all around the country. These young doctors become the referring veterinarians and as the years pass they take over key positions in many veterinary facilities and services. These anecdotal impressions accumulate though the years and build up to form a positive evaluation on our day one graduates.

5.1.2 THE TEACHING ENVIRONMENT

Staff development and improvement of teaching skills.

Teachers that are part of the Hebrew University personnel and either work for the teaching hospital or at the schools facility on the campus of the Faculty of Agriculture work in an academic atmosphere are engaged in research and take active part in all educational programs of the hospital or the school. These may include weekly rounds and seminars, continuing education courses held few times each year, department journal clubs and literature reading meetings and attending national and international conferences and continuing education courses. Our teachers are encouraged to take part in teaching courses held by the Hebrew University or by the Faculty of Agriculture. Time to participate in these courses is given to everyone. Weekly staff seminars, in which each member of the staff present a topic once every few months is another way in which everyone gets to teach a subject to the staff. In this way he or she not only gets to deepen and update their knowledge in their field but also gets the opportunity to speak to more senior staff members and get feedback on the quality of lecturing.

Available system for reward of teaching excellence

The Hebrew University of Jerusalem runs an anonymous teaching evaluation system by which the students get to fill electronic forms for each of their teachers. The centre for teaching at the University collects and analyzes the evaluation forms from all students and ranks the teachers from the best to the worse in comparison to other teachers of the school and of the university. This information is then sent to the teacher but also to the head of the school and to the head of the curriculum committee. The five best teachers of the school will get a letter from the rector of the Hebrew University and from the dean of the Faculty of Agriculture to recommend them on their achievement. This recommendation is taken in to account when the teacher is considered for promotion. On these forms there is also a place in which the students can freely write their opinion and remarks on the teaching. Each lecturer takes these remarks very seriously and makes the effort to improve his performance in the following year. All lecturers are well informed on the importance of their quality of teaching to their career and future at the university.

5.1.3 THE EXAMINATION SYSTEM

As the Koret School of Veterinary Medicine has academic autonomy our school runs an independent examination system based on our own exam policy. All lecturers and course coordinators must follow the general regulation laid down by the curriculum committee. The number of questions should be correlated to the number of hours taught in each subject. Mostly this follows the key of one to two questions for each academic hour. The exam should be planned to take no longer than three hours to complete for an average student. We encourage the lecturers to write multiple choice questions but open questions and short assays are all accepted. Practical and clinical examination such as reading radiographs, EKG leads, histology slides and more are routinely used as part of the examinations of relevant courses. All students have to pass a clinical examination test at the end of the course “Introduction to clinical methods” in which they learn how to perform physical examination on various domestic animals. Lecturers are free to choose their preferred way of examining the students as long as the method is approved by the curriculum committee and is announced to the students before the beginning of the course. Some elect to give the mark based on quizzes during the semester, with or without a final examination. Oral examinations are also part of our examination system, the final examination done at the end of the clinical year combines multiple choice questionnaires that are followed by an oral exam. During the final oral examination the students receive a virtual case to solve during which process they request different tests and have to interpret them and come up with the most possible diagnosis and treatment. This final exam

combines theoretical knowledge with clinical skills. .
Grades at the Hebrew University are given as percentage; the passing grade is set at 65%. Students that failed or wish to improve a certain grade can retake the exam once. The format of the second exam should be the same as the first but can be different pending approval of the curriculum committee. Students that fail the second time must repeat the course which means that they cannot move to the next year. Courses of a certain year are all considered prerequisites for the courses of the following year. Therefore students must pass all exams of all courses in a certain year in order to be able to start the next academic year. A third attempt to pass an exam may be permitted under certain circumstance but must be approved by the subcommittee of the curriculum committee. If student fails to pass a year he/she will retake the courses he failed in but also all courses in which the mark was below 70. This way we expect the student to not only pass the courses he failed but also to perform better in courses he was weak in.
At the end of each of the two semesters there is an examination period into which we schedule all exams. The length of this period is 4 – 6 weeks and the number of days between two sequential exams is 2-8 days. The secretary of academic affairs prepares the exam timetable according to the amount of time needed for study for each exam. During the examination period no formal teaching takes place, lecturers may meet with the students for rehearsal or to answer questions that were raised during their preparation.

5.1.4 EVALUATION OF TEACHING AND LEARNING

During the first three years when most of the teaching is in the form of frontal lectures, anonymous student's evaluations and attendance by a senior lecturer are the two major formal ways of teaching evaluations. Both end up in the teacher's personal file and are crucial to promotion and career progress. The anonymous forms are electronic and students fill them on each and every teacher they had during the semester. The filled forms are then analyzed by the office of teaching evaluation of the Hebrew university who grade all teachers and courses and send the lecturer evaluation form with all the details (eg. Number of students that filled the form, the mark the teacher got for his teaching performance, the mark the course got, and the relative grade he got in comparison to other teachers of the university and of the school of veterinary medicine) to the teacher. The same file is also sent to the head of the school and is filed in the teacher's personal file for future uses. On the same form, students have an open space where they can freely express their opinion both on the teaching, the teacher and the course. Teachers read these remarks with attention and are doing their best to improve whenever necessary. This information is also available to the curriculum committee when planning the next year. Lecturers

that regularly receive bad marks by the students and fail to improve will be relieved from teaching in the school. Best teachers of each year will receive an honour letter from the rector of the university that states the importance of quality teaching to the Hebrew university.

A senior lecture, mostly the head of the curriculum committee or the head of the school will regularly attend lectures of junior lecturer prior to promotion. They will then fill up a form that will be used in the future when promotion will be considered. The senior lecturer will discuss his/her opinion on the teaching and lecture with the teacher and try to comment on how teaching can be improved.

Other ways of teaching evaluation co exist in the school which are less formal but very efficient in day to day improvement of the teaching and learning. The head of the year committee regularly meet with the class and the class representative to discuss day to day issues that may be solved in the short term. Students will bring up problem with teachers, teaching facilities (opening hours of library' number of text book copies available and more, suboptimal acoustics in class), lack of time for self learning and more, these issues are then addresses by the head of the year committee who with the help with the administration of the school will see that these issues receive attention. At the end of each semester we perform a debriefing of some of the courses. These courses are either new or the teacher is new and we would like to know whether to continue with the same format in the future, or if it was a problematic course in the past and we would like to know if things were improved. These debriefings are done with two or three students from the class, the teacher and the year committee. In this way the teacher meets directly with the students, hear their complaints and complements and discuss ways to improve when needed.

The Communication committee is another subcommittee of the curriculum committee that meets with students' representatives from all four classes and discusses issues that have to do with learning environment and atmosphere that has an effect on teaching and learning. From meetings with students in this framework we learn more about teacher's attitude and manners, and problems the students sometime have with other personnel in the staff. Solving these issues often improve communication between the students, the school administration and lecturers, hence improve learning atmosphere and motivation.

In the fourth year the students rotate through different departments of the teaching hospital (7-8 months) and at different veterinary facilities outside the university. While they rotate through the different departments it is the department head that deals with collecting their opinions on each rotation, clinical instructors, interns and more. Some departments have a routine of an "end of rotation discussion" meeting with the students at which time the student receives an oral evaluation of his (or her) performance during the rotation but then the students are asked to tell the staff their opinion on the rotation. Most students are very honest and do not seem to try to smooth things over. They all care about the school and wish to improve it and

therefore are willing to criticise when they feel it is needed. The head of the year committee also meets with the class a few times a year and gets their opinion on the rotations and clinical instructors in and outside of the teaching hospital. At the end of the fourth year the students are asked to fill out an electronic evaluation form for each clinical instructor they worked with. This applies to interns, residents, specialists and department heads. These forms are sent to the school secretary of academic affairs who analyzes the results and sends them to the clinical instructor and to the head of the school and head of the curriculum committee. These forms are primarily used by the instructors themselves in order to improve their performance in the following year. The hospital and school management use the information when considering promotion career progression or future employment of an intern or a resident. Teaching capability is one of the most important criteria when choosing a new staff member both to the teaching hospital and to the school.

5.1.5 STUDENT WELFARE

Work with live animals:
Students are provided with vaccinations for preventing zoonoses, according to the risk of their work, including: tetanus vaccination for students working with live animals (including rodents), rabies vaccination for work with dogs, cats, bats etc.; and hepatitis A and B vaccination for work with primates. **All veterinary students have to be vaccinated against rabies before being allowed to work with animals.** They are provided with personal protective gear (as required) including gloves, lab coats and safety glasses/face shields. There are sharps containers throughout the facility, for safe disposal of needle, scalpel and other sharps.
Animal carcasses are placed in a dedicated freezer, and sent for incineration off-campus.

Work with preserved animals:
Students in the anatomy dissection labs are provided with latex and nitrile gloves, safety glasses and lab coats for splash protection. Any work with specimens preserved in toxic fluids (such as formaldehyde-containing preservative) are conducted on special ventilated down-draft dissection tables, to prevent exposure to hazardous vapours. In the anatomy lab there are 10 such tables with air suction ventilators for protecting the students from preservation fluid aerosol. There are 17 computers with installed anatomy programs for the student use during their practice. -20^{o}C freezers and +4^{o}C refrigerators are located in the lab for keeping carcasses.
All external parasites are removed from the carcasses before the students use them. Carcasses that we use are received from municipal shelters, these are

animals that have been observed for more than 10 days and then euthanized. Most carcasses used in the laboratory undergo preservation treatment that eradicates most pathogens. Before the first laboratory there is a lecture on safety regulations and possible hazards. All students are familiar with first aid box that is in the laboratory.

The students are instructed in sharps safety including safe handling of dissection tools and scalpels, and there are sharps disposal containers in the dissection laboratory. There is a first-aid kit available for local treatment, as well as campus first responders who undergo advanced first aid training, are equipped with advanced first-aid kits and are trained to use the two campus defibrillators. Accidents and incidents are referred to the local hospital (Kaplan Hospital in Rehovot) and are reported in writing to the administration and to the Safety Department, which is responsible for work-related accident investigation.

Safety staff:
The University safety staff, including a Campus Safety Officer and Safety Specialists (Biological Safety, Chemical Safety, Radiation Safety, Hygiene, Hazardous Waste Treatment) are also available for risk assessment and safety training regarding routine procedures and special cases , such as work with BSL 2 pathogens, field work, mixed chemical-biological hazards etc. Furthermore, the Campus Safety Committee meets periodically, and is the venue for discussion of program development, accidents, and other safety issues, which are referred to the University Safety Committee as needed. When necessary, outside agencies are consulted including the Occupational Inspectorate of the Ministry of Trade and Commerce, the Agriculture Ministry, The Health Ministry, the Environmental Defence Ministry, the Fire Department, the Police Force and the Rehovot Municipality.

The University offers the students many other facilities not related to the teaching programme. These are all coordinated through the office of the Dean for Students Affairs. Include social services, sport facilities, dormitories with laundry and cooking facilities, gardens, WiFi etc, nursing rooms for mothers and babies and more

5.2. COMMENTS

The present Curriculum Committee is very active and its responsibility for the teaching has been valuable for the development of better courses based on the ever changing needs of the profession. The teacher is responsible for the content of the course, and to supply the students with the most current and comprehensive information possible. The teacher has to follow the general guidelines set by the University for the Preparation of notes, presentations, reading list and examination

format.

In the last few years the basic concept of teaching has been changed. The change was based on a 2 day workshop in which all teachers participated and evaluated curricula from several leading schools abroad. The participants in the workshop concluded that change should be made in view of explosion of knowledge in the last decade and the tremendous technical progress enabling accessibility of the most current information to all through the internet and other electronic media. It was less essential for teachers to cover all the material in the form of frontal lectures. It was decided that we would cut about 20% of the overall frontal teaching hours and create time for both self directed and interactive self directed and computer e-learning. Adopting this approach we identified the essential core to be taught to all students and left part of the subject to be given as elective courses. The aim is to modify the teaching so that the students will learn medical thinking, clinical problem solving, and critical reading of scientific information. With these tools in hand we believe that our graduates will be better prepared for the professional life of a modern veterinarian. Although students prefer the traditional way of teaching where the teacher gives all the information “needed for the exam” in an organized and comprehensive way, we still insist on introducing a more thought producing way of teaching whenever possible and force the students to take an active part in the learning process.

The veterinary curriculum is demanding, and the year committees who meet regularly with the students are able to identify problems of students who are unable to cope and provide them with the necessary guidance.

There is still a variation in the quality of courses. In general, students have been very satisfied with courses and appreciate the effort put in to improving and changing both content and teachers.

All course presentations are now available to the students on the school website, all teachers are required to upload their presentation and updated syllabi at the beginning of each semester. This enables students to print the notes ahead of time so they are available to them in the class or to use laptops for updating these notes in the classroom, a feature which the students are very happy with and which assists them later in their self study.

We believe the learning through experience consolidates memory and makes the information more retrievable. For this reason our curriculum is gradually being modified so the students will be exposed to clinical cases and experience clinical thinking as early as possible in the training program. We invest a lot of effort and

resources in the last year of their training. This year is 12 months long (equivalent to 3.5 semesters) and very intense. Students work with the clinical instructors at the teaching hospital and veterinarians in the field and experience all areas of veterinary profession. The approach throughout this clinical year is very academic. Each morning starts with morning rounds and discussion of cases. Each student works closely with a doctor on cases and learn step by step how a diagnosis is made, treatment options and how medical problems are solved. They also follow up on their cases through the therapeutic period. The students often complain that the long working day in the clinic prevents them from reading and improving their knowledge. Toward the end of the year they are all convinced that being exposed to the large variety of clinical situations and practicing all aspects of veterinary profession was an essential part of their training.

The logistics of the teaching and exam schedules are handled by the secretary for student affairs who keeps them updated regularly through email.

5.3 SUGGESTIONS

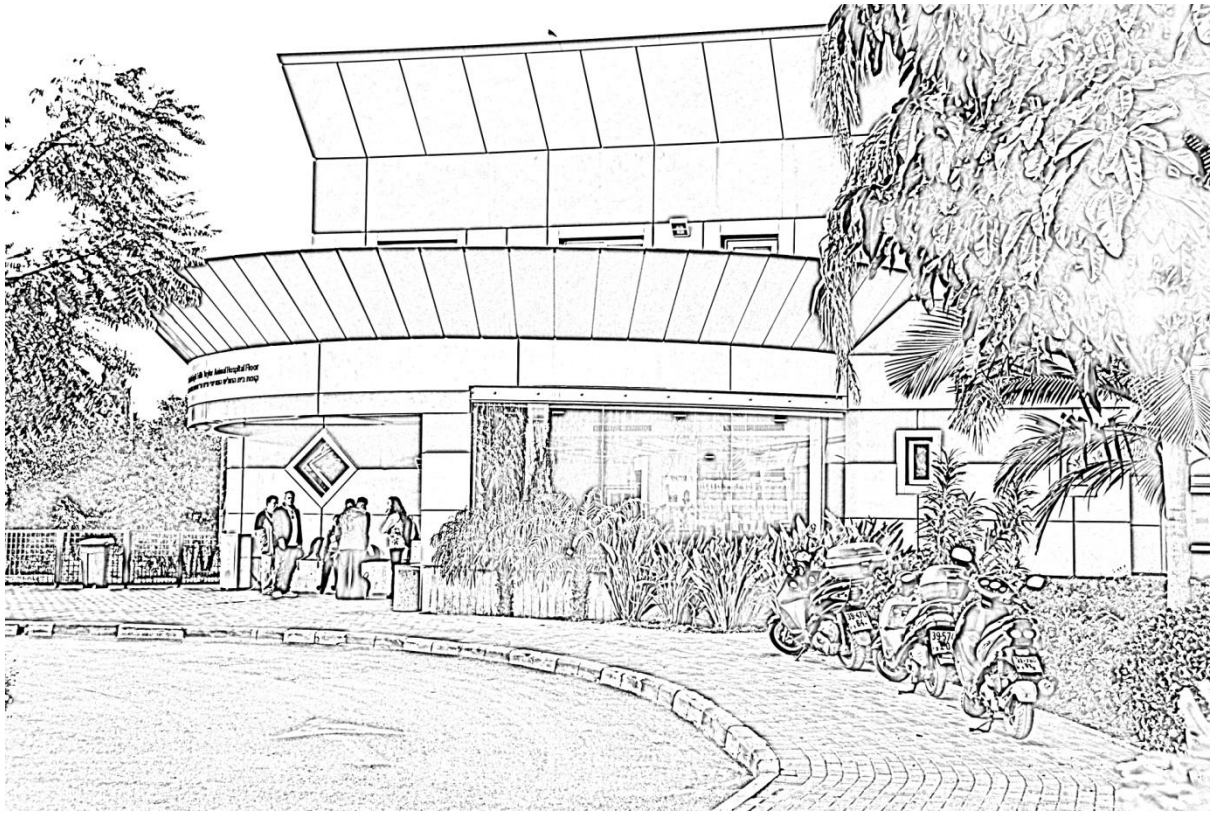
A subcommittee of the curriculum committee was appointed last year, its task is to find ways the current manpower of the school will create and administer a more formal and thorough evaluation of teaching as well as improving teaching and the perform quality control of teaching program of the school.

- The committee will nominate a mentor for each new lecturer, assist in preparation of his presentations and guide and supervise the lecturer but also attend his lectures a few times during the semester and fill an evaluation form.
- Teachers will be encouraged to take advance courses on teaching and developing teaching skills provided by the Hebrew University of Jerusalem. The promotion will be dependent on participation in such courses

The curriculum committee has recently appointed a subcommittee which will liaise with the department of medical education of the School of medicine on issues of quality assurance of courses and teachers

6

Facilities and Equipment



Chapter 6. FACILITIES AND EQUIPMENT

3.1 FACTUAL INFORMATION

The Koret School of Veterinary Medicine is situated on 2 sites:

1. The Robert H. Smith Faculty of Agriculture, Food and Environment Campus in Rehovot
2. The Ministry of Agriculture Campus in Rishon LeZion

The 2 campuses are about 10Km apart on a major double lane road.

4.3.1 Premises in general

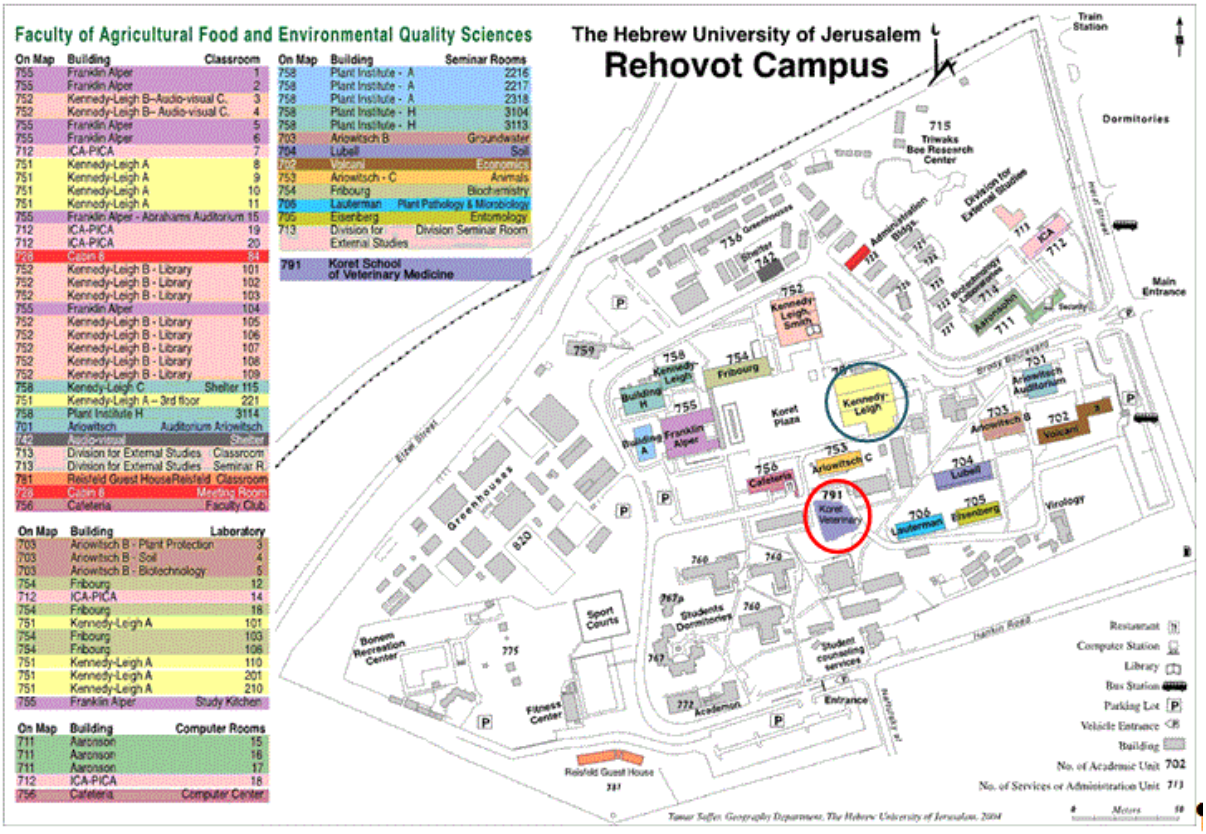
A. The Faculty of Agriculture, Food and Environment Campus.

On this campus the Koret School of Veterinary Medicine has the following facilities;

- A newly constructed 4 story building of ~4,000m^2 containing
  - Administrative Headquarters of the school
  - Meeting rooms
  - Anatomy laboratories
  - Research laboratories
  - Level P3 laboratory animal holding facilities (currently functioning as specific pathogen free (SPF) unit).
  - Faculty offices
  - Research student offices and research facilities
- Three classrooms suitable for about 60 students each in the library building (rooms 101,102,108)
- Histopathology laboratory in the Kennedy Leigh (room 110), 57 seats, equipped with 36 computerised microscopes, computerized microscope with projection and distribution facilities.
- Teaching laboratories in soon to be completed dedicated student laboratory building

- Comprehensive library facilities in the main library
- Computer classrooms
- Multimedia classrooms

Map of the Rehovot Campus



Map of the Faculty of Agriculture

Koret School of Veterinary Medicine, Research and Administration Building circled in red, situated in the centre of the Faculty of Agriculture. Library Building circled in blue.

B. The Ministry of Agriculture Campus in Rishon LeZion

The Ministry of Agriculture campus is the site of the Government Veterinary Diagnostic Laboratories known as the Kimron Veterinary Institute and the Government Horticultural Research Institute known as the Volcani Research Institute. Adjacent to these institutions the Ministry of Agriculture provided land

14,120m^2 for the construction of the Veterinary Teaching Hospital of the Hebrew University of Jerusalem. The Koret School of Veterinary Medicine has an option to obtain an additional 14,000m^2 when needed. The reason for choosing this site was to allow for the Koret School of Veterinary Medicine to utilize the infrastructure (facilities and equipment) of the Kimron Veterinary Institute, use the institute personnel for teaching and enter into joint research projects.

On this campus, the Koret School of Veterinary Medicine has the following facilities available for teaching and research:

- The Veterinary Teaching Hospital
- The Kimron Veterinary Institute
    - Library
    - Post Mortem and pathology facilities
    - Poultry Diseases Department
    - Parasitology departments
    - Microbiology and Toxicology Diagnostic Departments
    - Pharmacology and food contaminants
- The Volcani Research Institute
    - Dairy Herd, milking parlour
    - Flock of sheep

The Veterinary Teaching Hospital

The Veterinary Teaching Hospital is situated on a site of 14,120m^2 and an additional 14,000m^2 has been made available by the Ministry of Agriculture pending final agreement of the University. The Veterinary Teaching Hospital consists of 4,500m^2 encompassing a ground floor and an additional floor above the Small Animal section

Ground floor - Veterinary Teaching Hospital

Reception and waiting area
Pharmacy
Small Animal Clinics and hospitalization
Imaging
Surgery
Equine clinics and hospitalization

Meeting rooms
Auditorium (166 seats)
Administration and Business offices
Air raid shelter – used as classroom (50 seats)
Cafeteria
Conference room (in administration office building).

First floor – Veterinary Teaching Hospital
Faculty offices
Conference room
Teaching laboratory
Classroom (58 seats)
Student facilities
Diagnostic laboratory
Clinical library
Student Computer room

6.1.2 Premises used for clinics and hospitalisation

All premises used for clinics and hospitalisation are located at the Veterinary Teaching Hospital

Table 6.1: Places available for hospitalization for the animals to be accommodated

	Species	**No. Places**
Regular Hospitalisation	Cattle	0
	Horses	38
	Small ruminants	0
	Pigs	0
	Dogs	38
	Cats	12
	Exotics	4
Isolation Facilities	Dogs	4
	Cats	4
	Horses	2

The equine hospitalisation stalls are multi-purpose stalls and can be used for any medium to large size animal such as cattle, sheep, goats and wild species from zoo's.

6.1.3 Premises for animals

The Koret School of Veterinary Medicine does not keep food animals for teaching purposes. However, on the same site as the Veterinary Teaching Hospital the Volcani institute has a dairy farm with 200 milking cows, 160 replacement heifers and a flock of sheep for meat and 300 ewes that have been made available to the Koret School of Veterinary Medicine for teaching purposes.

The Koret School of Veterinary Medicine keeps 4 horses at the Veterinary Teaching Hospital for teaching purposes and students and staff bring their personal dogs when needed for teaching.

Farm animal clinical training is obtained though the Koret School of Veterinary Medicine Farm Animal Ambulatory Clinic. This clinic is described in detail in Chapter 7; 7.1.8.1 AMBULATORY (MOBILE) CLINIC.

6.1.4 Premises used for theoretical, practical and supervised teaching

Table 6.2: Premises for clinical work and student training

Species	Facility	No. available
Small Animals	Consulting rooms	9
	Surgical suites	3
Equine and Farm animals	Consulting rooms	1 with 2 exam stocks
	Surgical suites	1
Other	Consulting room	1 (exotics)
	Conference rooms (used for teaching rounds)	3
	Class rooms	2
	Auditorium	1

Table 6.3: Premises for lecturing at the Faculty of Agriculture and Veterinary Teaching Hospital Campuses

Building	Room number	Number of Places
Kennedy-Leigh, Library	101	58
Kennedy-Leigh, Library	102	61
Kennedy-Leigh, Library	108	67
Kennedy-Leigh building	110	57
Veterinary Teaching Hospital, 2nd floor		58
Veterinary Teaching Hospital, Air raid shelter		50
Veterinary Teaching Hospital Auditorium		166

Table 6.4: Premises for group work (Number of rooms that can be used for supervised group work)

Room	Number of Places
Seminar room, Koret School of Veterinary Medicine	**22**
Seminar room, Koret School of Veterinary Medicine	**12**
3 Computer rooms for group courses using computers	**21 -29/room**
3 Multimedia classrooms – Koret School of Veterinary Medicine	**60/room**
Seminar room, 2nd floor, Veterinary Teaching Hospital	**30**
Seminar room, caravan, Veterinary Teaching Hospital	**20**
Student Computer room, Veterinary Teaching Hospital	**10**

Table 6.5: Premises for practical work (Number of laboratories for practical work by students)

Laboratory	**Number of Places**
Histology Laboratory	57
Histopathology (Kimron Veterinary Institute)	5
Necropsy	Up to 6/ rotation
Microscope laboratory Veterinary Teaching Hospital	5
Anatomy dissecting tables	60
Anatomy computers	16

Students also have the use of the following computer facilities at the Faculty of Agriculture;
Ginges Computer Center – 60 computers
Student Dormitories - 8 computers
Internet Café workstations 15 computers
WiFi on many locations at the Faculty of Agriculture campus

Some of the facilities are shared with other departments at the Faculty of Agriculture.

All computer facilities are administered and maintained by the Faculty Computer Department. Laboratory facilities other than the anatomy laboratory are joint facilities used mainly by the Veterinary School and the Department of Animal Sciences. They are prepared by the relevant instructors from the Koret School of Veterinary Medicine or the Department of Animal Science. The Faculty has a department responsible for work safety; this department is also responsible for work safety at the Veterinary Teaching Hospital. They deal with hazardous waste disposal, radiation safety, pollution, biologicals, biological wastes and laboratory safety. The laboratories are equipped with appropriate fume cupboards, and the facilities have eye-wash fountains and emergency showers, as well as fire extinguishing equipment. Protective clothing and footwear must be used in facilities where microbes or infectious materials are handled. The laboratories have modern safety equipment and cleansing facilities. Students also have access to locker rooms and shower facilities. First aid facilities and emergency showers are available at various strategic points on each floor. An independent University Security Department deals with all other security issues including civil defence drills and shelters. All faculty and hospital facilities have security guards at the entrance to the campus and 24 hour patrols. The Veterinary Teaching Hospital also has security guards at the front door.

6.1.5 Diagnostic laboratories and clinical support services

Diagnostic laboratories

The Hebrew University Veterinary Teaching Hospital Diagnostic Laboratory:

The laboratory operates 24 hours a day, 365 days/year. Full services are provided from 08:00-22:00, and emergency services are provided from 22:00-08:00.The laboratory provides diagnostic services to the Veterinary Teaching Hospital and receives also referrals from other veterinarians. It has state of the art haematology, biochemistry, endocrinology and coagulation analyzers and thus performs a wide variety of diagnostic tests. In addition, it performs serological testing, routine urinalysis, fecal analysis and cytology of fine needle aspirates and body fluids. It receives over 200 referrals daily, most from the Veterinary Teaching Hospital, and performs over 1000 individual tests daily. In addition it handles all the laboratory requests that eventually are outsourced. The laboratory includes a microscopy room with multi-headed microscopes, in which clinical pathologists and clinicians examine their samples, and teach students in their clinical rotations. The laboratory also provides services for the dermatology service of the Veterinary Teaching Hospital. Samples for special tests, unavailable at the hospital laboratory (e.g., cTLI, folate, B12, certain hormones and special chemistry) are routinely sent to diagnostic laboratories in Israeli human hospitals as well as to veterinary laboratories in Europe and the USA. The Kimron Veterinary Institute (KVI): The KVI is a governmental research institute and provides diagnostic services to veterinary clinicians and to the public. It is run by the Israeli Ministry of Agriculture. The Veterinary Teaching Hospital has been using and working in collaboration with the KVI laboratories since the establishment of the VTH (1988) for certain tests that are not available at the Veterinary Teaching Hospital Diagnostic Laboratory. Most importantly, these include pathology and histopathology (all animal species), bacteriology and mycology (dogs, cats, horses, farm animals and exotic animals), virology (horses and farm animals), toxicology (all animal species) and parasitology (all animal species). Milk samples from farm animals are handled by the Milk Laboratory, KVI, and diagnostic tests include; cell counting, bacteriology, milk quality and immunohistochemistry. The Department of Pathology, KVI performs all the necropsies requested by the VTH, for all animal species, with exception of avian species (These are done in the Department of Avian Medicine, KVI). Students perform necropsy and examine histopatholgic samples under guidance of the KVI pathologists. The average number of necropsies is 5 to 10 daily, and the number of histopathology slides is 10 to 30 daily. The KVI laboratories are equipped with state of the art equipment in the above fields.

Histopathology of biopsy samples is also outsourced to Dr. Ori Brenner, DVM, DACVP at the Weitzman Institute of Science, Rehovot. Dr. Brenner also teaches histology and

pathology at the KSVM. In 2009 these amounted on average to 2-4 biopsy samples daily.
Molecular biology tests are done at the laboratory facilities at the Koret School of Veterinary Medicine, Rehovot Campus. These include testing for rickettssial, protozoal, bacterial and viral agents. Genetic molecular studies are performed in one laboratory. These tests are mainly done for research purposes by the scientists running these laboratories, however, they provide services to the Veterinary Teaching Hospital laboratory and collaborate with Veterinary Teaching Hospital clinicians in routine diagnostic workup as well as in research.

Central Clinical Support Services

Central clinical support for the Veterinary Teaching Hospital comes from the following departments:

Diagnostic laboratory services - see above
Imaging

The imaging department has 3 radiologists, one of which is an Israeli specialist in radiology and a radiology technician. They provide imaging services to the entire Veterinary Teaching Hospital. The equipment and facilities available include Computerized Radiology with 2 X-ray rooms, one specifically for small animals and a second which is used both for small and large animals. They have a portable X-ray unit and a portable C-arm fluoroscope. In addition they have a dedicated CT unit and ultrasound machines. Echocardiography service for all species is provided by the Board Certified cardiologist (ACVC). MRI's are performed off site at a nearby human hospital.

Anaesthesiology
Anaesthesiology services are provided 24 hours a day by an anaesthesiology team to all departments by the anaesthesiology service.

Ophthalmology
A Board Certified (ECVO) ophthalmologist provides and ophthalmology consulting service for all species

Endoscopy services
The small animal internal medicine department provides video endoscopy services to all departments, except large animals who perform their own endoscopies.

Dermatology
The dermatology service provides consultations for all species by a Board Certified dermatologist (ECVD).

6.1.6 Slaughter house facilities

The slaughter house facility that is used for training students is situated in the city of Holon, about 10km from the Veterinary Teaching Hospital, about 18km from the school in Rehovot. It is situated on the outskirts of the city far from any housing development. It is owned jointly by the cities off Holon and Tel Aviv and is operated by an independent contractor. The students are supervised at all times by the veterinarian who teaches this subject and they have free access to all the facilities of the abattoir as well as access to the administrative files of all the veterinarians working at the abattoir. During the 2 week food hygiene rotation in the 4th year, the students spend 2 full days in this in this facility which is used both for bovine and ovine purposes. They are taught all the different aspects of receiving animals at a slaughterhouse, the ante-mortem examinations, the slaughter process, the treatment of the carcass and the internal organs as well as the cooling and freezing processes and appropriate transportation of the meat. As part of the rotation they also have practical experience in veterinary meat inspection. During this time spent in the abattoir, they are also exposed to the administrative work of the slaughter house veterinarian from the time he receives the animals until the meat is dispatched. In addition, they are exposed to the sampling processes and the follow up of specimens sent for laboratory examination as required. Discussions are also held to reinforce and demonstrate the theoretical knowledge gained in the classroom.

6.1.7 Foodstuff processing unit

During the food hygiene course the student have excursions, to visit a food processing plant, where they observe and discuss the processing methods and procedures.

6.1.8 Waste management

Chemical waste from the Veterinary School is deposited in the University hazardous waste collection site, located on the Hebrew University Faculty of Agriculture, Food and Environment campus in Rehovot. It is then sorted, packed and transported semi-annually to the National Waste Treatment Site at Ramat Hovav. Chemical waste disposal is carried out under the supervision of the Hazardous Waste Team of the Department of Occupational and Environmental Safety and Hygiene.

Biological waste from the Veterinary School is divided into the following streams:
- Sharps (needles, blades, pipettes etc) are placed immediately after use in sharps waste containers, which are autoclaved before disposal.
- Laboratory biological waste is either treated by chemical disinfectants, or in an autoclave, before disposal.
- Research animal carcasses are placed in a freezer on the campus, and transported to a licensed disposal facility (E.A.BioEcology Ltd in Ein HaMifratz) for disposal. Here they are incinerated in a facility where the chimney exhaust is monitored by the Ministry of Environment in order to ensure compliance with environmental standards.

6.1.9 Future changes

In October 2010, the new modern Research and Administration building on the Faculty of Agriculture campus in Rehovot was be officially opened by the donor. This building will provide adequate research laboratories and faculty and research student office space for the foreseeable future.

The Veterinary Teaching Hospital is in the process of partial renovation and the planning of a new Emergency and Intensive care unit for which $1.2millon has been donated. As part of the Emergency and Intensive care unit a separate dedicated isolation ward will be constructed. Also a new teaching auditorium will also be built with $250,000 provided by the university.

6.2 Comments

The facilities at the Rehovot campus are presently adequate; the Veterinary Teaching Hospital suffers from a shortage of space in several departments. This will be alleviated in part when the new Emergency and intensive care unit is completed and also when the present class room is enlarged and the new auditorium completed.

New, expensive sophisticated equipment for the Veterinary Teaching Hospital remains a major problem and funds are actively being sought both by the hospital administration and by the university public relations department.

6.3 Suggestions

Now that the Rehovot facilities have been upgraded and will be on a satisfactory level for some years to come, other than an investment in equipment, this facility seems very good and adequate for our teaching and research needs. The Veterinary Teaching Hospital on the other hand needs a major input in improving the infrastructure, renovation of certain areas and enlargement of other areas. In addition, an investment in the latest cutting edge equipment is the top priority.

Student facilities at the Veterinary Teaching Hospital are minimal and need to be improved.

More activity with regards to Food Processing should be introduced to the programme

7

Animals and teaching material of animal origin

Chapter 7. ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

7.1 FACTUAL INFORMATION

7.1.1 ANATOMY

Table 7.1: Material used in practical anatomical training

	Dog		Ruminant		Equine		Poultry	
	Year 2009	Year 2008	Year 2009	Year 2008	Year 2009	Year 2008	Year 2009	Year 2008
Live animals	3	3	1	1	2	2	-	-
Cadavers	20	20	2	2	3	3	25	25
Specimens	>30	>30	5	5	20	20	-	-
Radiology	*	*	*	*	*	*	-	-
Video	*	*	*	*	*	*	-	-
Computer assisted teaching	*	*	-	-	*	*	-	-

*available during laboratories

Anatomy is taught in a State of the Art anatomy laboratory completed 3 years ago. Anatomy teaching is based on the dissection of preserved canine cadaver specimens. Anatomy is taught on a regional basis. Comparative anatomy of clinically important structures of the ruminant and equine are taught during the dissection of specimens from the relevant regions. The course consists of frontal lectures and laboratories. During the laboratories, in addition to the dissections, the students have access to computers with anatomy software packages, videos, models and radiographs. The software that we use is “Virtual Canine Anatomy”. This software was purchased from Colorado State University and is updated annually in terms of the purchase contract.

7.1.2 PATHOLOGY

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

Food-producing animals	Number of Necropsies			
	2009	**2008**	**2007**	**Average**
Cattle	543	711	686	646
Small ruminants	474	506	475	485
Pigs	166	42	69	92
Other farm animals				
Equine	68	81	77	75
Poultry #	~2500	~2500	~2500	~2500
Companion animals				
Dogs	1518	744	1165	1142
Cats	414	246	381	347
Other **	121	92	117	110

Necropsies on all species except poultry are performed in the Pathology Department of the Kimron Veterinary Institute of the Ministry of Agriculture on the same campus as the Veterinary Teaching Hospital.

#Poultry necropsies are performed both in the poultry department of Kimron Veterinary Institute of the Ministry of Agriculture on the same campus as the Veterinary Teaching Hospital and also in the regional poultry laboratories. Students spend one rotation of 2 weeks in the department of pathology and 2 weeks in the poultry rotation part of which is in the poultry department of the Kimron Veterinary Institute and part in the regional poultry laboratories in the final year. The estimate number of poultry necropsies is based on data from the Kimron institute of approximately 10 necropsies each working day or the year.

** rabbits, monkeys, guinea-pigs, mice

7.1.3 Animal production

A. Onsite.

The dairy herd and the flock of sheep of the Volcani Institute adjacent to the Veterinary Teaching Hospital are available to the Koret School of Veterinary Medicine and used for teaching purposes

B. Other sites.

The ambulatory teaching clinic gives veterinary services to 8 dairy farms in the area of the school. Two of these are very large farms with between 500-600 lactating cows each, 2 are medium size farms with 200-250 lactating cows each and 4 smaller farms with 40-80 lactating cows on each farm. In addition, there is beef herd with 300 cows, 3 flocks of dairy sheep with 300-800 lactating ewes and a small herd of dairy goats with about 30 head. There are also 2 feed lots which raise bull calves from the dairy herds ranging from 40-250 head.

7.1.4 Food hygiene/public health

The Public Health rotation, a mandatory rotation is a 2 week (10 working days) rotation during the 4th year of undergraduate veterinary studies. The rotation can also be taken as an additional elective. There are between 13-17 rotations annually, with 2-3 students per rotation. They visit a number of facilities that are controlled by public health veterinarians. The rotation is therefore held in several facilities outside Koret School of Veterinary Medicine .

Students are given introductory lectures by various individuals in their different fields and later (on the same day) are allowed practical exposure in the specific work done by those same people.

Before the rotation, students are given articles to read on a specific topic associated with veterinary public health which they are expected to present to an audience on the final rotation day. They are encouraged to review the subject of these articles beforehand and consult with various experts in the field. For this to be accomplished, the use of additional recent articles from peer reviewed journals is regarded as necessary. An analysis of the methods and statistical tests used in individual articles to prove significance of trends is important for the seminar presentation.

Students undergo training in slaughterhouse management over a 2 day period, including ante mortal and post mortal examination of domestic livestock and poultry. They spend 3 days with various municipal veterinarians where they are taught how zoonotic diseases related to meat hygiene and companion animals are controlled. During this time, students visit quarantine centres, various butcheries, and other places where meat products are sold in raw or cooked state, for later consumption. They are introduced to some common problems faced by municipal veterinarians in their local communities. Municipal vets explain how to achieve a more efficient control of stray dog and cat populations, to reduce the annual incidence of animal bites and

the complaints by residents as regards to barking nuisance, and companion animal litter control. One morning is devoted for the reviewing the HACCP principles. The students attend a two hours lecture, given by a food engineer from the veterinary services. Thereafter, they are given an assignment which includes the preparation of a HACCP program for either a slaughterhouse or a food factory. This assignment is presented to the HACCP instructor at the end of the rotation.

The students spend a morning at a government approved laboratory which undertakes routine bacterial sampling of meat. Here, they are not only made more aware of the various standards available as well as laws that allow for punishment of offenders, but are also shown the procedures commonly performed in a well equipped facility. Later on the same day, the students visit a government veterinarian working in Meat Import and Export control.

Two days of the rotation allow students to accompany a Ministry of Agriculture Veterinarian on his routine rounds. This may vary in nature according to the season, but generally involves the testing of different livestock herds/flocks for transmissible disease, as well as the vaccination and tagging of animals for identification purposes. During this time, the veterinarian explains how notifiable diseases are controlled and the available options for use in case of disease outbreak.

The control of the fish industry is taught on the 9th day of the rotation by a public health veterinarian. Here, the students visit retail stores that sell fish products for the message to be relayed much better. Occasionally, students spend a day with a Nature Conservation Authority veterinarian, where wildlife population and disease control is continually monitored.

On the 10th day, the students deliver a seminar on a relevant topic to a previously invited audience. The seminar is one of an informal nature, during which time differences of opinion may be voiced and debate allows for problem orientated brain storming to take place.

The student's grade at the end of the rotation is made up of their participation during the rotation as well as the quality of their seminar and HACCP project presentation.

7.1.5 CONSULTATION AND PATIENT FLOW SERVICES

7.1.5.1 CONSULTATION

The Veterinary Teaching Hospital is open and offers services 24 hours a day, 365 days each year. The final year of study is not divided into 2 semesters as are other years. The students spend 50 weeks (equivalent to 3.5 semesters) of the final year rotating through various departments of the Veterinary Teaching Hospital and other veterinary facilities. Morning ward rounds take place from 08.30-09.30 and regular consultation hours are from 09.30 - 16.00 Sundays through Thursdays. On Friday and Saturday only emergency cases are received. Students are always present in the hospital and work both night and weekend shifts. Approximately 30-40 cases are seen every day in the Veterinary Teaching Hospital. This does not include the farm animal ambulatory service.

7.1.5.2 PATIENT FLOW

Table 7.3 Number of cases: a) received for consultation, and b) hospitalized in the Veterinary Teaching Hospital in the last 3 years.

Species	**Number of cases**						**Average**
	2009		**2008**		**2007**		
Food Producing	a	b	a	b	a	b	
Bovine	x	x	x	x	x	x	
Ovine/caprine	x	x	x	x	x	x	
Porcine	x	x	x	x	x	x	
Other farm animals	x	x	x	x	x	x	
Poultry	x	x	x	x	x	x	
Rabbits	60	0	26	0	59	0	145
Equine	103	608	83	644	98	696	744
Companion Animals							
Canine	7457	1864	7399	1850	7049	1762	9127
Feline	1637	409	1624	406	1547	387	2004
Exotics	187		175		245		202
TOTAL							**12,222**

No food producing animals are brought to the Veterinary Teaching Hospital for treatment. They are all treated by the ambulatory service see 7.1.8 ON FARM TEACHING AND OUTSIDE PATIENT CARE below

There is no commercial rabbit industry in Israel. Therefore only pet rabbits treated in the Veterinary Teaching Hospital are presented here.

Poultry are not presented to the Veterinary Teaching Hospital for treatment. They are taken care of by poultry veterinarians, either private or from regional poultry laboratories. The final year students which are on their 2 week poultry rotation participate in farm visits with and also perform necropsies both in the regional laboratories and in poultry department at the Kimron Veterinary Institute.

7.1.6 VEHICLES FOR ANIMAL TRANSPORT

The School of Veterinary Medicine does not have vehicles available for transport of animals. All equine clients transport their horses themselves or arrange for professional transporters to transfer the horse to and from the hospital. Farm animals are rarely transported to the hospital. When necessary the transportation is done by the owner. The Veterinary Teaching Hospital has a small tractor for transporting large carcasses to the necropsy hall which is a hundred meters away.

7.1.7 ON-CALL EMERGENCY SERVICE

The Veterinary Teaching Hospital operates and Small Animal Emergency and Critical Care service 24 hours per day 365 days per year. They are able to call on support from a wide range of “on call” specialists (Internal Medicine, Surgery, Neurology, Imaging, Exotics, Cardiology, Ophthalmology, Oncology, Dermatology) for telephonic consultation or for them to come to the hospital for special diagnostic or therapeutic procedures. The Veterinary Teaching Hospital also operates a 24 hours per day 365 days per year Equine emergency service backed up by on call specialist surgeons and internists. The farm animal ambulatory service in conjunction with the “Hahaklait” also provides a 24 hours per day 365 days per year emergency service for farm animals.

7.1.8 ON FARM TEACHING AND OUTSIDE PATIENT CARE

7.1.8.1 AMBULATORY (MOBILE) CLINIC

“Hahaklait” a cooperative organization provides veterinary services through insurance to the majority of the farms in Israel. They employ about 60 veterinarians and provide all the ambulatory care to the commercial farms. Three of these veterinarians have joint appointments in the Koret School of Veterinary Medicine. Our students accompany these veterinarians who form our ambulatory clinic and supplies the facilities and teaching equipment in the field through a joint agreement between the Hahaklait and the Koret School of Veterinary Medicine. During the ambulatory rotation,

2-3 students travel with the veterinarian in a large vehicle and spend most of the day at the farms. The teaching method is mainly field trips. The clinicians, are joint employees of the "Hahaklait" and the Koret School of Veterinary Medicine the farms are "Hahaklait" customers.

The ambulatory clinic provides intensive herd health services in the practice area, as well as attending all routine and emergency treatments and calls as needed, 24 hours a day, 7 days a week. All dairy farms are visited at least 1-3 times a week, according to the farm size. The practice area of The Koret School of Veterinary Medicine renders herd health and clinical services under intensive management system. The farms in the ambulatory area are composed of 2 large size dairies (>500 milking cows), 6 medium size dairies (> 200 milking cows) and 5 small size dairies (<200 milking cows each). There are also 2 medium size beef cattle herds (300-500 dams in a dam-calf operation), 3 dairy sheep farms (500-1200 dairy sheep) and 3 feedlots (300 - 1200 calves). The attending veterinarian and the accompanying 4th year students carry out all examinations and treatments. Farmers and dairy personnel are instructed on the follow up treatments. These include only intramuscular injections of antimicrobials and Nonsteroidal anti-inflammatory drugs, intramammary infusions and some per os drenching. About 90% of the time in the ambulatory practice is devoted to dairy practice. The intensive system of computer controlled milking parlour and herd management together with disease surveillance and data collection by veterinary professionals, offers a unique opportunity for teaching, acquisition of clinical and surgical skills and accurate and reliable field studies.

All clinical, reproduction, production and management data are computer recorded by the herd manager and the attending veterinarian. In 9 of the herds, cows are milked three times a day and the average annual milk production ranges between 11,000 to over 13,000 kg per cow. Of the smaller herds, one is milking twice daily with an average annual milk production of about 9,000-11,000 kg per cow. Once a month, individual cow and bulk tank milk is sampled and analyzed for fat, protein and somatic cell count (SCC) by the Central Laboratory for Milk Recording. A composite milk sample is obtained, at least annually, from every lactating cow with SCC over 200,000 and is submitted for bacteriological examination by the National Service for Udder Health and Milk Quality. All data is available and used for teaching and for clinical and epidemiological studies. In the dairy farms on the routine herd health visit, the following animals are presented for examination:

1. Every cow and heifer 7 to 14 days post partum.
2. Retained placenta > 24 hours post partum (or the nearest herd visit).
3. Abnormal uterine discharge.
4. Milk production or feed intake is too low.
5. Reproductive disorders; irregular cycles, short cycles, nymphomania.
6. Not seen on heat 50 to 70 days post partum.

7. Repeat breeders (> 3 inseminations).
8. Problem-cows (open > 150 days post partum).
9. Pregnancy diagnosis; 40 to 50 days after artificial insemination.
10. Repeated pregnancy examination before dry-off.
11. Pregnant cows seen on heat.
12. Overdue cows and nulliparous heifers.
13. All cows diagnosed or treated for clinical mastitis.
14. All lame cows (most cases need medical hoof paring).
15. Any sick cow or any detected abnormality.

All cows are body scored by the attending veterinarian at the routine post partum examination, 50 to 60 days after calving and at dry-off. The attending veterinarian is responsible for all aspects of udder health and mastitis control, calf health and nutrition, lactating and dry cows and replacement heifer's nutrition, routine vaccinations and other preventive measures. Twice per year the farms send the data collected to the "Hahaklait" for epidemiological analysis of production diseases and herd health. Once per year, representatives from the herd health section in the "Hahaklait" visit each farm.

The practice area is used for teaching clinical skills and modern food animals herd health practice. Participating students are able to go through a “hands on” experience process. The ambulatory clinic makes extensive use of the various diagnostic laboratories of the Kimron Veterinary Institute for blood biochemistry, hematology, microbiology and pathology. The farmers cover all costs. Students have many opportunities to understand the use and interpretation of various laboratory techniques in farm animals. During the rotation, the students have a meeting of case presentations (2-3 cases they encountered the previous week and underwent a thorough clinical examination and laboratory tests) with Prof. Nachum Shpigel, Dr. Tamir Goshen and the Farm Animal Intern. They also present a seminar (journal club) in which they present a research paper published in a peer review journal that is chosen by the course coordinator. Seminars are publicly announced, and are opened to food animal practitioners and academics that frequently attend. The facilities and equipment for the seminar are provided by Koret School of Veterinary Medicine.

Mandatory procedures: Students are able to conduct numerous rectal and vaginal examinations in dairy cows, participate in various surgical, obstetrical and clinical procedures and calving operations as well as obtaining minimal skills in routine procedures such as animal handling and restraining, blood and milk sampling, injections (IV, SC and IM), intrauterine treatments and physical examinations. In the first day of the rotation, the students do an instructed physical examination on a healthy cow under the supervision of Dr. Goshen and the Intern.

Evaluation of the students: The students are evaluated after the seminar in a joint meeting of the rotation staff. Usually the evaluation is done at the end of the 10th day of the rotation. The key points of evaluation are the theoretical knowledge, technical abilities and the overall impression. The final score is the average of the three categories. At the end of 4th year the student receives 2 grades, one for his/her participation in the rotation and one for the final examination.

Table 7.4: Number of cases seen by the ambulatory clinic in the past 3 years

Species	Number of patients farm visits			Average
*Food production animals	2009	2008	2007	2009
• Cattle	~31,000			31,000
• Small ruminants	156			156
• Bull calves in feedlots	520			520
Poultry (number of flocks)	44	43	44	44
**Rabbits	0	0	0	0
Equine	0	0	0	0

* The number of food production animals seen by the ambulatory clinic is an estimation based on information provided by the Hahaklait veterinarian (~100 cows per day, 6 days per week, 52 weeks per year). It must be emphasised that these are not necessarily sick animals but animals that fall into the 15 groups of animals mentioned above that are presented for examination as and part of the herd health approach used. It has not changed significantly over the last 3 years.

** No rabbits or horses are seen on ambulatory service, they are not used for food in Israel

7.1.9 OTHER INFORMATION

The Veterinary Teaching Hospital is registered as an independent non-profit organization belonging to the Hebrew University of Jerusalem. It receives income from the university for teaching purposes and generates its own income through veterinary services, continuing education courses and gifts from donors. The Veterinary Teaching Hospital has had a balanced budget for the past 8 years.

The Veterinary Teaching Hospital is the only comprehensive specialist referral veterinary hospital in Israel. The professional staff consists of 45 veterinarians of which 26 are specialists. Approximately 75% of all small animal cases seen at the Veterinary Teaching Hospital are referral cases and almost 100%of equine cases are referrals. Patients to the Veterinary Teaching Hospital come from more than 300km away and we have also had cases presented from neighbouring countries. The hospital offers a 24 hour a day emergency service back up by on call specialists

The companion animal hospital has the following specialty units; cardiology, neurology, dermatology, internal medicine, surgery, oncology and emergency and critical care. The equine clinic has specialty units in internal medicine, surgery and reproduction. The specialist ophthalmology service, imaging service, clinical pathology service, anaesthesiology service and pathology service serves both the small animals and equines. The Veterinary Teaching Hospital has approved European or American specialty training programmes in; dermatology, neurology, cardiology, emergency and critical care, ophthalmology, surgery, internal medicine and equine surgery.

In addition to basic health care the equine hospital also offers a specialist reproduction service.

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 a ratio to the number of students in last full year of clinical training

R 11:	no. of students graduating annually / no. of food-producing animals seen at the Faculty*	=	44 / 0	=	1 / -
					Denominator: 0
R 12:	no. of students graduating annually / no. of individual food-animal consultations outside the Faculty**	=	44 / 9360	=	1
					Denominator: 212.7
R 13:	no. of students graduating annually / no. of herd health***	=	44 / 21	=	1
					Denominator: 0.47
R 14:	no. of students graduating annually / no. of equine cases*	=	44 / 744	=	1
					Denominator: 16.9
R 15:	no. of students graduating annually / no. of poultry/rabbit cases* (poultry: none)	=	44 / 145	=	1 / -
					Denominator: 3.2
R 16:	no. of students graduating annually / no. of companion animals*	=	44 / 11333	=	1
					Denominator: 257.5
R 17:	no. of students graduating annually / Poultry (flocks)/rabbits (production units)** (poultry: none)	=	44 / 44	=	1 / -
					Denominator: 1

Table 7.6: Animals available for necropsy

R 18:	no. of students graduating annually _____ no. necropsies food producing animals + equines	= 44 / 1301	= 1	Denominator 29.5
R 19:	no. of students graduating annually _____ no. poultry/rabbits*	= 44 / 2610	= 1	Denominator 59.3
R 20:	no. of students graduating annually _____ no. of necropsies companion animals	= 44 / 1489	= 1	Denominator 33.8

7.1.11 OTHER SPECIES

Regarding food animals other than cattle, sheep, goats and pigs, in the past the school offered courses in bee and fish diseases, Due to lack of interest the bee disease course was stopped and the fish disease course takes place when more than 6 students register.

7.2 & 7.3COMMENTS AND SUGGESTIONS

Last year, the Veterinary Teaching Hospital opened a hemodialysis unit for small animals; this is one of less than 20 such units for animals in the world. Funds have been donated to the Veterinary Teaching Hospital to construct a new, modern and fully equipped Emergency and Critical Care facility. This is now in the planning stage and should be under construction within 6-9 months. Although the Veterinary Teaching Hospital has a fully computerized business administration system and computerized PACS (Picture archiving and communication system). Computerization of the medical record system is still in the planning stage. The major obstacle facing us is the ability to use Hebrew. Several packages have been examined and found either inadequate or unable to translate. Recently, the Rx Works software has been examined and found suitable. Negotiations with the Rx Works company are now proceeding and it is anticipated that the software will be implemented in 2011.

With regards to ratios there are several local conditions that have influenced these ratios.

R 11 – due to the system of herd health veterinary care which cover about 90% of all food producing animals, no individual animals are presented for treatment to the Veterinary Teaching Hospital, therefore we cannot calculate a ratio for this indicator

R 12 – this ratio is higher than that those shown in the box plots from EAEVE this is due to the fact that animals are examined routinely on regular farm visits as described above according to the principals of heard health rather than individual animal care. The calculation is based on the assumption that about 30% of all animals that fall into the categories of those that need to be examined are sick. This will be demonstrated and become clearer during the site visit.

R13 – this ratio falls within the EAEE range

R 14 - this ratio is high but falls within the EAEVE box plot whisker range. This is due to the large number of equine cases presented to the Veterinary Teaching Hospital especially to the reproduction clinic

R15 - this ratio is high but falls within the EAEVE box plot whisker range

R16 – this ratio is very high even though it falls within the EAEVE box plot whisker range. This is due to the relatively large companion animal case load and small number of students. Never the less, this does not detract from the student training due to the long last year (50 weeks, 3.5 semesters) and the fact that student work on a one to one basis with the clinicians.

R17 - this ratio falls within the EAEE range

R18, R 19, R 20 - these ratios are all higher than the EAEVE range. This is due to the fact that the practical training in pathology takes place in the necropsy hall and poultry department of the Kimron Veterinary Institute. These 2 facilities are government facilities that receive material for pathological examination from the entire country. Some poultry pathology is also performed in local poultry laboratories but the majority of all ruminant, porcine, equine, canine and feline pathology is sent to the Kimron Institute for examination. Thus our students have an excellent clinical training in pathology of all the domestic animals at the Kimron Veterinary Institute.

So, although some of these indices do not fall within the range of the box plots, this does not suggest that it has a negative effect on the training programme, in fact the opposite mat be true and therefore we see no reason to make changes alter these ratios at this stage.

8

Library and learning resources

Chapter 8. LIBRARY AND LEARNING RESOURCES

8.1 FACTUAL INFORMATION

8.1.1 LIBRARY AND OTHER INFORMATION TECHNOLOGY SERVICES

The main library serving the Koret School of Veterinary Medicine students and staff is the Central Library of the Robert H. Smith Faculty of Agriculture, Food & Environment in the Hebrew University's Rehovot campus. This library serves students, lecturers and researchers in plant sciences, animal sciences, nutrition and food sciences, agricultural economics, hotel management and veterinary medicine (about 3,000 patrons). The library is managed by the Library Authority of the Hebrew University.

The library catalogue is fully computerized with the Aleph 500 system. It is part of the Hebrew University's catalogue. The homepage www.agri.huji.ac.il/library/menu.html is the gateway to all its resources and is managed by the librarians in both Hebrew and English. The library consists of 1,300m^2 on two floors. The collection includes 40,000 books and 3,500 hard-copy journals (currently, the library receives hardcopies of 163 journal titles). In addition, the library has access to electronic resources which include databases, approximately 35,000 journal titles, reference books, dictionaries and more. Up–to–date books are acquired currently and subscriptions to new journals are included. A catalogue of the 35,000 electronic journal titles is available http://sfx.huji.ac.il:3210/sfxtst3/az/default. A catalogue of the electronic book collection is available at http://www.agri.huji.ac.il/library/electronic_books.htm. There are 160 seats in the library and 45 computer stations which allow access to the libraries' resources: catalogue, databases and journals and to all resources of all Hebrew University's libraries. A list of more than 60 available databases and search engines, including Agricola, Biosis, CAB and Medline, is available at http://www.agri.huji.ac.il/library/Data_new.htm. The library also has wireless connection to the Internet. Printers, scanners and photocopying machines are available. Remote access is available to all resources, allowing students and faculty to connect from home and office.

The library is open weekdays 09.00-19.45 during the school year and 09.00-17.45 during vacations; it is closed on weekends. The library has 4 full time employees, and another 3.38 full time equivalents of part time employees. All staff has advanced library and information science degrees and has continued to learn new skills and remain at the cutting edge of the rapidly changing information environment. Digital

projects such as the library website, electronic journals database and full text journal linking are maintained by the library staff.
The library holds reference and instruction services throughout the year. Sessions are given to individuals and/or groups and are adapted to the users' needs and previous knowledge. Advanced and subject-specific instructional sessions are given to graduate students and faculty members.

Two more libraries are available for use of the students at the Ministry of Agriculture Campus, where the Veterinary Teaching Hospital (VTH) is located. The first is a subsidiary of the Rehovot Central Library (described in the previous page) which is for the sole use of Veterinary Teaching Hospital students and faculty. It is designed to provide all the new texts needed for reference purposes in the VTH. It also provides texts for students and clinicians loans. The VTH subsidiary library has access to all the databases available to the Hebrew University of Jerusalem and online access to journals and electronic books (e-Books). It also holds educational videos available to the students and faculty.

The VTH subsidiary library is staffed by a part-time librarian who is also responsible for cataloguing and ordering books (which are also inventoried by the Rehovot Central Library), in addition the school employs another full time person to assist the librarian. The Veterinary Teaching Hospital library is open on weekdays from 8:00 to 18:00 daily, and closed on weekends. The VTH campus also has a computer room with 10 online computers, which is open 24/7. Students can use these computers to access all of the Hebrew University's electronic data bases, electronic collections and data bases described in the previous page.

A second library located on the Ministry of Agriculture Campus is the Central Library of the Ministry of Agriculture's Kimron Veterinary Institute. This large facility was made available for use by the KSVM students and staff as part of an agreement outlining the relations and cooperation between the Hebrew University of Jerusalem and the Kimron Veterinary Institute when the school was established. This library at the Kimron Veterinary Institute is the largest and oldest veterinary library in Israel, it holds texts and journal dating back more than 50 years. It is staffed by professional librarians. The library at the Kimron Veterinary Institute is open to the students only during regular working hours. The library holds many volumes and receives a wide range of journals annually. It offers on line literature searches to all the major databases.

8.2 COMMENTS

The network of 3 libraries available to the students and staff or the Koret School of Veterinary Medicine is certainly of high standards and provides all the services of modern day university libraries. The collections of books, scientific journals and electronic media are extremely good and diversified. The professional service given by the librarians, the facilities and the open hours are more than adequate. The library at the Veterinary Teaching Hospital needs to be expanded both in size and availability to users.

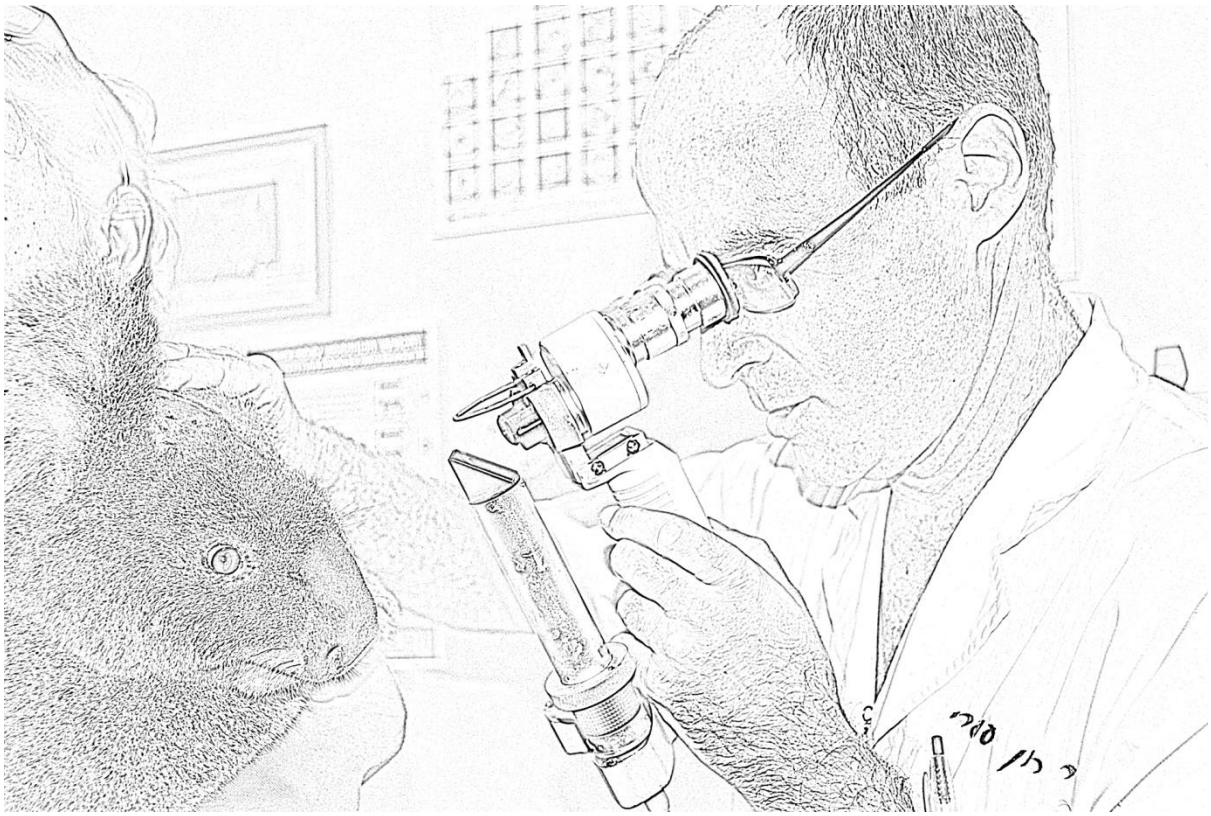
Information Technology facilities offered by the Hebrew University of Jerusalem are also of a very high standard. The availability of computer stations on the various campuses is very good and technical help is always available. On-site or home access is available to all students and staff. Commercial electronic computer tutorials are available on CD-Rom and the anatomy laboratory is equipped with dedicated computer stations and sophisticated software for anatomy studies.

8.3 SUGGESTIONS

The library at the Veterinary Teaching Hospital needs to be expanded both in physical size and availability to users.

9

Student admission and enrolment



Chapter 9. STUDENT ADMISSION AND ENROLEMENT

FACTUAL INFORMATION

9.1. UNDERGRADUATE COURSES

9.1.1 UNDERGRADUATE STUDENT NUMBERS

Minimum number of years (MNY) allowed to successfully complete the curriculum: 4 years.

Table 9.1: Undergraduate student composition in year prior to visitation

Total number of under graduate students	194
Total number of male students	62
Total number of female students	132
Foreign students (EU countries and Non-EU countries)	0

9.1.2 STUDENT ADMISSION

Applicants that meet the following requirements may submit an application to the Koret School of Veterinary Medicine:

A BSc. degree from a recognized university in Israel (that has had its program approved by the admission committee of the Koret School of Veterinary Medicine) in one of the following fields:

a) Agriculture (excluding: Agriculture Economics and Management, and Hotel, Food and Tourism Management),
b) Life Sciences (excluding: Mathematics, Computer Science and Engineering),
c) Medicine,
d) Dental Medicine,
e) Pharmacy,
f) Basic Medical Sciences,

g) Medical Laboratory Sciences,
h) Biotechnology,
i) Psycho-Biology,
j) Biomedical sciences,
k) Biomedical engineering
l) Oceanography.

Registration may take place in the 3rd year of the BSc. with proof of completing the degree being submitted by September 15. The minimum grade average for the BSc degree for admission is 85%. If a candidate applies during the last semester of the BSc program, the average of the courses studied to date (minimum 5 full semesters) must be > 85%.

During the course of the BSc studies, the applicant must complete the following compulsory prerequisite courses (minimum hours/course) with a grade no less than 80% in each course:

- Biochemistry (84hrs),
- Biology (168hrs),
- Chemistry (168hrs),
- Microbiology (56hrs),
- Immunology (28hrs),
- Endocrinology (28hrs),
- Mathematics (56hrs),
- Statistics (42hrs),
- Genetics (56hrs),
- Physiology of Man/Animals (84hrs)
- Physics (84hrs).

They must also have passed a Psychometric exam (Israeli equivalent of SAT/GRE) with a minimal grade of 600. They must have an exemption in English and in Hebrew for students who matriculated abroad. They must have Israeli Citizenship.

An up-to-date record of degrees obtained (BSc, MSc or PhD) and of subjects studied (including an overall average) must be submitted with the registration form to the Students Admissions Office of the Hebrew University of Jerusalem.

Students in their final year of studies towards a BSc (and will complete their degree by the 15 September that year), need to submit a record of studies with the grades of 5 full semesters. The record of studies needs to include all the courses in the above list.

The Koret School of Veterinary Medicine places great importance on applicants having prior experience with companion and food animals before starting their studies. Applicants need to prove that they have had a one month practical experience with companion and food animals according to the following:

- Companion Animal Clinic: 1 week (minimum 30 hours)
- Equine Stables or with an Equine clinician: 1 week (minimum 30 hours)
- Food Animals (poultry, bovine, ruminants, etc): 2 weeks (minimum 60 hours)

All forms relating to practical experience need to be submitted to the school secretary at the time of application.

All students at the KSVM are government supported, however they do pay tuition to cover part of the costs of their education. Therefore, the number of students admitted is determined by the Council for Higher Education of the Ministry of Education and we are not permitted to take more students under any circumstances. Furthermore, we have no plans to ask for an increase in the number of students in the near future.

The selection process is as follows:
As of 2010 fifty five students will be admitted each year, they are admitted in an objective, impartial manner as follows; students who meet all the admission criteria described in the beginning of this section are ranked according to their BSc average. If a candidate has yet to graduate, the average for 5 full semesters will be used for ranking. If a candidate has a MSc degree, the average used for ranking will be composed of the BSc average (80%) and MSc average (20%). The top ranked students are automatically admitted to the school.

Up to 5 places maybe allocated to candidates who meet the minimum admission requirements, and in addition fulfil one of the following criteria:

Belong to a minority group
Come from a peripheral (rural) area
Candidates with extensive background in research;
Candidates with extensive background in food production animals.

Prior to acceptance these applicants must pass an interview with the admissions committee.

As outlined above, the KSVM accepts students with a BSc from various animal/life science programs and departments in Israel; this is the result of a decision made by the Council for Higher Education of the Ministry of Education. We believe that this greatly enriches our school and our students, as it brings together people with diverse backgrounds, training and education. Never the less, much time and effort is devoted to making sure that all students applying to the school will have the background, training and education essential to begin the first year of veterinary school, no matter where they studied. Thus, the list of programs eligible to apply to the school is constantly reviewed and revised, to make sure that these programs meet our standards, requirements and expectations. The curriculum of each program in our list of eligible programs is reviewed by the admissions committee. Furthermore, in each eligible program, we review the syllabi of each and every one of the pre-requisite courses we demand from our candidates, to make sure that the contents of these courses will provide our students with adequate preparation for the veterinary school.

The Koret School of Veterinary Medicine has a highly significant influence on the courses and syllabus of BSc. programmes at all the different universities in Israel. This is through regular discussions and replies to questions that arise when these universities are formulating their curriculum especially with regard to the pre-required subjects that we demand.

It is noteworthy that because Israel has only one veterinary school, and due to the high BSc average required to ensure admission to the school, KSVM applicants are considered among the best students in Israeli universities. Therefore, many academic programs in Israel will adjust their curriculum (e.g., add or expand a course that is a pre-requisite in our school) to make sure that it complies with our registration requirements. These programs do so because they are well aware that if their graduates are ineligible to apply to KSVM, they may lose some of their best students. Recent examples of this are, the Biomedical Engineering program of Tel Aviv University and the Medical Laboratory Sciences program in Ben Gurion University which after consultation with our admissions committee added and revised courses in their curriculums in order to make them compatible with our requirements.

Thus we believe we have developed a system that allows us to enjoy both worlds. We are enriched by the varied background and education that our students have, yet

are able to guarantee that all of them meet our standards and requirements, and are adequately prepared for their veterinary studies.

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

Year	Number applying for Admission **	number admitted	
		'standard' Intake	other entry mode (describe)
2009*	90	50	0
2008	110	45	+3 (into 2nd year)
2007	109	45	+2 (into 2nd year)
2006	112	46	+2 (into 2nd year)
2005	113	40	+1 (into 2nd year)
Average	107	45	1.6

*year prior to evaluation

** The number of applicants is rather low due to the high grades required for acceptance, many candidates with BSc averages below 85% simply do not apply as they know they will not be accepted. They now also have access to a computerized system that will predict their chances to be accepted to the Koret School of Veterinary Medicine. In this way, if they find that the chance of being accepted is low they will prefer not to register and so save the registration fee.

9.1.3 STUDENT FLOW

Table 9.3: Student flow – follow up of 40 student who began their studies in 2005, how many where in 2009 (4 year later) in their

Number of students present after admitted year 1	
1st year - 2005 [1]	0
2nd year – 2006	0
3rd year – 2007	2*
4th year – 2008	2*
5th year – 2009	4*
>6th year	0
Number undergraduate veterinary students	194
How many dropped out 2004-2009	13

1) year matching MNY
*Students that repeated a year

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

Year	**Number graduating**
2009*	44
2008	41
2007	33
2006	41
2005	34
Average	38.6

*year prior to visitation

Table 9.5: Average duration of studies (distribution of students in years)*

Duration of attendance	number
4 years [1)]	15
5 years	22
6 years	6
7 years	1
8 years	0
9 years	0
10 years	0

[1)] Year matching MNY allotted to the veterinary curriculum

In order to pass from one year to the next students must have attended the lectures and completed all their academic obligations and successfully passed all the examinations with a grade of 65% or higher. Students that do not meet these requirements may not continue their studies. The curriculum committee discusses each such case and decides under what conditions that student may continue his/her studies. Students may be permitted to repeat a year one time only. In this case he/she has all the obligations of a regular student in that year except for any exemptions that the curriculum committee may have granted.

Due to the fact that pregnant students may be at risk, they are required to inform the school administration of their pregnancy as early as possible in order to formulate a program appropriate for that particular student taking into account the students' needs. However, it is her responsibility to complete all her obligations and courses before she will be allowed to advance to the next class or complete her studies. Teachers have the responsibilities and the right to refuse to allow pregnant students to participate in any activity that in their opinion may endanger the student. The teacher must notify the student of this, make a written record which is sent to the administration and filed in the student's personal file.

Academic circumstances under which students would be obliged to leave the course.

In order to pass from one academic year to another, the student must have successfully passed all the academic requirements of all his courses in the year. A pass grade in all courses is 65. A student is given two chances to pass a course. If

a student fails twice, he may turn to the curriculum committee to request a supplementary. This exam is granted only in exceptional cases (for example: students called up for reserve army duty, family problems). If the student is not granted a 3rd supplementary exam, or if he fails this opportunity, the student may repeat the academic year during which time he will have to repeat all courses in which he/she obtained a grade of 70 or below. A student will only be allowed to repeat a year once. If he does not succeed the second time, he will be obliged to leave the school. As the competition for admission to the Koret School of Veterinary Medicine is very high and only excellent students are accepted to the school, this occurs in rare cases. In the past 10 years we have had 2 such cases.

9.2 COMMENTS

We are happy with the standard and quality of the students admitted to our school. Students entering the school are generally older than those in other veterinary schools around the world. This is because military service is mandatory in Israel, after which candidates usually take a year break before starting university studies and then have to complete a BSc. The average age of our first year students is >25 years. The result is a very mature class of serious, dedicated and focused students who “know what they want in life”. They are also very demanding on the teaching staff. We are also extremely satisfied with the academic quality of the students accepted to the school. They have all had at least 3 years of academic studies prior to enrolment in KSVM, and have graduated with distinction from their respective BSc programs. While the threshold BSc average required for admittance has dropped slightly (from a high of 91.0 a few years ago) as the size of the incoming class has increased, our applicants are still regarded as the cream of the Israeli university system, and are very sought after by many programs. Naturally in every class there will always be better students and weaker students. However, since our students are both mature and well qualified academically, they perform well both in their academic (years 1-3) and clinical (year 4) years. We have recently performed an extensive review of the quality of the incoming and graduating students (see 9.3) and concluded that we are satisfied with the selection process and the resulting quality of the incoming class.

As mentioned previously the school does not decide on the number of students admitted, as this is decided by the Council of Higher Education of the Ministry of Education. However, the Council of Higher Education will consult with the University before making decisions to alter the number of students. This is in order to establish that the facilities and staff are able to cope with an increased number of students

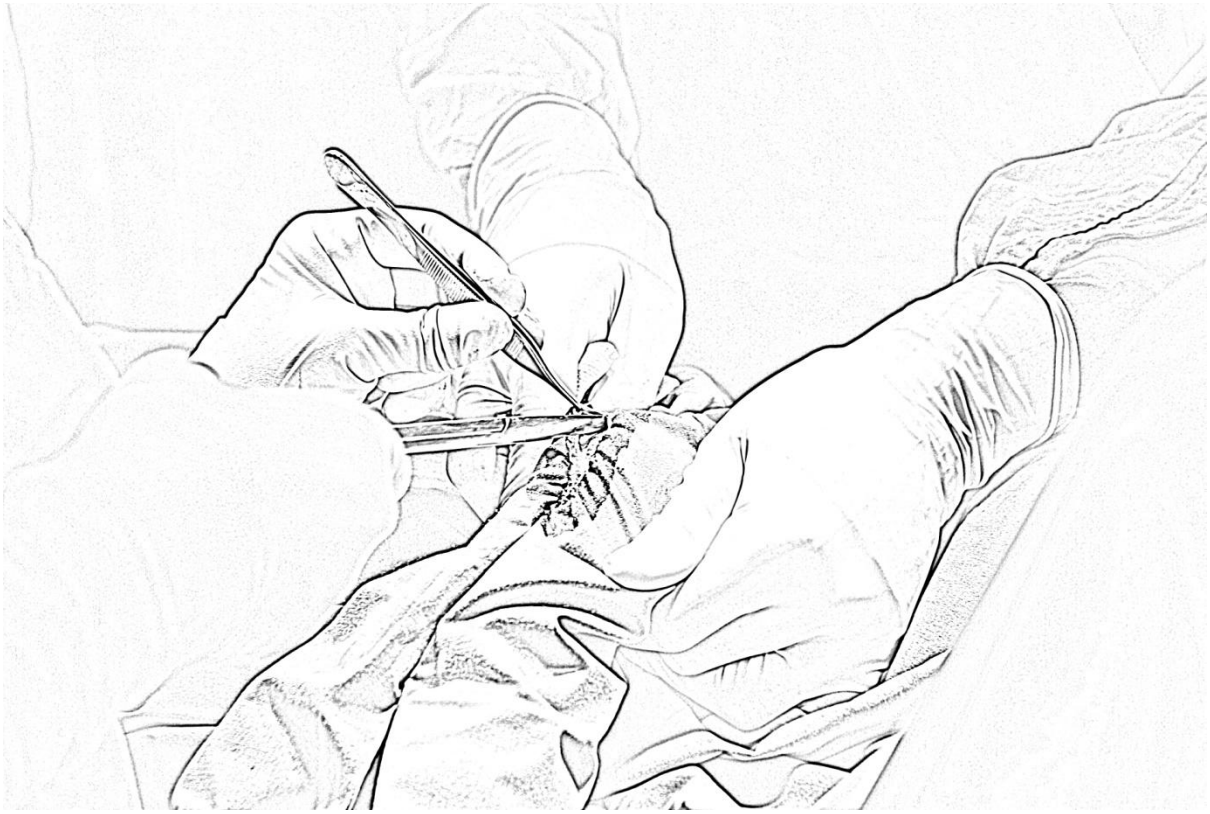
9.3 SUGGESTIONS

Two years ago we concluded a very thorough evaluation of our admission process. This included meetings with numerous office holders, including senior officials in the school and faculty, the university's central admission office, academic secretaries, and Deans and chairmen of programs that contribute a large number of students to our incoming class. We also met with officials from the national psychometry test office, Israel's equivalent of SAT/GRE. Another important aspect of this evaluation process was a thorough comparison of the academic data of the incoming class with the subsequent performance of these students in KSVM. We collected admission (BSc) averages, psychometry scores and grades in pre-requisite courses for every incoming student for the last 7 years. These were then compared to that student's academic grades in years 1-3 in KSVM; their clinical evaluations in year 4; DVM dissertation grade; overall DVM graduation grade; and a subjective ranking of the best and worst students of every year by the school's faculty.
Following an exhaustive analysis of the data collected, we were able to conclude that basically we are satisfied by our admissions process, and that our selection criteria can accurately predict the academic, clinical and overall performance of our graduates Therefore, currently we are not planning any changes to our admission process.

There were some years such as 2007 and 2008 when several students due to graduate, did not complete their dissertations in time and therefore took longer to complete their DVM degree. This issue has been address by the school and the dissertation committee keeps a close eye on the progress of the student's projects in each of the 4 years, also the break after finishing 3rd year and starting forth year has been extended by 3 months so that they now meet the criteria in time and the number of students not graduating for this reason has been reduced to a minimum.

10

Academic and support staff



Chapter 10. ACADEMIC AND SUPPORT STAFF

10.1 FACTUAL INFORMATION

All academic posts at the Koret School of Veterinary Medicine are funded either directly by the university or through a supplementary budget transferred by the university to the Veterinary Teaching Hospital through the Koret School of Veterinary Medicine. All academics are required to teach and perform research. Those that are clinicians are required also to perform clinical work in the Veterinary Teaching Hospital. Clinicians are granted time off clinics to perform research dependent on their academic rank. This time off clinics may range from 20%-50%. Additional clinical positions for post graduate training of interns and residents are funded mainly by income from the Veterinary Teaching Hospital, donors and training grants. Support staff is funded directly from the University budget, the school budget, research grants and hospital income.

The Koret School of Veterinary Medicine makes use of several external teachers, and teachers from other department in the university. Some teach voluntarily while others are paid from the school budget. Several of these teachers have adjunct academic appointments from the University based on their teaching qualities and research performance. These teachers are included in table 10.1.

Table 10.1 **Personnel in the establishment provided for veterinary training**

	Budgeted posts (FTE)		Non-budgeted posts (FTE)		Total (FTE)	
1. Academic Staff	VS	NVS	VS	NVS	VS	NVS
Teaching Staff (Total FTE)	33.84		12.06		45.90	
Research Staff (Total FTE)		5.15		2.64		7.79
Others – residents (Total FTE)	11				11	
Total (FTE)	44,84	5.15	12.06	2.64	56.90	7.79
Total FTE (VS+NVS)	49.99		14.7		64.69	
FTE providing last year teaching	44.84		12.06		56.90	
2. **Support Staff**						
a) Responsible for the care and treatment of animals	45		11		56	
b) Responsible for the preparation of practical and clinical teaching	11		0		11	
c) Responsible for administration, general services, maintenance etc	18		34		52	
d) Engaged in research work	12		3		15	
e) Others (Pharmacy, Diagnostic laboratory)	6		0		6	
Total (FTE) support staff					140	
Total staff (FTE)					204.69	

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		Assoc Prof		Senior lect		Lecturer		Instructor		Teach	Tech -nical	Animal carers	Admin
	VS	NVS	VS	NVS	VS	NVS	VS	NVS	VS	NVS	VS	(b+d +e)	(a)	(c)
Basic Sciences and Patho-biology	3	2	4	2		2		2				4	4	14
Clinical Sciences			9		4		9		9		18	28	52	38
Total FTE	3	2	13	2	4	2	9	2	9		18	32	56	52

The Koret School of Veterinary Medicine has only 2 official departments;
1. Department of Basic sciences and Pathobiology
2. Department of Clinical sciences

2) The official academic ranks at the Hebrew University of Jerusalem are Instructor, Lecturer, Senior Lecturer, Associate Professor and Full Professor. Some of those in the above table are Adjunct academic appointments as they work in another institution but teach in the Koret School of Veterinary Medicine.

3) In addition to those with academic rank some of the FTE are teaching staff who do not have official academic appointments. All are veterinarians and are listed in column labelled Teach.

Tab. 10.3: Student/ staff ratios

R 1	No. total academic FTE in Veterinary Training / No. under graduate veterinary students	=	64.69 / 207	=	1 / 3.19	=	Denominator 3.19
R 2	No FTE in total faculty / No. under graduate veterinary students	=	204.69 / 207	=	1 / 1.01	=	Denominator 1.01
R 3	NoVS FTE in Veterinary Training / No. under graduate veterinary students	=	56.9 / 207	=	1 / 3.63	=	Denominator 3.63
R 4	NoVS FTE in Veterinary Training / No. students graduating annually	=	56.9 / 44	=	1 / 0.77	=	Denominator 0.77
R 5	No. total FTE academic staff in Veterinary Training / No. total FTE support staff in Veterinary Training	=	64.69 / 140	=	1 / 2.16	=	Denominator 2.16

Staff allocation in the Faculty and Veterinary Teaching Hospital is based on recommendations made to the Director of the school by the Academic planning and development committee. These recommendations are in accordance with the ultimate goal and aims of the Koret School of Veterinary Medicine. The recommendations are revised from time to time based on prevailing needs and funding available for positions. Two different sources of funding are available; funding for clinical appointments in the Veterinary Teaching Hospital from the hospital budget and funding for tenure track research positions in the school from the University budget.

The trend in the Veterinary Teaching Hospital is to recruit specialists in the various clinical specialties. Presently, the hospital is earnestly seeking a specialist Radiologists, anesthesiologist and clinical pathologist while the school is actively seeking persons in the following fields; pathology, public heath, reproduction, virology, animal welfare, zoonoses and farm animals.

The staff of the Veterinary Teaching Hospital is not permitted to work privately outside of the hospital. Staff of the school is permitted to act as consultants, however if the salary earned in this capacity exceeds a certain amount they will lose

an additional salary benefit paid to all staff that allocate all their time to university work.

The university views participation in international scientific meetings and time spent at other institutions as essential to scientific development of the staff. They therefore offer very generous financial support for this function. The amount offered each year ranges from $2,500 - $8,000 depending on the academic rank. In addition staff on the purely academic track is entitled to a full year sabbatical which includes; travel expenses and full pay every 6 years; those on a clinical academic track are entitled to a half year sabbatical every 6 years or a full year sabbatical every 12 years.

10.2 COMMENTS

We feel that the balance between clinical and support staff is weighted in favour of clinical staff. More clinical support staff is needed to free clinicians from technical functions and provide them with more time for pure clinical work and result in smoother operation of the hospital.

Salaries of clinical staff are comparable to those of most the private sector. There are however large clinics in which the earning power of veterinarians is much higher. The salaries of the academic research staff is considerably less than the salaries of academics working in industry and high tech companies.

The school is finding it extremely difficult to recruit top qualified researchers in the basic science positions mentioned above. Similarly, the Veterinary Teaching Hospital is finding it difficult to recruit a specialist radiologist..

While the total number of FTE may seem low, it must be remembered that the veterinary programme is a 4 year programme and that many of the basic subjects are taught in the BSc. Degree programme, therefore we do not employ staff that would cover the additional year and subjects.

With regards to Ratios R1, R2, R3, R4, and R5. Our denominators are slightly lower than those established by ECOVE. This in fact seems to be favourable as it indicates that there is a more favourable ration of staff to students. The ratios would be higher if there were more students.

10.3 SUGGESTIONS

Although some of the ratio do not fall within the range of the denominators presently established by ECOVE, this is not a cause for concern as it is due to the fact that we have a relatively large teaching staff compared to the number of students. This is particularly true in the clinical courses.

11

Continuing education

Chapter 11. CONTINUING EDUCATION

11.1 Factual Information

One of the goals of the Koret School of Veterinary Medicine is to improve the standard of veterinary medicine in Israel and the region. To this extent, providing continuing educations is an important factor. The school has prioritized this mission and has established a Continuing Education Committee, a subcommittee of the Curriculum Committee. This committee consisting of veterinarians from different fields is charged with the planning and organization of continuing education courses for local veterinarians, new immigrant veterinarians, and foreign veterinarians, for courses to prepare veterinarians for the state licensing examination and for para-professionals such as veterinary nurses, poultry vaccinators and others as the need may be. In addition when guests from abroad visit for formal teaching purposes they are frequently requested to present continuing education courses as well. The Director of Veterinary Services for the Ministry of Agriculture has recently decreed that the Koret School of Veterinary Medicine is presently the only official body certified to provide Veterinary Continuing Education in the realm of Public Health. He has also decided that the school will also be the only body that will be recognized in a soon to be approved Compulsory Continuing Education requirement for Small Animal practitioners. In fact, it is now commonly accepted that the Koret School of Veterinary Medicine is the center for all veterinary continuing education and that continuing education will only be recognized by the authorities if it is planned and organized by the School. The School however recognizes the importance of input from the profession and discusses and plans courses in cooperation with the Israel Veterinary Association, the Israel Small Animal Veterinary Association, with the Government Veterinary Services, the Kimron Veterinary Institute, the Council of poultry farmers, the milk and meat councils and the Haklaith (an organization that employs about 60 veterinarians that provide veterinary services to ruminants in Israel).

The staff of the Koret School of Veterinary Medicine is frequently invited to participate in continuing education programs as speakers and chairpersons on a national and international basis. Continuing veterinary education at the Koret School of Veterinary Medicine therefore offers veterinarians from all areas of veterinary medicine the opportunity to update their skills and acquire additional competence through specialization and also through continuing education. We are committed to the philosophy of lifelong learning for veterinarians and try to instil this philosophy in our students. It is therefore rewarding for us to see the large number of graduates from the Koret School of Veterinary Medicine that take part in our Continuing Education programs.

As can be seen in the list of Continuing Education courses/conferences offered over the last 3 years (see below) we offer a selection of courses and conferences which veterinarians who already hold a degree may elect to participate. In these courses, the practicing veterinarians meet with the school experts and invited lecturers, learn about the new developments and innovations in the related fields, ask questions, consult on complicated cases and discuss points of interest.

The School's continuing education committee has the authority to grant veterinarians a certificate to certify that they have completed continuing education. Such certificates indicating advanced studies may be used as an incentive for promotion and salary increases as well as part of the veterinarian's requirements to be eligible for leadership positions.

Continuing Veterinary Education Courses organized by the Koret School of Veterinary Medicine 2008-2010

Year	Title of Course	# participants	# hours
2008	Preparation for Israel Veterinary Licensing examination	37	120
2008	Koret School of Veterinary Medicine - Annual Veterinary Symposium	121	9
2008	Upgrading course for new immigrant veterinarians	15	500
2008	Veterinary Public Health	46	120
2008	Course for poultry vaccinators	16	42
2008	Selected topics in Veterinary Internal Medicine	80	42
2008	Advances in Veterinary Nursing	142	14
2008	Clinical Neurology I	76	3
2008	Shelter Medicine	123	6
2008	Equine ophthalmology clinical cases	38	3
2008	Equine articular cartilage pathologies	33	2
2008	Equine lameness examination and management of lameness's	41	4
2008	Breeding management, problematic mares, semen evaluation, advanced breeding techniques	23	5
2009	Koret School of Veterinary Medicine - Annual Veterinary Symposium	149	9
2009	Preparation for Israel Veterinary Licensing examination	27	120
2009	Koret School of Veterinary Medicine - Annual Veterinary Symposium	149	9
2009	Preparation for Israel Veterinary Licensing examination	27	120
2009	Veterinary Public Health	47	120
2009	Veterinary Virology	22	42
2009	Veterinary Parasitology A	20	29
2009	Advances in Veterinary Nursing	112	7
2009	Heat stroke in Dogs	85	3
2009	Incisional hernia repair, RLP, fracture repair	37	2
2009	Hoof trimming for laminitis	38	2
2009	Skin grafting, standing surgeries - Equine	31	2
2009	The use of Hemodialysis in the Veterinary Teaching Hospital	34	3
2009	Clinical Neurology I	76	3

Year	Title of Course	# participants	# hours
2009	Embryo transfer and frozen semen fertilization	21	3
2010	Koret School of Veterinary Medicine - Annual Veterinary Symposium	140	9
2010	Preparation for Israel Veterinary Licensing examination	31	120
2010	Upgrading course for new immigrant veterinarians	17	500
2010	Veterinary Public Health	37	120
2010	Veterinary Parasitology B	23	29
2010	Veterinary Bacteriology	26	42
2010	Veterinary Preventative Medicine	17	42
2010	Government Veterinary Services and Public Health	17	26
2010	Selected surgical cases	55	3
2010	Cardiology diagnostics	64	3
2010	Clinical neurology II	87	3
2010	Equine Clinical pathology - CBC	27	3
2010	Equine Clinical pathology – biochemistry MRSA in the hospital	22	3
2010	Equine dermatology	34	5
2010	Advances in Veterinary Nursing	123	7
2010	Selected topics in Veterinary Clinical Pathology	124	8
2010	Difficult Decisions in Veterinary Surgery	68	3
2010	Flea control, Endocrine skin disorders	34	4
2010	Clinical Neurology II	81	3
2010	Introduction to Animal Welfare	60	5

11.2 Comments

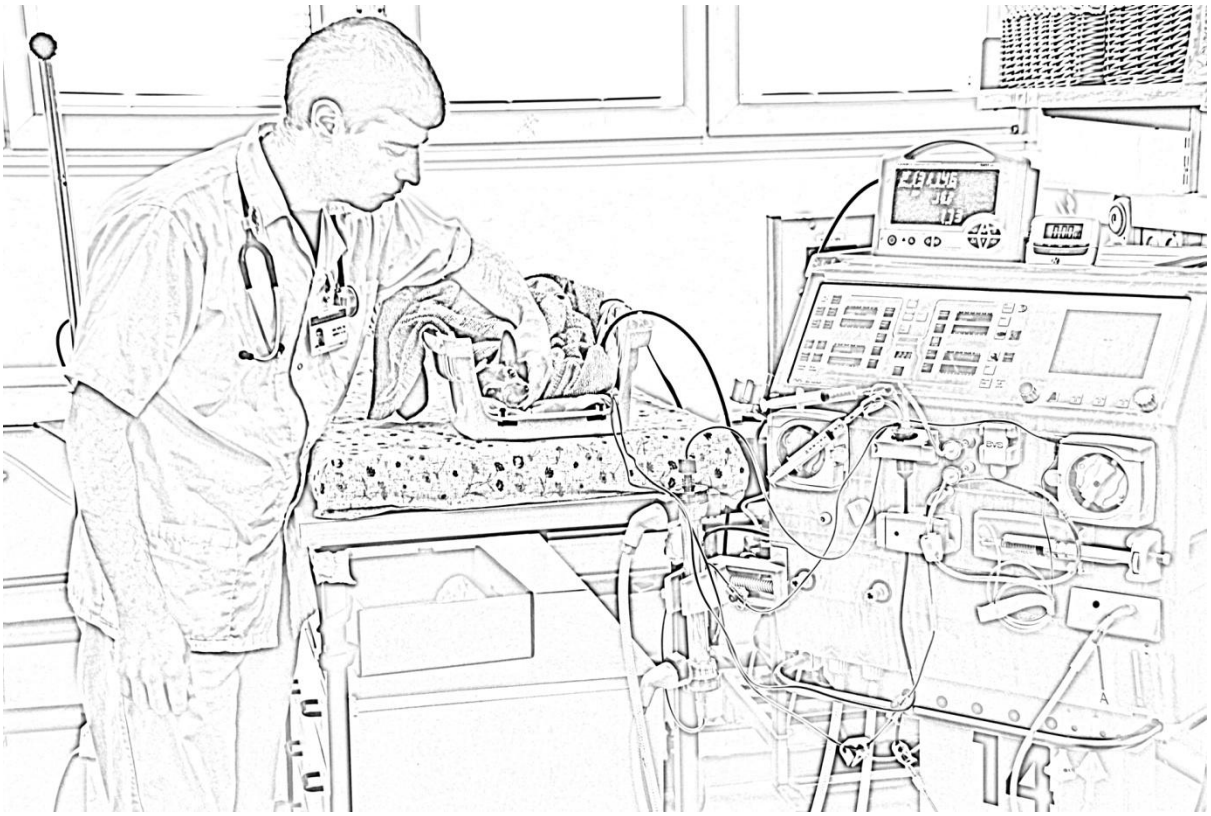
We believe that the standard of continuing education offered by the Koret School of Veterinary Medicine is high. It combines clinical courses backed up by scientific evidence and research findings and presented by respected speakers. The number of participants is large and growing. Also, as part of our Continuing education programme, we offer short externship training periods from 2 - 8 weeks when veterinarians can spend time observing in the Veterinary Teaching Hospital and participating in ward rounds, discussion seminars, case presentations etc.

11.3. Suggestions

Although we believe we are doing a good job of Continuing Education, we do not yet have a system of objectively measuring its quality. We are planning to implement such a quality control programme for continuing education in the future. We also propose to introduce workshops and wet labs which have not been pursued intensively in the past. Another useful system for the disseminating Continuing Education is through the Internet. We have yet to consider the implementation of such a programme as a way of spreading our Continuing Education mission to our entire region.

12

Post graduate education



Chapter 12. POSTGRADUATE EDUCATION

12.1 FACTUAL INFORMATION

The Veterinary Teaching Hospital of the Koret School of Veterinary Medicine is the only comprehensive specialty hospital in Israel with 22 international specialists (17 European board certified Diplomates and 5 American board certified Diplomates) and 4 Israeli certified specialists, a total of 26 specialists, covering 14 different specialties. These specialists actively participate in training of residents and interns in clinical specialties mainly through programmes approved by the colleges of the EBVS (Table 12.1.1). Post graduate clinical training is an ongoing priority of the Koret School of Veterinary Medicine and seen as an important educational task. Candidates for specialist training are selected by the Interns and Residents committee which is appointed by the Director of the school. This committee also supervises and evaluates programmes. The specialization programmes conform to the demands of the specific college and vary from 3-4 years. Time is also provided for rotations in different departments and for scholarly work such as reading and research. Each supervisor draws up a personal study plan for their specialization. Interns and residents are expected to perform normal working and after hours duties.

12.1.1 CLINICAL SPECIALITY TRAINING (INTERNS AND RESIDENTS)

Table 12.1.1 Clinical specialty training

Clinical discipline	No. interns	No. residents	Resident diploma or title anticipated	Type of certification	Funding
Small Animal Internal medicine		1	Dipl. ECVIM-CA	EBVS	Salary (VTH)
Cardiology		1	Dipl. ACVIM (cardiology)	ACVIM	Salary (VTH)
Surgery		3	Dipl. ECVS	EBVS	Salary (VTH)
Neurology		1 2	Dipl. ECVN Dipl. ECVN (non-conformal)	EBVS EBVS	Salary(VTH) Not funded
Ophthalmology		1	Dipl. ECVO	EBVS	Salary (VTH)
Imaging		2	Israeli Specialization	ISRAELI	Salary(VTH)
Equine Surgery		1	Dipl. ECVS	EBVS	Salary (VTH)
Equine Medicine		2	Israeli Specialization	ISRAELI	Salary (VTH)
Emergency and Critical Care		1 1	Dipl. ACVECC Dipl. ACVECC	ACVESS ACVESS	Salary (VTH) Salary (Grant)
Dermatology		1	Dipl. ECVD	EBVS	Not funded
Pathology		1	Israeli Specialization	ISRAELI	Salary (KSVM)

Bovine/food animals		1 1	Israeli Israeli	ISRAELI ISRAELI	Scholarship Not funded
Tropical Veterinary Medicine		1	Israeli specialization	ISRAELI	Scholarship
Interns Rotating small animal internship Equine Bovine	5 3 1				Salary (KSVM)

VTH-Veterinary Teaching Hospital,

KSVM-Koret School of Veterinary Medicine

12.1.2 RESEARCH EDUCATION PROGRAMMES

In keeping with the policy of the Hebrew University of Jerusalem to be one of the leading research institutions in the world, the Koret School of Veterinary Medicine offers several postgraduate programs. The goal of post graduate studies in the School of Veterinary Medicine is for the students to acquire an in depth insight into their field of research and its social and scientific significance, learn how to independently perform and critically apply scientific research methods in their own field of research and to create and publish original scientific information, to familiarize themselves with developments, basic issues and novel research methods in their field, to follow developments in the general theory of science and other disciplines related to their field of research. To this end the school has a joint postgraduate division with the Animal Sciences Department and postgraduate studies are offered jointly by the school and this department. The postgraduate programs include:

Program	Description
MSc. in Veterinary Sciences	A masters of sciences degree available for both graduates of the school of veterinary medicine and to students without a veterinary degree. Research is usually of a 2 year duration and carried out under the mentorship of the Koret School's faculty members and performed in their laboratories.
PhD in Veterinary Sciences	Doctoral studies are available for both graduates of the school of veterinary medicine and to students without a veterinary degree. Research is usually of a 4-6 years duration and carried out under the mentorship of the Koret School's faculty members and performed in their laboratories.
DVM/MSc.	A combined DVM/MSc. is optional for veterinary students while taking the DVM degree. The program requires the students to take one year off from their regular veterinary studies which are devoted solely to research. This program is of a 5 years duration (at least) of which 4 years are in parallel to the veterinary studies.
DVM/PhD	A combined DVM/PhD is optional for selected DVM students while taking the DVM degree. The program requires the students to take 2 years off from their regular veterinary studies which are devoted solely to research. This PhD program is of a 6 years duration (at least) of which 4 years are in parallel to the veterinary studies.

Table 12.2: Number of research students enrolled in different programs

Type of degree	Fulltime	Part time	Duration
MSc.	13		2 years
PhD	27		5-6 years
DVM/MSc.	0		5-6 years
DVM/PhD	4		6-8 years
Total	44		

12.2 COMMENTS

Of the 31 students studying towards a PhD degree, 9 (30%) are veterinarians with a DVM degree. The research students receive stipends which are mostly obtained from competitive research grants from international and national funding agencies. Some basic funding from the Koret School and the Hebrew University is available usually for one student per scientist. The main factor affecting the number of post graduate students is the shortage of supervisors in the basic sciences.

12.3 SUGGESTIONS

The school strives to further increase the number of basic researchers and thereby the number of research students. Attempts are also in progress to increase the funding available for research. More emphasis will be placed on integration of the DVM graduates in research at the Koret School of Veterinary Medicine. DVM graduates have a wide biological education background, understand the needs of veterinary education and curriculum and can make a strong contribution to education and research impact in applicative veterinary research.

13

Research

Chapter 13. RESEARCH

13.1 FACTUAL INFORMATION

The goal of the Koret School of Veterinary Medicine is to produce veterinarians and veterinary researchers that are able to apply the latest scientific knowledge to improve their professional skills, as well as to learn to read and critically analyze the content of lectures, textbooks and scientific articles. To achieve this goal the school tries to instil the enthusiasm to discover new and updated knowledge and to improve their skills as professional veterinarians after graduation (life-long learning).

All the veterinary students at the Koret School of Veterinary Medicine are required to carry out a research project and to submit a thesis. The project is considered by the Hebrew University as equivalent to a MSc. degree. The project usually begins during the first year of studies and concluded on the 4th year. The majority of the theses are tutored by the school's faculty members and include research in the scientists' laboratories. The veterinary students take a course during their first year of veterinary medicine studies which prepares them for planning and writing their theses and teaches them how to write a research plan an how to analyze results. Statistical analysis and counselling on experiment design is provided by a medical statistician that is employed by the school for this purpose.

Research projects involve studies in infectious diseases, immunology, internal medicine, orthopaedics, soft tissues surgery, neurology, anaesthesia, imaging, genetics, embryology and many more topics. Some of the work is carried out during the year but most is done during semester recesses or summer vacations. The DVM students are also allowed to carry out their thesis in other departments such as the Animal Sciences department in the Faculty of Agriculture or in affiliation with other institutes such as the Weizmann Institute for Research in Rehovot, the Kimron Veterinary Institute, or the Volcani Institute as long as the mentors were approved by the Dissertation Committee. The number of student thesis projects currently carried out in various stages roughly equals the number of DVM students at the Koret School, e.g. about 200 projects.

13.2 COMMENTS

The veterinary students are required to write a thesis and therefore are all involved in research, whether clinical or of a more basic nature. The research level required from these research projects is high and the students' theses are evaluated by experts in their fields. The results of these research projects are frequently the basis for scientific publications in national and international journals.

13.3 SUGGESTIONS

The impact of the DVM thesis should be increased as they contain valuable information. It is currently planned to publish the abstracts of all the theses in the Israeli Journal of Veterinary Medicine, where some of the theses have already been published.

ANNEX

Summary of Main indicators to be used in the evaluation of Veterinary Faculties

		Parameter Addressed		Indicator (Ratios)				Denominator obtained
Teaching capacity	R 1	No. total academic FTE in Veterinary Training / No. under graduate veterinary students	=	64.69 / 207	=	1 / 3.19	=	3.19
	R 2	No FTE in total faculty / No. under graduate veterinary students	=	204.69 / 207	=	1 / 1.01	=	1.01
	R 3	No VS FTE in Veterinary Training / No. under graduate veterinary students	=	56.9 / 207	=	1 / 3.63	=	3.63
	R 4	No VS FTE in Veterinary Training / No. students graduating annually	=	56.9 / 44	=	1 / 0.77	=	0.77
	R 5	No. total FTE academic staff in Veterinary Training / No. total FTE support staff in Veterinary Training	=	64.69 / 140	=	1 / 2.16	=	2.16
Types of training	R 6	Theoretical training / Supervised practical training	=	2670 / 3147	=	1 / 1.17	=	1.17
	R 7	Clinical work / Laboratory and desk based work + non clinical animal work	=	2568 / 489	=	1 / 0.19	=	0.19
	R 8	Self directed learning / Teaching load	=	368 / 2670	=	1 / 7.2	=	7.2

Training Food Hygiene/Public Heath	R 9	Total number of curriculum-hours Food Hygiene/Public Health / Total number hours in veterinary curriculum-	=	403 / 5973	=	1 / 14.82	=	14.82
	R 10	Total number of curriculum-hours Food Hygiene/Public Health / Hours of obligatory extra-mural work in veterinary inspection	=	403 / 230	=	1 / 0.57	=	0.57
Animals available for clinical education	R11	Number of students graduating annually / Number of food-producing animals seen at faculty	=	44 / 0	=	1 / 0	=	0
	R 12	Number of students graduating annually / Number of individual food-animal consultations outside the faculty	=	44 / 9360	=	1 / 212.7	=	212.7
	R 13	Number of students graduating annually / Number of herd health visits	=	44 / 21	=	1 / 0.47	=	0.47
	R 14	Number of students graduating annually / Number of equine cases	=	44 / 744	=	1 / 16.9	=	16.9
	R 15	Number of students graduating annually / Number Poultry/rabbit cases	=	44 / 145	=	1 / 3.2	=	3.2
	R 16	Number of students graduating annually / Number of companion animal seen at faculty	=	44 / 11333	=	1 / 257.5	=	257.5
	R 17	Number of students graduating annually / Poultry (flocks)/rabbit (production units) seen	=	44 / 44	=	1 / 1	=	1

Necropsies available for clinical education	R 18	Number of students graduating annually / Number necropsies food producing animals + equines	=	44 / 1301	=	1 / 29.5	=	29.5
	R 19	Number of students graduating annually / Number poultry/rabbits	=	44 / 2610	=	1 / 59.3	=	59.3
	R 20	Number of students graduating annually / Necropsies companion animals	=	44 / 1489	=	1 / 33.8	=	33.8

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of Veterinary Education

at Hebrew University of Jerusalem, Israel

Prepared for the Stage 1 visit

of a Team of Experts

from European Association of Establishments for Veterinary Education

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