SUBJECT REVIEW REPORT

DEPARTMENT OF FARM ANIMAL PRODUCTION AND HEALTH

FACULTY OF VETERINARY MEDICINE AND ANIMAL SCIENCE

UNIVERSITY OF PERADENIYA

25th to 27th June 2008

Review Team :

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1. SUBJECT REVIEW PROCESS

This review was carried out on the 25th, 26th and 27th of June, 2008 by a team comprising the following persons.
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Prof SSE Ranawana, Wayamba University of Sri Lanka
The terms of reference for the review team were according to those described in the Quality Assurance Handbook of the CVCD and UGC (page 13 to 16 and Annex E).
The team based its findings on the following documents and activities:

1. A desk study of the Self Evaluation Report prepared by the Head of Department and Staff
2. A Meeting with Department academic staff for an in-depth assessment of the contents of the curriculum and the teaching/learning methods used
3. Observation of classroom teaching (Lectures and Clinicals)
4. A survey of facilities – classroom, laboratory, Farm, Computer and Library - available for teaching
5. Interactions with the following personnel:

a. The Vice-Chancellor and his staff
b. The Dean of the Faculty
c. Academic staff of the Department
d. The non-academic staff of the Department
e. Veterinary Undergraduate students from the 3rd and final years
f. Post-graduate students

6. Perusal of miscellaneous documents relating to teaching activities

2. BRIEF HISTORY OF THE UNIVERSITY, FACULTY AND DEPARTMENT

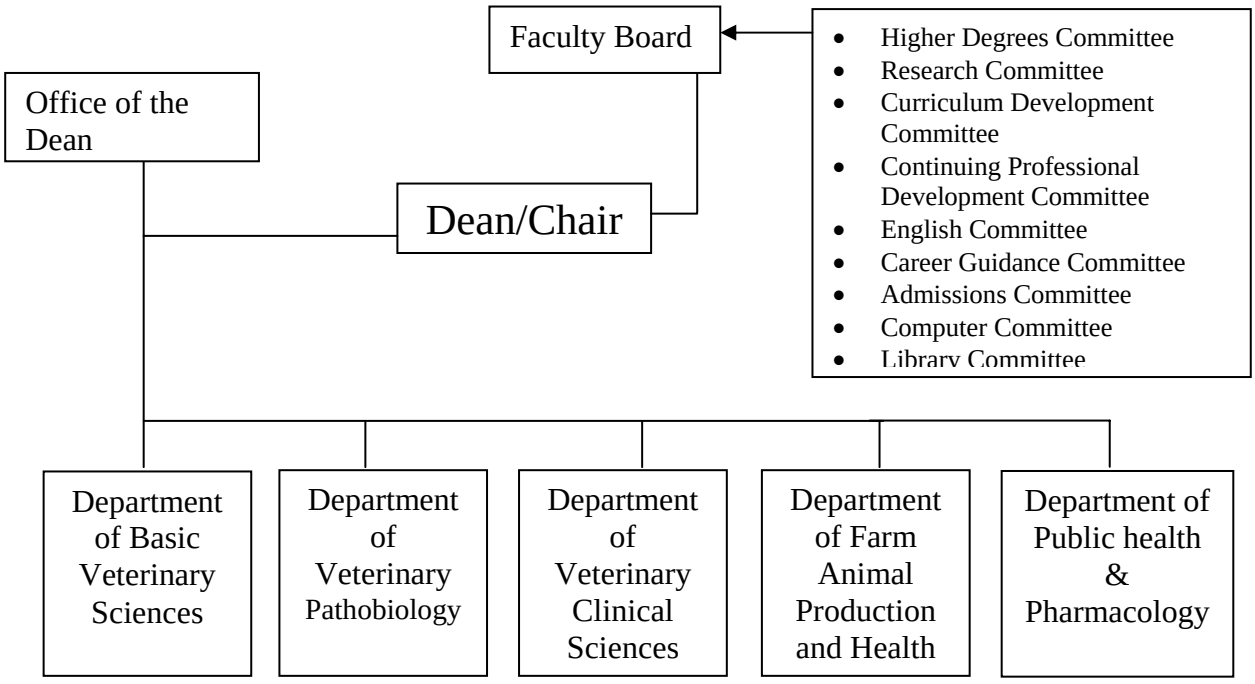
The Department under review is one of five Departments in the Faculty of Veterinary Medicine and Animal Science(FVMAS) which, in turn, is one of seven Faculties at the University of Peradeniya. The University of Peradeniya, established on 1st July, 1942, presently has a developed infrastructure, trained academic staff, well-equipped laboratories and all the specialized units and accessories of a complete, modern University. It is the largest in terms of student enrolment and the most complete with respect to the number and range of Faculties, in Sri Lanka. It is also the only residential University in the Island located in a pleasant setting with a mild climate.

The FVMAS is the only Faculty in the Sri Lankan University system that offers a degree program in Veterinary Science. The degree program in Veterinary Science in Sri Lanka commenced in the year 1947 with the establishment of a Department of Veterinary Science in the then University of Ceylon. At the beginning, students followed the medical curriculum in basic subjects such as Anatomy, Physiology, Biochemistry, general Pharmacology and Pathology with their counterparts at the Faculty of Medicine in the University of Ceylon in Colombo. The specialized subjects in Veterinary pathology and clinical subjects were taught at Peradeniya. Since 1966, with the establishment of a separate Faculty of Medicine at Peradeniya, all veterinary undergraduate training has been carried out at Peradeniya.

In the year 1973, the single Department of Veterinary Science was expanded to three Departments of study, namely, Veterinary Preclinical, Paraclinical and Clinical Studies, upgraded as the School of Veterinary Science and included with Medical and Dental Schools

to form one Faculty. In the early 1980s, the undergraduate training in Veterinary Science was accorded full-faculty status with an additional Department, namely, Animal Science. As an interim measure, instead of forming the fourth department, the FVMAS continued to use the services of the Department of Animal Science of the Faculty of Agriculture to teach the courses in animal production.

At the same time, the newly formed Department of Veterinary pre-clinical studies undertook all the teaching of basic subjects part of which had hitherto had been taught at the Faculty of Medicine. In October 2000, the FVMAS was restructured and the Departments renamed as Basic Veterinary Sciences (BVS), Veterinary Pathobiology(VPB), Veterinary Clinical Studies (CLS) and Farm Animal Production and Health (FAPH). Finally, in July, 2007 a separate Department of Veterinary Pharmacology and Public Health (VPHP) was formed to give the present structure.



The structure of the Faculty of Veterinary Medicine & Animal Science

The structure of the FVMAS and the position of the DFAPH are shown in the Figure above. Apart from the five Departments of study, the academic programme is also supported by a teaching hospital and a teaching farm.

The students in Veterinary Science pass in stages first through the Department of Basic Sciences, then the VPB and VPHP before passing on to the two Departments dealing with clinical and animal production aspects. With the revision in year 2000, there was also a change in the architecture of the course; the teaching of pre-clinical subjects which occupied nearly 2 years up to that time, was reduced to one year with the paraclinical subjects spread over the next two years.

All five Departments contribute to the undergraduate program. The role of the first three Departments is essentially to prepare the students for the clinical and farm training. This structure is common to many professional courses, in particular, Medicine and Dental Science and different from those in the Science or Arts Faculties in which the individual Departments are usually based on disciplines. It can be seen that it is somewhat difficult to

isolate the role of one Department as they all contribute to the final product and it would have been more appropriate if the entire Faculty program could be assessed. The task of the review team was understood as making an assessment of the success of the teaching program in the Department of Farm Animal Health and Production (FAPH) in achieving their aims.

3. AIMS AND LEARNING OUTCOMES

3.1 Aims

The core courses offered by the D/FAPH are in Farm Animal Production (in the third year), Farm Animal Medicine, Surgery and Reproduction & Obstetrics (in the Final year). In addition, the Department is responsible for the teaching of several other general courses, namely Economics, Statistics, Epidemiology, Business Management, Human Resource Management and Communication. (see Table for more details).

The aims of the courses with regard to Farm Animal Production are to instill the concept that livestock farming acts as an important source of income generation, employment, nutritional upliftment and poverty alleviation in the rural agricultural sector, and to impart sound scientific knowledge and skills on Breeding, feeding and management of important farm animal species.

Table Subjects and courses taught or coordinated by the Department of Farm Animal Production and Health

Code No.	Subject title	Semester	Total (Hr)	Lecture (Hr)	Practical (Hr)	Clinical (Hr)	Units Equiv.
314(I)	Farm Animal Production I (Genetics and Animal Breeding)	5	45	30	15		2.5
314(II)	Farm Animal Production II (Ruminant Production)	5	45	30	15		2.5
324	Farm Animal Production III (Monogastric Production)	6	60	45	15		3.5
	Total		**150**	**105**	**45**	**0**	**8.5**
311	Farm Animal Medicine I (General)	5	45	30	15		2.5
321(I)	Farm Animal Medicine II (Ruminant)	6	45	30	15		2.5
321(II)	Farm Animal Medicine III (Monogastric)	6	45	30	15		2.5
421	Farm Animal Medicine IV (Aquatic medicine)	8	30	30			2
	Total		**165**	**120**	**45**	**0**	**9.5**
322(I)	Farm Animal Surgery I (Anaesthesia and Radiology)	6	45	30	15		VCS
322(II)	Farm Animal Surgery II (General Surgery)	6	30	20	10		VCS
412	Surgery III (Orthopedic)	7	45	30	15		VCS
	Total		**120**	**80**	**40**	**0**	**0**
413(I)	Reproduction and Obstetrics I	7	30	20	10		1.6
413(II)	Reproduction and Obstetrics II	7	45	30	15		2.5
423(III)	Reproduction and Obstetrics III (Obstetrics & Infertility)	8	45	30	15		2.5
	Total		**120**	**80**	**40**	**0**	**6.6**

310	Farm Animal Clinics I	5	30			30	1
320	Farm Animal Clinics II	6	30			30	1
410	Farm Animal Clinics III	7	120			120	4
420	Farm Animal Clinics IV	8	120			120	4
	Total		**300**	**0**	**0**	**300**	**10**
215	Aquaculture	3	45	30	15		VBS
316	Statistics and Epidemiology (Statistics)	5	60	45	15		3.5
317	Economics	5	45	30	15		2.5
416	Statistics and Epidemiology (Epidemiology)	7	45	30	15		2.5
418	Business Management	7	45	30	15		2.5
419	Human Resource Management	7	45	30	15		2.5
	Total		**285**	**195**	**90**	**0**	**13.5**
	Grand Total		**1140**	**580**	**260**	**300**	**48.1**

The aims of the Final year program are to impart sound knowledge and skills on diagnosis, treatment and control of diseases affecting farm, aquatic and wild animal species as well as obstetrics, gynaecology, artificial breeding, investigation of infertility and management of reproductive health in domestic and wild animal species and the investigation and management of disease outbreaks.

The aims of the courses dealing with general subjects are to provide the graduate veterinarian with knowledge and skills in collection and analysis of data, the principles of livestock economics including farm budgeting, principles of business management and human resource management.

3.2 Learning Outcomes

The expected competence of students in each of the different areas which are the responsibility of the DFAPH, are shown below:

Farm Animal Production

- Explain the role of the livestock sector in the Sri Lankan economy
- Recognize the different breeds and describe the breed characteristics of economically important livestock species
- Describe the status, trends, opportunities and limitations of ruminant, poultry, swine and micro-livestock industries in Sri Lanka
- Provide advice on improved practices for housing, feeding, management and breeding of large and small ruminants, poultry, swine and micro-livestock
- Explain the principles of genetics and how genes are responsible for passing characters from parents to the offspring
- Discuss how genetic improvement can be achieved by selection and breeding
- Describe the national breeding policy, breeding methods and breeding guidelines
- Explain the importance of biodiversity and genetic resource conservation and adopt appropriate practices for promoting conservation

Farm Animal Medicine

- Demonstrate the correct procedure of handling different species of livestock for routine veterinary procedures
- Perform clinical examination procedures on farm animal species for disease diagnosis

- Describe the clinical manifestations of all important diseases affecting farm animals
- Explain the procedures for treatment, control and prevention of diseases affecting farm animals and perform these procedures for the common diseases
- Describe the importance of welfare of farm animal species and adopt appropriate practices for ensuring their welfare

Veterinary Reproduction and Obstetrics

- Describe the normal reproductive functions of domestic, farm and wild animal species
- Diagnose the reproductive status in large ruminants using rectal palpation and ultrasonography, and in other domestic species using ultrasonography and other techniques
- Explain and perform the procedures for handling an abnormal parturition process of farm, domestic and wild animal species
- Describe and perform the procedures for evaluating breeding soundness in male domestic animals
- Describe the factors causing infertility in farm, domestic and wild animal species and perform the procedures for diagnosis, management and treatment of infertility
- Explain the methods used for pharmacological manipulation of reproduction
- Describe the reproductive biotechnologies used in domestic animals and their applications under practical conditions

Farm Animal Surgery

- Explain the concepts of producing anaesthesia and analgesia in animals for different surgical procedures using different anaesthetics and different routes of administration, and perform the basic procedures of local, regional and general anaesthesia
- Use the common diagnostic procedures for surgical conditions and interpret diagnostic images
- Explain the principles of veterinary surgery and perform the common surgical procedures for general and special surgical conditions
- Diagnose and surgically manage orthopaedic conditions

Statistics

- Explain the concepts of variability in a population and a sample
- Define the measures of central tendency and dispersion
- Differentiate between discrete and continuous data and describe scale measurement of data
- Explain the concept of probability and calculate the probability of discrete and continuous data
- Use different sampling techniques
- Explain the concept of hypothesis testing
- Use basic statistical procedures on data (Z-test, t-test, F-test and Chi-square test)
- Describe principles of experimental designs and their uses, techniques of analysis of variance (ANOVA) and precision of experiments
- Analyse data using manual methods and computer based software.

Livestock Economics

- Describe the contribution of the livestock industry to the Sri Lankan economy and the effects of macro-economic policies on the livestock sector
- Explain the following principles of economics

a) Theory of Production
b) Theory of Market
c) Theory of Money

- Perform farm planning and budgeting, and cost-benefit analysis

Epidemiology

- Explain the concepts of basic epidemiology
- Describe the principles of disease causation
- Explain the principles of frequency of events, design surveys and perform analysis of information
- Describe the common diagnostic tests and their use in clinical medicine

Human Resource Management and Extension

- Explain the relevance of learning social sciences and human behaviour
- Describe the basics of human resource management
- Explain the importance of extension communication for rural development
- Prepare and use extension aids and mass media

Business Management

- Describe the basic principles and management of business
- Apply the principles of management in practice
- Explain the role of marketing management as an important business function

4. FINDINGS OF THE REVIEW TEAM

General Observations

The primary responsibilities of the Department are to teach the important subjects of clinical surgery, medicine and production in farm animals and reproduction & infertility in all domestic animals. According to the Table, the Department has by far the largest workload in the Faculty (nearly 50 credit units) although a considerable proportion of this (14 units) consists of ancillary subjects which are in effect "outsourced" to teachers in the Faculty of Agriculture. In general, the review team was impressed by the overall quality of the teaching that is offered by this Department as well as the good relations maintained with the students.

A general observation was that there is little evidence of integration in the teaching of farm animal health and production. These are taught as separate courses and even in different years. There is the danger, therefore, of teaching clinical subjects out of context particularly in the case of swine and poultry. Farm animal reproduction is perhaps one area in which some integration was present but there too, there was no nexus with animal breeding.

With regard to farm animal clinical training, the students seem to have experienced at least the most important conditions in cows, goats and swine. We felt that students also need to be exposed to as many clinicians as possible and in this respect there is a severe dearth of large animal clinicians; the exposure to poultry clinical work appears minimal and clearly inadequate. Pathologists and other teachers from para-clinical disciplines including pharmacology are not sufficiently involved in the clinical teaching at the DFAPH. It was noted that the subjects of surgery and anaesthesia are taught by the DCS. The training in reproduction and infertility appears to be good.

Animal production had been taught from the inception of the Veterinary course by the Department of Animal Science in the Faculty of Agriculture. This is a fully-fledged Department - with an academic cadre of 19 that includes several Veterinarians. They taught a very comprehensive course in animal production to Veterinary undergraduates until the formation of the DFAPH after which the responsibility was taken over by the FVMAS. There are no records of what took place at the transition, however, and the reviewers were not able to assess the changes that took place. Since this is beyond the mandate of this review team, we believe that the FVMAS should appoint a suitable group to examine this in depth, develop a suitable graduate profile in order to ensure that veterinarians are taught animal production to the level that is considered essential. More details are given in Recommendations.

Finally, the review team felt that far too much time of the students in the important 3rd and 4th years were being spent on the non-core subjects such as economics, business management and human resource management. In any case, staff members of the DFAPH do not assume any real responsibility for the teaching of these subjects.

4.1. Curriculum Design, Content and Review

The original curriculum of the B.V.Sc training programme was similar to that followed by the Royal Veterinary College in London; with the passage of time, the curriculum was modified largely on *ad hoc* basis. The first major review and revision took place in 1991 and the next in July 2000 which is more or less the curriculum being taught today. A summary of the courses taught by each Department is given in the Faculty Prospectus and those of the DFAPH are shown in the Table.

The review team was satisfied with this curriculum with respect to reproduction and large animal clinical medicine and surgery. It was noted, however, that the control of epidemic diseases and related areas such as the regulation of disease at both national and international levels were not adequately dealt with in the curriculum. As a result, important aspects such as quarantine and the influence of disease on trade in animals and their products may not be taught. Since these are of paramount importance to Veterinarians in public service, this deficiency will need to be addressed.

A major concern of the review team was regarding the curriculum in animal production - both the content and the lack of integration. We noted that the animal production content was only around 8.5 credits; this compares with 28 core credits in animal production taught to all Agriculture students and an additional 30 credits taught to those specializing in animal production in that faculty. It is likely that many important aspects are not being adequately addressed. Integration is essential in the case of poultry and swine since in these species, disease prevention and control must be taught within the production context. It was also noted that animal nutrition is being taught in the second year, in isolation from the rest of the teaching in animal production leading to fragmentation.

It has already been mentioned that the curricular content of the non-core subjects are too much and in the wrong place. If these can be reduced and moved to earlier years as foundation courses, it may be possible to accommodate expansion in animal production. The important subject of epidemiology we believe should come under the purview of the Department dealing with public health and be taught earlier than at present.

The curriculum is once again being reviewed and it is expected that the revised curriculum will be implemented in 2010. The review team did not examine the proposed changes but recognize that the revision gives the opportunity to address some of the concerns raised by us.

Considering all the above, the Review Team judged the Curriculum Design, Content and Review aspect as SATISFACTORY

4.2 Teaching, Learning and Assessment Methods

A variety of teaching and learning methods are practiced in the Department which includes lead lectures, farm practice and clinical work. Clinical training includes fixed or planned training as well as *ad hoc* cases; in general, students get the opportunity to "see" the important conditions of farm animals during their clinical appointments. Students are not exposed, however, to a variety of clinicians as there are no specialists available in the Department. There is clearly a need to develop facilities and specialized staff for large animal clinical teaching. The training in reproduction and infertility consists of lead lectures, planned farm visits and infertility clinics providing a comprehensive training.

Large Animal Clinics and reproduction are taught in small groups and provide the opportunities to develop innovative and more effective teaching/learning methods. At the same time, there appears to be little use made of modern electronic teaching methods that encourage self-learning.

In contrast to large animals, the exposure of students to clinical poultry practice appeared to be inadequate. Moreover, it is important to teach poultry medicine in the context of the farm – as a flock rather than individual case basis; it should also focus on disease prevention and control. Facilities at the University and environs appear inadequate for this purpose. Although we visited the farm no report was available on the usage of the farm for teaching purposes

The number of qualified teachers for animal production appears inadequate. Ideally specialists – who are also veterinarians - should be developed for poultry, swine and dairy cattle who could perhaps teach both production and disease control in an integrated manner. These aspects should be studied together with the curriculum in the case of animal production.

It was also noted that course contents and learning outcomes are not given at the start of each course. The teachers need to develop ILO for each course, different sections of each course and even, where possible, for every lesson and convey them to the students beforehand. No formal tutorials are given in the Department, but clarifications are sought at the end of a section.

Assessments are usually made in formal examinations at the end of the teaching semester or year, although opportunities are available for making formative assessments. For example, students maintain good case records in the ambulatory clinic which can be used for formative assessments in a more formal manner.

Considering all the above, the Review Team judged the Teaching and Learning Methods aspect as GOOD

4.3. Quality of Students, including Student Progress and Achievements

Data was presented in the SER showing the academic performance of the student batches in the final BVSc examinations up to the year 2000. Recent data given of the 3rd BVSc examination show that students have performed exceptionally well in animal production. An increasing number of 'A' grades have been obtained by batches 1999/2000 and 2001/2002. The distribution of grades among these batches indicates that students are progressing well. At the final year, students are highly motivated and aware of the value of what they learn and the skills they acquire.

Since assessments are of the end-of-course type, there is no system to assess student progress during the course. Since the teachers deal with small groups, they are usually aware of the performance of individual students. This awareness could perhaps be developed into a more formal and documented system of following the progress of individual students during the time they spend in the DFAPH.

Considering all the above, the Review Team judged the Quality of Students, including Student Progress and Achievements Review aspect as GOOD

4.4. Extent and Use of Student Feedback

There is no formal mechanism in place in the Department to obtain feed back from students in any manner. However when discussions were held with the various batches of students it was evident that feedback is obtained in an informal manner. The staff gets opportunities to interact with the students while visiting clinical cases and farms which provide them adequate time to talk to students and build a good rapport with them. The students were emphatic that cordial relationship exists between students and staff of this department, thus paving the way for a good learning environment.

The review team was happy to note that many students who were interviewed rated this Department as one of the most student-friendly departments in the faculty. A large majority of the students were satisfied with the teaching and learning processes adopted by the department.

The review team noted, however, that the department does not have a formal staff-student liaison committee as expected in the Quality Assurance Handbook and wishes to recommend that such a committee be set up with representation from all batches of students following courses in this department in order to establish a formal mechanism to facilitate bilateral communication.

Considering all the above, the Review Team judged the Extent and Use of Student Feedback Review aspect as SATISFACTORY

4.5 Postgraduate Studies

A number of research projects are being carried out in the Department of Farm Animal Production and Health and four students are presently involved in research leading to MPhil degrees. In addition, other Post-Graduate students have opted to do their dissertations for the MVSc degree with the academic staff members of this Department. The documentation provided to the reviewers indicated that there has been a continuous stream of postgraduate

students working in the Department. The review team was happy to note that the Department has obtained many research grants for the department from funding agencies such as CARP, IAEA and the EU. The review team is satisfied that the Department of Farm Animal Production and Health possesses a sufficient infrastructure, facilities and equipments to conduct postgraduate research and provides a dedicated supervisory service to all postgraduate students.

However, we also noted that the PG work is more or less confined to reproduction whilst those in other disciplines are poor. Clinical cases provide a wealth of material which is not followed up perhaps due to the lack of participation by teachers from other Departments, in particular pathology. We also noted that research students had not followed a formal course in research methodology

Considering all the above, the Review Team judged the Postgraduate Studies Review aspect as SATISFACTORY

4.6 Peer Observation

The SER did not give any information regarding this aspect of the review. Even during discussions with the academic staff of the department it was evident that no emphasis has been given to peer observation of teaching and learning practices of the department although they recognize the need.

Considering all the above, the Review Team judged the Peer Observation Review aspect as UNSATISFACTORY

4.7 Skills Development

The SER did not give any specific information with regard to the development of skills within the Department. However the record books of students contain a list of skills that they are expected to develop and the clinical teaching ensures that these skills are taught by demonstration and subsequent hands-on experience. Moreover, during our meeting with final year students it was evident that the majority have developed the specific skills that they are expected to develop in this course. In addition, students are expected to make group presentations on selected topics. These learning strategies are expected to develop generic skills such as team work, information retrieval, communication skills and presentation skills. In addition, final year students also get opportunities to develop IT skills when preparing for their case presentations.

Although students appear to learn the basic skills in their final year, there is no formal list of skills or a designated strategy to develop the identified skills and to certify their acquisition. Such a strategy was only available for reproduction. The present clinical examination checklists could also perhaps be developed further as a skills list.

Considering all the above, the Review Team judged the Skills Development Review aspect as SATISFACTORY

4.8 Academic Guidance and Counseling

The self evaluation report mentions that student counselors have been appointed by the faculty and are available to the students. Subsequent discussions with the students and

members of the staff indicated, however, that student support is mostly provided by the Faculty at the initial stages. The structure of the curriculum, its nature and teaching and assessments methods are also made known to the students during this introductory stage. The faculty student counsellors attend to student needs and grievances when necessary. However there was no evidence to believe that the student counsellors have received special training for this purpose. The Department has not evolved a system of providing academic guidance and counselling to students who have been unsuccessful in the examinations conducted by the department.

Considering all the above, the Review Team judged the Skills Development Review aspect as SATISFACTORY

5. CONCLUSIONS

The main strengths and weaknesses identified in each of the sections during the course of this review are summarized below:

1. Curriculum Design, Content and Review:

- ***Strengths/good practices:*** The curriculum has sufficient breadth and depth to cover the main clinical training in large animals and reproduction
- ***Weaknesses:*** Too much time is spent on non-core subjects at the expense of core subjects, in particular Animal Production.

2. Teaching, Learning and Assessment Methods

- ***Strengths/good practices:*** The teaching methods used are adequate to achieve the Learning Outcomes. Final year clinical assessments are done immediately after the clinical rotation.
- ***Weaknesses:*** More innovative methods could be used to improve the teaching learning process and development of skills. : Self learning and small group learning strategies are minimal.

3. Quality of Students including Progress and Achievements

- ***Strengths/good practices:*** The quality of students and achievements are good with very few failure rates. The trends indicate that students are progressing well.
- ***Weaknesses:*** The assessment of student progress needs to be formalized and documented.

4. Extent and Use of Student Feedback

- ***Strengths/good practices:*** Opportunities for feedback are available and the students are happy with them.
- ***Weaknesses:*** Absence of a formal mechanism to obtain quantitative and qualitative feedback and proper documentation

5. Postgraduate Studies

- ***Strengths/good practices:*** The Department has a strong research program in reproduction with several post-graduate research students, good facilities for research and many sources of funds for research activities.
- ***Weaknesses:*** Other disciplines in the Department need to develop their research. There was no evidence of research being conducted in some subject areas.

6. Peer Observation

- ***Strengths/good practices:*** The Department appreciates the need for peer observation of all aspects of teaching, learning and assessment
- ***Weaknesses:*** It is not currently practiced There is no evidence of any peer observation practices taking place in the department

7. Skills Development

- ***Strengths/good practices:*** Skills to be acquired have apparently been identified and students are aware of them and are actually being developed.
- ***Weaknesses:*** They are not formally identified or certified.

8. Academic Guidance and Counseling

- ***Strengths/good practices:*** Counseling system is in place for the University and Faculty.
- ***Weaknesses:*** A formal mechanism of providing academic guidance within the Department and counseling with trained personnel were not evident

Aspect Reviewed	Judgment Given
Curriculum Design, Content and Review	Satisfactory
Teaching, Learning and Assessment Methods	Good
Quality of Students including Student Progress and Achievements	Good
Extent and Use of Student Feedback, Qualitative and Quantitative	Satisfactory
Postgraduate Studies	Satisfactory
Peer Observation	Unsatisfactory
Skills Development	Satisfactory
Academic Guidance and Counseling	Satisfactory

The overall judgment is suspended

6. RECOMMENDATIONS

The recommendations listed below arise from the comments made in the report and are designed to overcome some of the shortcomings identified therein.

- Introduce students to clinical teaching as early as possible in the curriculum so that all subjects (pre and para) are taught in context.

- Involve all academics in the Faculty who are Veterinarians in clinical teaching and discussions, especially those teaching pathology and related subjects
- Develop specialists in different (farm animal) clinical areas such as clinical medicine, surgery and anaesthesia and control of epidemic diseases; at the same time, there is a need for a large animal hospital – perhaps Getambe Veterinary Hospital - to properly develop farm animal clinical training
- Develop the teaching of poultry medicine by exposure of students adequately to clinical cases within farm situations; integrate with poultry production in a manner that disease prevention and control will be taught in the proper context and setting with support from pathology and related para-clinical disciplines
- The emphasis and duration allocated to ancillary subjects should be reduced and perhaps given as foundation courses much earlier; they could also be offered as electives. The time saved from this exercise can be used for animal production and clinical work in the final years
- The teaching of farm animal production should be completely overhauled in the following manner:
    - Develop a graduate profile that describes the competencies needed by Veterinarians with regard to knowledge and skills in animal production and redesign the curriculum to meet these outcomes. A special committee may be appointed for this purpose who should in particular address the following:
    - Compare the curricula before and after taking over from the Department of Animal Science
    - Teaching about Animal products (meat, milk, eggs, fiber, slaughter by-products), their characteristics, basic processing and factors affecting quality
    - Identify the specialists needed for animal production subjects – for example, poultry, swine, Dairy cattle/buffalo, Small ruminants
    - True integration of health and production at least in some areas such as poultry, swine and dairy cattle; ideally we should develop specialist Veterinarians proficient in both health and production of these farm animal species
    - “Defragment” animal production by including nutrition
    - Redesign the animal production components in the new curriculum
- Train staff in curriculum development and delivery
- Small group discussions and problem based learning methods should be introduced as teaching/learning tools
- Lectures could incorporate more computer based learning strategies such as video clips to liven the otherwise didactic teaching in the curriculum
- More self learning activities such as student seminars, self study packages incorporating web based and non computer based, study guides and assignments could be introduced.
- Students should have access to the computer unit for a longer duration of time.
.- The department should increase number of computers and access to internet for the non academic staff to develop their IT skills and research students to store and analyse their research data.
- A formal mechanism to obtain quantitative feedback from students in the form of structured questionnaires should be introduced for all aspects of teaching as well as for individual teachers so that the deficiencies in the teaching learning process if any can be identified.
- Qualitative feedback can be obtained via student staff liaison committees, department meetings with students on a regular basis; Establish a formal mechanism to address student appeals, grievances and problems related to academic matters

- Establish a formal mechanism to obtain peer observation and feedback to improve quality of teaching and learning
- Students should be guided regarding their future prospects in the field of Veterinary Medicine. This can be arranged by the professional associations through a mentoring program.
- Opportunities should be available for the technical officers in the FAPH to be involved in teaching and research activities of the department for their continuing professional development. A cadre position for clerical and computer assistant should be created to facilitate the preceding recommendation.