

# SUBJECT REVIEW REPORT

## DEPARTMENT OF ANIMAL SCIENCE



## FACULTY OF AGRICULTURE UNIVERSITY OF RUHUNA

01<sup>st</sup> to 03<sup>rd</sup> December 2004

**Review Team :**

Prof. S. A. Kalsooriya, University of Peradeniya

Prof. (Ms.) Kalyani Perera, University of Peradeniya

Dr. A. R. Ariyaratne, University of Peradeniya



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Department of Animal Science in the Faculty of Agriculture, University of Ruhuna, Mapalana, Kamburupitiya. The primary source of information for this review is the self-evaluation report submitted by the Department of Animal Science. This was supplemented by a 3-day visit to the Department and the university by a review team comprising of Senior Professor S. A. Kulasooriya, Faculty of Science (Chairman), Professor Kalyani Perera and Dr. A.R. Ariyaratne, Faculty of Agriculture, University of Peradeniya as team members. The principal aspects covered in this review are: i) curriculum, design, content and review, ii) teaching learning and assessment methods, iii) quality of students including progress and achievement, iv) student feedback, v) postgraduate studies, vi) peer observations, vii) skills development and viii) academic guidance and counseling.

Arriving in Matara the evening prior to the day of the review, the team had a discussion and based on the information from the self evaluation report, developed a strategy to proceed with the review exercise during the next three days. The review process commenced with a meeting with the Dean, Faculty of Agriculture Professor K. D. N. Weerasinghe. The Dean briefed the review team of the activities of the Faculty in general, new developments and current trends in teaching and research and the position of the Department of Animal Science vis-a vis, the other five departments in the Faculty. The Department of Animal Science being one of the founder departments of the Faculty is now 25 years old and occupies the 3rd position in student enrolment, behind the Departments of Agricultural Economics and Crop Science.

The team then visited the Department of Animal Science in the company of the Dean. The team was welcomed by the Head of Department Prof. (Mrs) R. T. Serasinhe who introduced the other staff members (permanent, temporary and technical) currently present in the department. The review team having explained the purpose of the review exercise, the agenda for the rest of the programme was discussed and finalized over light refreshments.

The Head of the Department made a 'power point' presentation on the self evaluation report, highlighting the strengths and weaknesses of the department, clarifying certain points and explaining where necessary, some information included in the report. The open and frank discussion that followed was extremely helpful for the evaluation exercise. After lunch, the team visited laboratories, lecture rooms, computer rooms and the library and observed the facilities, equipment and consumables available for teaching and research. These visits also enabled the team members to talk to the supporting staff and get an idea of their perception of the activities of the department and the use of these facilities by the students. The rest of the afternoon was spent with a group of 4th year students and graduates who have just completed their degree course in Animal Science. This discussion held over light refreshments, in the absence of permanent staff members of the department, turned out to be a very profitable exercise.

Returning to the main campus of the University at Wellamadama, the team met the Vice-Chancellor Professor Ranjith Senaratne in the presence of the Dean of the Faculty of Agriculture and the Head of the Department of Animal Science. The Vice-Chancellor warmly welcomed the team and a very cordial discussion was held for over an hour. The team was quite impressed and encouraged by the attitude of the Vice-Chancellor towards the review exercise. He compared it to a patient going to a Consultant Physician for a check up, who after scrutinizing the relevant reports would diagonize if there is an ailment and recommend

hand, if one remains aloof and too self confident and suddenly collapse and the condition could be beyond

The two subject specialists Prof. Kalyani Perera and Dr. A. R. Ariyaratna prepared the draft reports on course content, the coverage with respect to lectures, lab classes field and farm activities, industrial training etc, and the adequacy of resources (manpower, facilities, equipment) for the effective achievement of the aims and objectives as laid down in the self evaluation report. The entire team having peer reviewed the achievements of the students, observed teaching by senior, mid-level and probationary teachers and having had a series of discussions with all the stake holder groups, prepared the final report under the guidance of the Chairman, Prof. S. A. Kulasooriya.

## **2) THE UNIVERSITY, THE FACULTY AND THE DEPARTMENT**

The Ruhuna University of Sri Lanka was established on 28th August 1978 and celebrated its Silver Jubilee in 2003. Having commenced its academic programmes with a student population of 275 and a staff strength of 40 academic and 50 non-academic members, today the university has about 5000 students in six Faculties taught by 450 academic staff supported by 800 non-academic staff (Ruhuna University Handbook 2002). The Faculty of Agriculture which initially started as a college affiliated to the Faculty of Agriculture, University of Peradeniya in 1978 gained autonomy as an independent Faculty of the University of Ruhuna in 1984 (Faculty of Agriculture, University of Ruhuna, Students Handbook 2001/2002). The faculty is located in the former Mapalana Farm premises of the Department of Agriculture in Kamburupitiya some 16 Km away from the main campus of the University.

The Faculty consists of six departments catering to a total student population of 583. The department of Animal science has been one of the founder departments of the Faculty and conducts classes to students of all four years of the Agriculture degree programme. It has 10 permanent academic staff members on its role. Among these, one member was on sabbatical leave, 4 members were on probationary study leave and one on maternity leave, at the time of the review (personal communication, Head of Department).

### **Courses being reviewed**

- ANS 1101, year 1, semester 1: Principles of livestock production. Already completed, no new students enrolled.
- ANS 1202, year 1, semester 2: Livestock production: Non ruminants. Students enrolled 110.
- ANS 2103, year 2, semester 1: Principles of livestock feeding, Agrostology. Completed.
- ANS 2204, year 2, semester 2: Applied nutrition, Genetics and Diseases of animals. Students enrolled 99.
- ANS 3105, year 3, semester 1: Livestock production: Ruminants. Students enrolled 108.
- ANS 3206, year 3, semester 2: Practical livestock production. Students enrolled 111.
- ANS 4107, year 4, semester 1: Animal science. Completed.
- ANS 4200, year 4, semester 2: Animal science, Research project. Students enrolled 8.

## COMES (reproduced from the self-evaluation report

- The prime objective of the department is to produce graduates with necessary skills and knowledge to handle all technological processes involved in the chain of livestock production commencing from farm planning and establishment of livestock farms to end products reaching the market.
- Familiarize with the subject matter not only through face-to-face learning, but also through self study.
- Provide opportunities to practically participate in farm activities and familiarize with the restrictions in marketing and how to overcome them by applying the theoretical knowledge into realistic situations.
- To expose students to laboratory techniques, use of laboratory and field equipment in handling livestock and recent advances in animal product technology.
- Provide diverse and challenging learning opportunities during the farm practice course to apply theoretical concepts into practical on farm situations and to develop their academic interests, potential and enthusiasm required for life long learning.
- Offer field trips to cover more practical aspects under real farm situations allowing students to broaden as well as deepen their educational experience.
- Support their career development, including effective face-to-face communication, to work as a member of a team, write project reports and to transfer the knowledge generated by research to the field.
- Develop human resources and technologies on present needs and future challenges for the purpose of assuring well being of mankind.

### ***Subject Specific Learning Outcomes***

On successful completion of the programme, students should have obtained the following knowledge and understanding.

- General animal husbandry - Potentials, constraints and present status of major livestock industries in Sri Lanka. On going and completed projects in the livestock sector. Existing policies and laws pertaining to the livestock industry.
- Bioclimatology - Basic principles in climatic influences on livestock production. Mechanisms of thermo-regulation. Climograph and acclimatization. Practical methods to overcome heat stress.
- Basic anatomy and physiology - Anatomical and physiological aspects with special reference to digestive and reproductive systems, pregnancy and parturition of farm animals.
- Animal product technology - Meat breeds and basic principles of meat science, different meat products, clean milk production and milk products. Present status of meat and milk industry in Sri Lanka and future developments.
- Animal genetics and breeding - Domestication, growth and development, cytogenetics, selection and selection methods, variation, heritability, selection differential, genetic gain, repetition, inbreeding, breeding methods, heterosis relationship, population genetics and genetic engineering.
- Basic fish biology and aquaculture - Exotic and indigenous species, present status and future progress of inland fisheries industry, fish farming systems, pond fish culture and fish breeding.

, feeds and their classification, quality evaluation of of ruminant and non-ruminant nutrition, nutrient ations and feeding of livestock and poultry.

- Agrostology - Potential for pasture production in Sri Lanka and suitable grass and legume species for different agro-climatic zones, pasture establishment, fertilization, growth physiology, role of legumes and nitrogen fixation, defoliation and grazing management, pasture conservation, herbage quality and measurement of pasture production.
- Large and small ruminant management - Cattle, buffalo, goat and sheep breeds, housing and all production aspects.
- Animal diseases - Diseases of all livestock and poultry with special reference to their control and prevention in Sri Lanka.
- Advanced courses in various disciplines offered during specialization in animal science will add to the general ability of an agriculture graduate in teaching, research, and training in livestock in collaboration with other research institutes in the country and private sector organizations. Students develop skills in experimental design, data collection and interpretation, critical evaluation of their data and oral and written communication with research staff.

#### ***General Learning Outcomes***

- Building upon their academic qualifications, knowledge and skills to fit into various disciplines in animal science and allied fields.
- Students would select final year research projects depending on their specific interest in the subject area of animal science thereby catering for their specific interests and talents. .
- Strengthen the research, communication and working skills through inter-institute collaborations.
- Overall, we provide an environment that promotes a high quality learning experience.

#### **4) OVERALL JUDGEMENT**

The review team has arrived at an overall judgement of **limited confidence**. Only one out of the eight aspects has been judged as unsatisfactory. However, many other aspects have room for improvement and recommendations are made in order to help and strengthen the activities of the department.

The curriculum design and content are good as far as subject matter is concerned. Nevertheless if courses can be offered in modular unit form with relevant credit values, it could minimize repetitions, ease the workload of the students and be more effective in imparting knowledge and practical skills. Although difficult, every effort should be made to minimize the gap between theory lectures and the corresponding laboratory classes.

Teaching and learning methods are satisfactory, but could be strengthened by the improvement of teaching material used particularly by the younger staff who should be brought under stronger scrutiny and guidance of the senior staff. The assessment methods warrant revision with less weightage given to end semester examinations and a grade point system of evaluation should be introduced.

and limitation of facilities, the quality of the students is  
commitment and dedication of the few hard working staff  
ment.

Although the initiatives taken by certain staff members to have a dialogue with the students have been noted as satisfactory, the lack of a formal system in the department to obtain student feedback is a weakness.

The facilities available and the guidance provided to the 3 postgraduate students are satisfactory. This is primarily due to the perseverance and dedication of the corresponding supervisors. These arrangements are certainly not adequate for the expansion of postgraduate teaching in Animal Science. The absence of a formal system for regular postgraduate programmes is a weakness, but this has to be rectified at the entire Faculty level.

There is no peer observation system, other than casual consultation between senior and junior staff. This is unsatisfactory and could perhaps be a major reason for the teaching deficiencies noted by the students among the junior staff. It is strongly recommended that a formal system of peer observation is introduced together with cooperation from other departments in the Faculty, until such time the senior staff situation in the Department improves.

Skills development appears to be satisfactory and is reflected in the confidence developed by the students as they progress through the 4-year programme. It could be improved further by an increased exposure of the students to practical applications of Animal Science on an industrial scale. Strengthening of skills in areas like computer literacy, information technology would further enhance the quality of the graduates.

## **5) FINDINGS OF THE REVIEW TEAM**

### **5.1 Curriculum Design, Content and Review**

The Animal Science curriculum presented in the self evaluation report is designed to offer basic principles of different aspects of livestock production in the first semester of each year. The application of these aspects is taught in the corresponding 2<sup>nd</sup> semester during the 1<sup>st</sup> three years of the degree programme. These courses are followed by all students in the Faculty of Agriculture. The second semester of the third year is assigned to the farm practice course that provides hands on experience on various practical aspects involved in animal production. This arrangement of courses facilitates the imparting of essential knowledge and practical skills in animal science to all undergraduate students in agriculture. The advanced courses in animal science offered to a limited number of students specializing in Animal science in their 4<sup>th</sup> (final) year incorporating current issues of interest such as biotechnology, animal waste management, provide them with knowledge on selected important fields of animal science. These are strong points of the curriculum.

The final year research project provides an opportunity to gain skills in research problem identification, design, data analysis and interpretation. We find this build-up type of arrangement of courses with an increase in the allocated number of hours as the students progress through their degree program, as strong features of the curriculum design.

The content of the animal science curriculum (Annexure 1) is compatible with the subject specific learning outcomes stated in the self evaluation report. It covers every essential and important aspect of animal science. In every course (except for the courses offered during the

included. During the meetings with students and staff, students in the final year, specializing in Animal Science are sent to various livestock farms to gain further practical experience. These field activities are not identified separately in the course schedule given in the self evaluation report which presents all teaching in the 4th year under 150 hours of theory. This was a little misleading. Reviewers consider the inclusion of every important theoretical aspect of animal science and the inclusion of practical training in every semester as another strong feature of the curriculum. However, the number of hours of teaching allocated for some courses (e.g. Anatomy and Physiology) appears to be insufficient to cover all the indicated sub areas. There being only 03 tutorials during the entire 4-year course and only two hours of practical being allocated for aquaculture (Table 1, self-evaluation report) is grossly inadequate. The curriculum will be further strengthened if such weaknesses are rectified.

Organization of courses from basic principles to applied aspects leading to independent studies is a suitable approach to meet the intellectual demand of the students as they progress through the curriculum, facilitating accomplishment of the goals and general learning outcomes indicated in the self evaluation report. The positive effects of this approach are reflected in the gradual improvement of student performance as they progress through the course.

However, some of these courses seem to be too bulky (ex. ANS 3105), while some course contents appear to have been repeated in different courses (Example: Applied reproduction in ANS 3105 and Applied reproduction & advanced physiology in ANS 4107). Yet others are diverse e.g. ANS 2204 where topics from three different subject areas (animal nutrition, genetics and diseases), are lumped together. It appears as if the content of the old syllabus has been distributed to a semester based structure together with the incorporation of some new contents. Taking the first step toward the course unit system is commendable. This change has resulted in an evaluation procedure of a semester system. While this approach is acceptable as a transitional stage, the final aim of this revision should be to move towards a fully fledged semester based course unit system.

The next step should be to change towards a true semester based course unit system with a unit/modular approach. It is suggested to reformulate the courses into course units comprising of 30 - 45 lecture and practical hours, and implementation of grade point evaluation system as early as possible. It is necessary to create clear awareness on the advantages of such a change among both students and staff prior to the introduction of such a change.

The principal focus of laboratory and field practical classes in science based subjects should be knowledge based skills enhancement. Therefore the ideal arrangement should be, to have practical classes immediately following the corresponding theory lectures. While it may be difficult to have the ideal situation always, some changes have to be initiated to minimize the present long gaps between theory and corresponding practical classes. This weakness was brought to the notice of the review team during discussions with the students. Although the Head of Department and staff accepted this position, they had some difficulties in bringing about major changes to the current schedule of teaching. If such deficiencies are overcome, the quality of the curriculum would be further improved, and expected subject specific outcomes stated in the self evaluation report be effectively realized. It was also noticed that other than the choice of field of specialization at the end of third year, the curriculum does not offer any option to the students in terms of selection of courses. Although the courses are offered as 'modules' during the 4th year, all these modules are compulsory. It would be

vided within the advanced courses by offering certain elective. Intentions to bring about such changes are and Improvement Plan prepared by the department

(Annexure 2) and Reviewers endorse them as positive steps.

According to the self evaluation report the Department has gone through a major revision of the curriculum to abide by the university reforms, and to relieve part of the examination burden from the students, and has adopted a semester based curriculum and continuous evaluation system. New developments in the subject are discussed with junior staff and the students. The review team perceives these as positive developments and changes in the right direction. However, there was no indication regarding the input from relevant external reviewers such as the Department of Agriculture, Department of Animal Production & Health and the private industry, for curriculum revision. Nevertheless, according to verbal information and written supplementary documents (Annexure 2) submitted by the Head of Department, inputs from Alumni, information available on internet websites, and the curriculum of Department of Animal Science, Peradeniya University have been obtained during the revision. However, the programme has not been accredited by a professional body. According to the head of department their teaching programmes have also been submitted for evaluation by the IRQUE funded project team. It is recommended that a periodic, regular process of curriculum review and revision is adopted by the department preferably in consultation with relevant stakeholders.

***The review team finds the curriculum design and content to be good, and the review process of the subject SATISFACTORY.***

## **5.2 Teaching, Learning and Assessment Methods**

### ***Teaching***

Teaching is mainly done by the faculty staff while visiting staff is invited for some courses/lectures. Most of the faculty staff has gone through training in teaching methodology. Teachers are aware of the methodologies for student centered teaching/learning processes. In classrooms, teaching is done with the usage of chalk-board, overhead projector, multimedia-projector, and other tools such as posters, handouts and note sets. Large note sets are made available in the library to give opportunities for students to make references and complete their course notes.

The information provided by formal lectures is supplemented by laboratory classes. Opportunities to gain hands on experience and developing skills to practice theoretical knowledge is provided mainly through the farm practice field classes. In addition, specialization students are taken to farms and farm based industrial organizations to learn the application of animal science in large scale operations.

The physical resources for teaching included spacious class rooms and reasonably equipped laboratories along with the livestock units. The students have satisfactory opportunities for practicing what they learn in class rooms, due to the adequate flock size of the poultry units and the herd strength in the livestock units. An improvement in the variety of breeds in the livestock units would strengthen these programmes. The farm practice courses appear to be satisfactory as far as individual student involvement is concerned, but could be improved by providing additional instructors.

is largely on teacher centered instructions, particularly programme. In a way this is inevitable due to the large (100 in each batch) and the relatively small number of academic staff (currently four available permanent members). The laboratory classes to some extent enable students to learn things on their own, but the limited number of specimens and equipment are constraints for individual skills development. Student centered learning is most likely to be practiced during the 4<sup>th</sup> year of specialization, but the review team did not get the opportunity to verify this because the 4<sup>th</sup> year students were not available for interviewing. This batch of students was out of the campus conducting their research projects. The research project done during the 2nd semester of the 4th year is perhaps the best opportunity for the students for independent study. This again could be either stimulated or stultified by the attitude of the supervisors and the team does not have enough evidence to comment on this aspect.

On the whole the members of the staff are making a concerted effort to improve teaching and knowledge delivery systems but there is room for improvement. As stated earlier, the gaps between theory lectures and the corresponding practical classes should be minimized. All the batches of students with whom discussions were held, indicated this as a weakness in the system. The Head of Department while admitting this shortcoming stated that every effort would be taken to remedy this when the staff strength in the department improves after the return of lecturers currently on probationary study leave.

Majority of the academic staff (the younger generation) has undergone training in teaching methodologies. But, the effective use of these concepts in classroom or laboratory environments by all the members has to be encouraged.

Lack of opportunities for farm visits during the core programme of the 1<sup>st</sup> three years is a disadvantage to the students. The large number of students and the attended high costs may be prohibitive to organize regular visits to farms. At least one visit per batch could bring about a significant improvement in observing the application of animal science in industry.

Students are generally satisfied with the teaching by senior staff including the visiting staff. They had some reservations on the teaching by junior lecturers and temporary demonstrators. It appears that these teachers depended heavily on their own student lecture notes which were repeated with little or no explanations or updating. During the discussions with the students, it was brought to the notice of the review team that some junior staff members are unable to answer questions directed to them by the students. A stronger supervision of the work of younger staff by the senior staff could certainly bring about an improvement.

### ***Learning***

All academic programmes are conducted in the English medium. To move from learning through the mother tongue to a foreign language must be an arduous task particularly during the 1<sup>st</sup> year. All students are given an intensive course in English language on admission to the university. The review team was impressed by the competency in English among the students. Perhaps they have realized the importance of this international language to meet future challenges and career development.

During lectures most of the students were more interested in writing down notes than listening and understanding. They seem to write down anything and everything mentioned by the lecturer or displayed on the screen. They spend time after class hours to complete the note



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wed from other students. Additional time spent for students from engaging in extracurricular activities that

It is not easy to move away from this type of note learning particularly during the teaching of theoretical aspects. Experienced teachers may be able to draw students into active participation during lectures and impart knowledge through effective discussion and dialogue. To some extent, this also depends on the course content. It may be desirable to include only the principal salient points in overhead transparencies and other illustrative accessories and built up your lecture around them. When detailed information is included in such material, the students naturally attempt to copy all of them without paying any attention to explanations and comments made by the teacher. Preparation of teaching material is crucial in effective delivery of knowledge. A set of transparencies submitted to the review team by the Head of Department from her lectures, was brief, informative and of a high standard. Besides providing training in teaching methodologies it may be desirable for the senior staff to supervise and guide the preparation of teaching material by their junior colleagues.

Majority of students appear to comprehend instructions given during laboratory and farm practice classes. One advantage in these classes is the ability of the students to move around and obtain advice on an individual basis.

Handouts distributed in the class or made available in the library help the students to comprehend lecture material especially for those who have difficulty in following classes in the English medium. The negative impact of providing too many handouts is, that certain students tend keep away from lectures on the presumption that the material in the hand outs are sufficient from them to pass examinations.

### ***Assessment Methods***

The department utilizes a combination of different assessment methods for the overall evaluation of student progress throughout the course. This is certainly an improvement on the conventional dependency on end term examinations. However, even with the novel changes a higher weightage is given to end semester theory and practical assessments. Continuous assessments are given only 20% of the total mark except during the 2<sup>nd</sup> semester of the 3<sup>rd</sup> year where farm practice is assessed mostly by continuous assessment. Evaluations based upon quizzes during continuous assessment have run into some difficulties as stated under section 5.1 General quality management, in the self-evaluation report. Implementation of an unambiguous, proper continuous assessment without adequate permanent staff is a difficult task. The department should therefore be given sufficient time to move from the present status of assessment to a fully fledged course unit system with less weightage being accorded to end semester examinations. The intention to move in this direction is evident from the statement on page 14 of their self-evaluation report "Our final goal is to see that a student achieving a distinction level in continuous evaluation even without the end semester examination should be able to at least pass the subject."

Having an oral viva evaluation as a part of the final examination in the 3<sup>rd</sup> year is very useful in developing self confidence among students.

The grading system is similar to that of the old curriculum in the faculty. Letter grades are assigned and the performance level (class) is decided according to the final mark (percentage). In the course unit system, the Grade Point Average (GPA) has to be calculated.

Under the proposed curriculum revision. Introduction of most foreign universities which offer opportunities for methods of grading. It is easy for them understand such a system in evaluating the performance of our graduates.

***The teaching and learning aspects are SATISFACTORY, but the assessment methods have room for improvement.***

### **5.3 Quality of Students, Student Progress and Achievements**

According to the self evaluation report submitted by the Head / Animal science, because of the pre-selection procedure adopted by the UGC in allocating students with higher Z scores to the University of Peradeniya, the Ruhuna faculty of agriculture receives 'second grade' students. The report also claims that the standards of the graduates they produce are in par with those of the agriculture graduates produced by Peradeniya due to the strength of the curriculum and dedication of teachers. The pre-selection procedure adopted by the UGC is a known fact, and therefore the review team did not request documentary evidence in this regard. There was no opportunity to verify the claim regarding the quality of their graduates in comparison to those of Peradeniya. Perhaps it is useful to have this type of positive thinking among the staff, but if it leads to over-confidence the impact could be negative.

As for the progress and achievement of students, our observations are based on the documentary evidence on grades obtained for animal science courses, first destination of graduates (employment details), graduate profile statistics and information generated from discussions. According to the views expressed by the students and just passed out graduates, there is no significance difference in performance between the students who offered Agriculture as a subject at the G.C.E. advanced level and those who offered Physics or alternative subjects. All of them have a Biology background which enables them to understand the subject matter in relation to animal science. Although the medium of instruction is English, which is not the medium of instruction for majority of students during their school career, the performance of the students showed a normal distribution pattern, with the majority securing B or C grades in animal science examinations. The number of A s and failures were low (Annexure 3). Evidently, the progress of the students can be considered satisfactory.

Information pertaining to profile of the animal science graduates was limited to their employment details (Annexure 4). Among 33 animal science graduates who passed out during the last four years, approximately 33% are employed in animal science related fields in government, semi government, private sector institutions, while a similar number has joined the recently introduced graduate training scheme. Only a handful is engaged in a research / teaching / bank career, while a similar number is self employed. This indicates the relevance as well as the versatility of the curriculum.

According to Table 2.3.4. on waiting time for the first job (Annexure 5), nearly 60% Agriculture graduates are able to secure a job within 12 months of graduation. This percentage has improved from 1998 to 2002, indicating improvement in the quality of graduates produced by the faculty. Introducing courses such as Career development and industrial (in-plant) training into the curriculum to expose the students to 'real working' environment, and strengthening institutional links with the industry will help to further improve the quality of graduates. This will also enhance their ability to secure employment soon after graduation.

annexure 5 are compared, it appears that the programme  
ever, the Faculty rarely receives its full cadre of students  
and/or early withdrawal. The Faculty and the Department  
have taken steps to publicize the degree programme and attract better and more students  
through printing of an attractive brochure, holding exhibitions etc. We consider this as a good  
move and suggest that other possibilities such as opening a website and/or having open days  
be initiated to popularize the courses offered by the department.

***The quality of students is good and student progress and achievement are SATISFACTORY.***

#### **5.4 Extent of Student Feedback, Qualitative and Quantitative**

The self-evaluation report refers to 'verbal feed back sessions' directly and indirectly through demonstrators, research assistants and recently recruited staff. These are all adhoc arrangements and no formal system of student feed back is operational.

The self evaluation report also provides evidence of informal verbal feed back from students by certain staff members. The only remedial action taken after such feed back has been to remove continuous evaluation and quizzes to minimize student work load. Naturally, such moves are welcomed by students, but they do not lead to the improvement of teaching, learning and assessment. Some teachers have accepted feed back from students and adopted corrective measures, but others have not shown much interest for this type of action. They continue to practice what they believe to be correct. Students do not feel comfortable to communicate with such teachers on the teaching practices of individuals and the course contents. Although no formal feedback methods are practiced, efforts have been made to obtain views of the students on teachers and subject contents. This was practiced voluntarily on an individual basis. The teachers who have practiced it wanted to improve themselves as teachers. These initiatives taken by some members of the academic staff are commendable.

It is suggested that the department introduces a formal, voluntary teacher evaluation system conducted in an objective manner on an anonymous basis. Perhaps the system practiced by the Faculty of Agriculture, University of Peradeniya can be used as a model.

A group of students expressed their views on the unsatisfactory performance of a section of the teaching staff. They related this to what they perceive as short comings at recruitment. It is desirable to take steps to clear this student perception and develop more confidence among students on their academic staff. Students also complain of the heavy academic workload. During working time, students are engaged in academic work without any free time for other activities. This is a matter to be considered in the future curriculum development activities.

***The review team considers the initiatives taken by certain staff to establish student feed back as SATISFACTORY, but there is room for improvement.***

#### **5.5 Postgraduate Studies**

##### ***Appropriate support and resources for postgraduates***

As indicated in the self-evaluation report, enrolment for postgraduate studies is minimal due to several reasons. The diversity of programs and courses offered by the Postgraduate Institute of Agriculture and to some extent, the Postgraduate Institute of Science is having a negative effect on enrolment for postgraduate studies in the department. As there is no regular budgetary provision for postgraduate studies, the department can offer such study positions only if staff members secure research grants where provision is made for graduate students. Such grants are difficult to come by and the shortage of senior staff in the

obtain research funding. Currently there are only 3 permanent and whatever resources and facilities they enjoy from the supervisor under whom they work. The review team

had the opportunity of meeting only one postgraduate student who was attached to the department as the Research Assistant of the Head of Department. He was satisfied with the facilities available and the individual attention he receives.

#### ***Critical mass of permanent research active academic staff***

At present the department does not have a critical mass of research active permanent staff. An improvement of this situation could be expected with the return of lecturers who are currently on probationary study leave.

#### ***Availability of training research methods and other areas***

The absence of a formal postgraduate research programme in the department may be cited as a weakness, but it is necessary to view this situation in relation to the dearth of graduate students enrolling with the department. Until then it is unrealistic to expect the department to have formal programmes on research methodology, scientific writing, computer literacy etc. As an interim measure such a programme could be offered by the entire Faculty and this may have a critical mass of research students to make the programme viable.

*The situation with regard to postgraduate teaching in the department is **SATISFACTORY** in the context of the number of senior academic staff present, but steps must be taken by the entire Faculty to formalize and expand postgraduate studies.*

#### **5.6 Peer Observation**

It is evident from the self evaluation report that peer observation happens only in an informal manner among the different categories of staff members. While this may be due to the department having only 4 permanent staff members, it is recommended that a peer observation and evaluation system be formalized and implemented as a regular feature in the administration of the department. As a beginning peer observation could be included as an agenda item in the regular meetings of the departmental committee.

***Currently the status of peer observation is UNSATISFACTORY.*** Perhaps the entire Faculty can implement a scheme of peer observation, until each department secures a critical mass of postgraduate qualified, experienced teachers.

#### **5.7 Skills Development**

Students are initiated to knowledge based skills development during the practical classes of the 1<sup>st</sup> two years. Development of skills among individuals commences with the farm related activities of the 3<sup>rd</sup> year, particularly in the 'Farm practice' course where each and every student is given the opportunity to handle livestock and poultry. Individual skills development particularly with respect to research activities is provided during the 4<sup>th</sup> year specialization programmes. The research project work offers the students opportunities to enhance their skills in data collection and analysis, report writing and communication and presentation. This approach appears to be satisfactory and the review team was impressed by the self confidence gained by the students of the 3<sup>rd</sup> year. Unfortunately the team did not get an opportunity to meet the 4<sup>th</sup> year students as they have left the campus to commence their research projects. Facilities for modern day skills development particularly in computer literacy and information technology are severely limited. This was brought to the notice of the review team by all the students with whom discussions were held. They lamented that the students of the Faculty of Agriculture are deprived of such facilities in comparison to those of

particularly those of the main campus at Wellamadama. If  
be taken without delay to rectify this situation.

***Judging by the students whom the review team met, the level of skills development with regard to the 'subject of Animal Science appears to be SATISFACTORY.***

### **5.8 Academic Guidance and Counseling**

The evaluation report has not reported on this aspect, but a discussion with the Head of Department revealed there some activities related to academic guidance take place during the course. During the orientation period of a batch of new entrants, the Head of Department supported by other members of the staff spend half a day explaining the programmes offered and the facilities available in the department. Again once a batch of students complete its third year, students are given a presentation by the Head of Department on the specialization courses offered so that they could select an area of specialization for the 4th year depending on their interests and capabilities. Other than these two presentations there are no formal arrangements for academic guidance and counseling. Nonetheless, informal consultations between students and staff take place throughout the duration of the 4-year agriculture course. There is no doubt that interactions between students and staff do take place. These could be strengthened by having a formal system of academic guidance and counseling and it is recommended that such a system be established as soon as possible.

***Provision for academic guidance in the subject is SATISFACTORY, but the establishment of a system of counseling is necessary.***

## **6 CONCLUSIONS & RECOMMENDATIONS**

The curriculum design is good. It builds up the subject knowledge and skills development as a student moves from the 1<sup>st</sup> to the 3<sup>rd</sup> year and makes available important areas of Animal Science for specialization during the 4<sup>th</sup> year. The course content is also good and provides adequate coverage in Animal Science for a graduate in Agriculture. However, the department is still in a transition period with regard to reforms in teaching. Subject matter is simply subdivided and taught within semesters, but not offered as course units with corresponding credit values. A review and a revision of the curriculum are recommended with the participation of potential employers of graduates in Animal Science and other important stake holders.

The use of diverse methods in communicating knowledge is a positive feature of teaching. The provision of handouts and making notes available in the library are helpful, but should be done within limits. Otherwise students may be tempted to keep off their lecture classes. The learning process is satisfactory. Inclusion of detailed information in the overhead transparencies by certain teachers should be changed. In such situations students struggle to copy down everything without any comprehension. Assessment methods are satisfactory as an interim measure, but steps should be taken to move towards awarding grade points and evaluate overall performance as GPA's.

The improvement in the confidence among students as they progress through the course became evident by the manner the students had discussions with the review team. Observations on the farm practice classes also convinced the review team that students have opportunities for skills development. Grades obtained by the students show that their progress

the employment rate of 86% confirms that the quality of

The absence of a formal mechanism for confidential student feedback is a weakness. Although students may communicate with certain staff members, what they communicate will depend upon the strength of their relationships and the confidence they have between them. Lack of such communication is often the root cause of student unrest which is frequently exploited by other interested parties. It is recommended that a formal system of student feed back be implemented.

The status of postgraduate teaching for the 3 enrolled students is satisfactory but this is primarily due to the dedication of the supervisors. The lack of formal programmes is a severe limitation for the expansion of postgraduate teaching, but this has to be rectified at the Faculty level with the cooperation of the department.

The present status of peer observation within the department is unsatisfactory, perhaps due to the shortage of senior staff members. Until this situation improves, it is recommended that formal peer observation is implemented on a faculty basis.

Opportunities for skills development in the subject of Animal science are satisfactory and can be enhanced by exposure to industrial operations involving Animal Science. Facilities for development of skills in other aspects such as computer use needs improvement.

Due to the commitment of the Head of Department and the staff, academic guidance is maintained in a satisfactory manner. This is an arduous task and should be supplemented by a formal system of counseling with the participation of other members of the Faculty, until the department secures a critical mass of staff to cater to the large number of students.

## Annexure 1

### ANIMAL SCIENCE CURRICULUM CONTENT OUTLINE

#### First Year

##### First Semester (ANS 1101 75 hrs) 1

###### General Animal Husbandry (15 hrs)

Livestock Industry: Importance; Present Situation; Different Livestock Industries; Provender Industry; Government Policy on Livestock Production.

###### Bioclimatology (10 hrs)

Introduction; Bioclimatological Principles; Mechanisms of Heat Production and Heat Loss; Thermo Regulation and Its Mechanisms; Critical Temperature and Zones; Effect of Climate on Growth, Reproduction; Animal Behavior, etc.; Acclimatization and Practical Implications.

###### Basic Anatomy & Physiology 30 hrs.

Basic Biology: Structures and Function of Epithelial, Connective and Glandular Tissues; Anatomy and Physiology of Skeletal, Muscular, Respiratory, Circulatory and Urinary systems.

Digestive System: Anatomy of the Digestive Systems and Physiology of Digestion in Farm Animals.

Reproduction: Anatomy of the Male and Female Reproductive Systems; Reproductive Physiology; Mammary Gland and Physiology of Lactation; Anatomy in Relation to Minor Surgery (Castration, Vasectomy, Dehorning); General and Reproductive Endocrinology.

###### Basic Principles of Milk and Meat Product Technology 20 hrs

Introduction: Poultry Processing and Marketing; Layout of Poultry Processing plant and Requirements; poultry Meat Quality; Microbial Contamination and Remedies; Anti-mortem and Post-mortem Inspection; Egg Production and Quality Characters of Eggs; Storage of Eggs.

##### Second Semester (ANS 1202 75 hrs)

###### Non Ruminant Management (60 hrs)

###### Poultry, Ducks and Rabbits (30 hrs)

Status of Poultry Industry; Origin and Classification of Poultry Breeds; Selection of Breeds for Egg and meat Production; Hatchery Management: Production, Selection and Handling of Hatching Eggs; Principles of Incubation; Rearing Systems & Management of Chicks, Growers, Layers; Management of Broilers; Planning & Laying out of Poultry Sheds; Record Keeping & Economics of Poultry Production; Management of Ducks and Rabbits, their Breeds and General Management Practices.

<sup>1</sup> ANS 1101 is the course notation. Three letters identifying the Department with the two digits denoting the year and semester in which it is offered respectively and the last two digits identifying the number of the course according to the chronological order in which it is offered. No of hrs. include lecture, practical, tutorial and seminar hrs.

; History; Domestication and its Effects; Zoological  
Industry in Sri Lanka & Its Importance; Reproductive  
& Physiological Parameters of Swine; Breeds; Management Systems; Breeding &  
Management: Selection of Parent Stocks, Management of Boar, Gilt, Sow and Piglets &  
Fatteners.

Housing: Basic Construction, Different Systems of Housing; Planning of a Piggery. Swine  
Products and their Quality; Marketing & Economics of Swine Production.

### **Aquaculture (15hrs)**

Introduction: Importance of Aquaculture; History & Development of Aquaculture Industry in  
Sri Lanka and Basic Fish Biology.

Production Technology: Different Aquatic Systems; Water Quality Management;  
Reproduction; Nutrition & Feeding; Hygiene & Health, Preservation and Processing of  
Fishery Products; Shrimp Culture and Ornamental Fish Production.

## **Second Year**

### **First Semester (ANS 2103 90 hrs)**

#### Principles of Animal Nutrition Part I (60 hrs)

General Introduction; Nutrients and Feed Stuffs; Classification of Nutrients; Water and Dry  
Matter, Carbohydrates, Lipids, Proteins, Vitamins, Minerals and Unidentified Growth  
Factors; Other Growth Stimulating Substances, Non-nutrients, Antinutrients and Toxins;  
General Introduction to Digestion and Metabolism, Digestive Systems of Livestock and  
poultry, Secretions and the Process of Digestion, Principles of Metabolism.

#### Agrostology (30 hrs)

Introduction, Resources and Potentials for Pasture production in Sri Lanka, Agronomic  
Description of Common Pasture, Fodder and Legumes, Pasture Establishment, Soil Fertility  
and Fertilization of Forages. Role of Legumes, Growth Physiology of the Grass Crop, Pasture  
Management, Herbage quality, Measurements of Pasture Production.

### **Second Semester (ANS 2204 90 hrs)**

#### Applied Animal Nutrition Part II 30 hrs

Feedstuffs: Classification, Individual Feed Ingredients and their Preparation, Evaluation of  
the Nutritive Value of Feedstuff, Feeding Standards, Ration Formulation and feeding of  
Livestock and Poultry.

#### Animal Genetics & Breeding (30 hrs)

Domestication & Origin of Farm Animals, Growth & Development of Farm Animals, Body  
Conformation.

Principles of Genetics: Nature of the Gene and Hereditary Material, Chromosomes, Their  
Evolution and Conservation, Cytogenetics of Farm Animals, New Technology in Animal  
Breeding, Genetic Polymorphism.

Population Genetics: Relationship, Inheritance of Economic Traits, Genetic & Phenotypic  
Variation, Population Genetics, Heritability, Repeatability and Their Estimation, Selection,  
Basis of Selection & Methods.

Cross Breeding, Heterosis, Genetic Improvement of Situation in Sri Lanka.

#### Animal Diseases and Hygiene (30 hrs)

Principles of Animal Hygiene & Health; Causative Agents of Diseases; Clinical Examination and Disease Diagnosis; Diseases of Cattle, Goat, Poultry and Other Animals; Their Symptoms, Prevention & Control.

### **Third Year**

#### **First Semester (ANS 3105 105 hrs)**

##### Ruminant Management (80 hrs)

##### Cattle (50 hrs)

Introduction to Ruminant Management: Dairy Production; Present Situation, Statistics of Milk Production, Breeds of Dairy cattle.

Principles of Ruminant Management; Farm Animals & Environment; Welfare of Livestock, Animal Hygiene; Housing for Farm Animals; Livestock Records.

Milk & Milk Production: Mechanism of Milk Secretion, Pre-requisites of good Milking, Preparation of Milking, Milking Procedures, Clean Milk Production, Factors Affecting Milk and Its Composition.

Dairy Herd Management: Dairy Cow Management, Parturition, Care of the Dam During and after Parturition, Management of Dairy Cow, Management of Heifers, Management of Stud Bulls. Calf Management; Importance of Calf Management, Different Systems of Calf Management, Calf Mortality.

##### Buffaloes (10 hrs)

Introduction and Breeds of Buffaloes; Adaptability & Environmental Tolerance; Milk Production in Buffaloes; Drought Power; Nutrition, Health & Reproductive Behavior of Buffaloes.

##### Small Ruminant (20 hrs)

Goat management: Origin and Distribution; Present Situation of Goat Production; Importance of Goat Production; Goat as a Milk Producer.

Genetics and Breeding of Goats: Selection of Bucks and Does for Breeding; Management of Breeding Animals; Milch Goats; General Management Practices; Routing Management Practices; Reproduction; Care of Pregnant Doe, Care of Milch Goats, Care of Kids up to Weaning; Feeding Plan for Kids; Different Management Systems.

Sheep Management: Potential for Sheep Production, Breeds of Sheep, Genetics & Breeding; Feeding & Routine Management Practices; Housing; Wool Production and Quality of Wool.

##### Farm Planning and Implementation (10 hrs)

Introduction; Preparation of a Farm Plan Including Wet Season Feeding Plan; Dry Season Feeding Plan, Grazing Plan; Housing & Storage Facilities; Fencing and Other Requirements; Feeding of Conserved Forages; Straw Feeding, etc.; Least Cost Rations.

##### Applied Reproduction (15 hrs)

Pregnancy; Parturition and Dystocia; Artificial Insemination; Fertility and Herd Fertility Management; Embryo Transfer and Related Techniques.

## ice Course)(ANS 3206 102 hrs)

Restraining and Methods of Casting; Breeds of Cattle & Goats; Animal Measurement (Live Weight Estimation & Different Body Parts Estimation); Identification of General Body Parts; General Clinical Examinations: Body Temperature, Pulse Rate, Ruminal Movements, Respiratory Rate, etc.; Milk and Milking: Milking Methods, Milk Recording Systems, Clean Milk Production; Determination of the Age; Vaccination of Cattle against HS and FMD; Cattle & Goat Judging; Body Condition & Score; Pregnancy Diagnosis, Artificial Insemination and Cow Planner (Cow Calendar); Methods of Animal Identification; Other Routine Practices: Drenching, Grooming, Debudding, Hoof Trimming, Castration, etc.; Instruments Involved in Livestock Management; Cheese and Yogurt Making; Housing of Cattle & Goats; Preparation of Nutrient Block Lick; Monitoring Adlibitum Intake of Water and Fibrous Forages.

### Poultry Management

Broiler Management: Cleaning and Disinfections of Pens, Brooding of Broiler Chicks up to Processing. Layer Management: Brooding up to Production. Ration Formulation, Feed Mixing and Feeding; Vaccination of Poultry against Rannikhet and Fowl Pox; Litter Management; Calibration of Common Containers for Water & Feed; Housing of Poultry.

### Pasture Management

Establishment of Grasses and Legumes, Seed Treatment, Planting, Manuring and Fertilization; Evaluation of Yield Parameters Under Different Cutting Heights, Frequencies, Fertilizer Application, etc.; Pasture Conservation: Making of Hay, Grass and Straw Silage; Evaluation of Hay and Silage by objective Criteria and with Analytical Data.

### Aquaculture

Site Selection, Pond Preparation and Aquarium Management.

## **Advanced Courses**

### **First Semester (ANS 4107)**

Being revised, to be finalized and yet to be offered for the first time.

#### Animal Nutrition

Water, Energy and Protein Metabolism of Livestock and Poultry; Pre-ruminant Nutrition; Metabolic Problems of Ruminants and Therapeutic Nutrition; Ingestive Behavior and Food Intake Regulation; Non-conventional Feedstuffs and feed Processing; Experimental Techniques in Nutrition; Animal Feeds Legislation.

#### Applied Animal Genetics

Recessive Genes and their Importance in Animal Breeding; Heritability and Repeatability; Theory of Selection in Relation to Improvement of Animals; Methods of Selection and Basis of Selection; Breeding Systems and their Application, Advantages and Disadvantages; Hybrid Vigour; Formulation of Animal Breeding Plans for Various Species of Livestock; Breeding Plans for the Future; Genetic Resistance.

### Physiology

Collection and Evaluation; Processing of Semen and

Reproduction: Seasonality of Reproduction; Parturition and Associated Problems; Evaluation of Herd Fertility; Embryo Transfer; infertility in Cattle.

Avian Physiology: Avian Endocrinology, Photoperiodism and Effect of Light on Poultry; Oviposition Cycle; Egg Formulation, Oviposition; Techniques of Reproduction.

Physiology of Lactation: Biosynthesis of Milk Components in Ruminants & Non-ruminants; Mechanism of Secretion & Transport; Nutrient Requirements & Nutrient Partitioning, Milk Secretion Rate and Mammary Gland Involution.

### Agrostology

Pasture as a Component of Ecosystem; Pasture and Soil Fertility; Vegetative Growth of Pasture; Evaluation of Pastures (Including that Conserved Pasture), Grassland: Animal Interactions and Management; Supplementary Feed resources for Ruminants; Grasslands in Farming Systems.

### Agricultural Waste Management

Potential Agro-wastes in the Region and their Availability, Background to Upgrading of Cellulosic Agro Wastes, Radiation Processing Aspects, Fermentation Processing Aspects, Study on Quality and Utilization of Upgraded Products.

Farm Waste and Environmental Aspects; Pollution; Aerobic and Anaerobic waste Treatments and Treatment Methods: Treatment Ponds and Lagoons, Oxidation Ditches, Anaerobic Digesters, Trickling Filters, Biogas Production; COD, BOD and Accepted Standard of Treated Wastes, Utilization of Waste Products.

### Meat Science and Technology

General Introduction; Definition of Meat; Importance to Sri Lanka; The Food Animals; Transport of Animals vs Transport of Meat; Structure and Composition of Muscle: Associated Connective Tissues, Muscle Fiber, Chemical and Biochemical Constitution of Muscle; Factors Affecting Composition; Slaughtering of Farm Animals; Conservation of Muscles to Meat, Carcass Evaluation: Carcass Weight and Dressing Percentage, Carcass Dimensions, Fat and Muscle Thickness, Appearance; Meat Quality/ Eating Quality of Meat: Tenderness, Colour, Flavour, Water Holding CAPACITY; storage and Preservation of Meat.

### Fish and Milk Product Technology

Introduction to Fish Product Technology; Importance, Breeds, Classification and Market Forms; Fish Composition and Nutritive Value; Selection of Fish; Fish Handling, Dressing, Cutting; Handling of Other Sea Foods; Fish Quality, its Deterioration and Remedies; Fish Preservation and Products.

Introduction to Milk Product Technology: Breeds, Importance, etc.; Constituents of Milk; Factors Influencing Composition; Properties of Milk; Dairy products; Useful Microbes & Methods of Processing, Storage and Preservation.

### Aquaculture

Introduction: Fishery Potential of Sri Lanka; Available Resources: Fresh Water, Brackish Water and Marine Resources; Fishing Gear and Methods of Fishing; Traditional and Modern Methods and their Restrictions; Fish Farming Systems, Advantages and Disadvantages; Intensive and Semi-intensive Fish Culture; Reservoir Fish Culture; Livestock/Crop/Fish

Sex Culture; Cage Culture; Tilapia in Farming Systems;  
Spawning; Egg Collection; Preservation of Gametes;  
Ovarian Biopsy; Gonado Somatic Index and Fecundity; Natural Spawning and Larval Rearing; Shrimp Culture and Bivalve Culture; Culturable Species; Environmental Effects and Present Status of Shrimp Industry in Sri Lanka; Fish and Shrimp Diseases; Aquatic Flora; Sea Weeds; Aquatic Plants; Mangroves, Coral Reefs and their Importance.

#### Animal Feed Technology

Introduction to Processing of Feeds: Mechanical Processing of Grains-Grinding, Rolling, Crimping; Pelleting Feeds: Pelleting Grains, Other Concentrates, Roughages and Complete Rations; Cubing Supplements; Cooking, Wetting, Soaking and Fermenting Feeds; Germinating Grains; Liquid Feeds and Slurries.

Importance of Live Food: Nature and Sources of Live Foods; Their Composition; Live Foods vs Processed Foods; Present Status of Live Foods Industry in Sri Lanka; Live Foods in Aquaculture; Animal Parks & Sanctuaries; Culturing Methods of Live Foods: Algae, Zoo Plankton, Brine

Shrimp, Rotifers, Copepods and Cladocerans, Blood and Micro-worms; Feeding Techniques of Live Foods and Their Restrictions; Pond Fertilization for Production of Live Foods; Organic vs Inorganic Fertilizers.

#### Micro-Livestock

Introduction; Different Species of Micro-Livestock; Economic Uses of Micro-Livestock; Management Aspects of Different Micro-Livestock.

#### Biotechnology

Gene Cloning: Necessity for Gene Cloning & Strategies; Preparation of DNA; Cloning Analysis; Selection and Expression of Cloned Genes; Potential Application of Gene Cloning; Social Legal & Ethical Aspects of Animal Bio- Technology; Gene Expression; Recombinant DNA Technology.

#### Poultry Breeding Practices

History and Present Status of Poultry Breeding Sector; Different Methods for Poultry Breeding; Poultry Breeding Units and Modern Technology; Restrictions and Government Policy on Poultry Breeding.

#### Livestock Breeding Strategies

History and Present Status of Breeding in Tropical Countries; Different Breeding Techniques and Practices in Sri Lanka; Different Acts and Government Breeding Policies on Large and Small Ruminant in Sri Lanka.

#### **Second Semester (ANS 4200)**

Research Projects are available in the above mentioned subject areas.



Dept. of Animal Science  
Faculty of Agriculture,  
University of Ruhuna.

03.12.2004

Quality Assurance Review Committee

Dear Sirs/Madam,

We have submitted the report of Self Evaluation in early 2003. Since the faculty and the Dept. took several steps towards the enhancement of the quality of our graduates. As examples, herewith I submit the annexed documents.

1. Plan of new curriculum revision
2. Faculty paper on changing the Grading System  
(Credit hours & Grade point average)

Thanking you.

A handwritten signature in blue ink, which appears to be 'E. Senarathne'.

Head/Dept. of Animal Science

## Activity 1.1. Improving curriculum

### Background

According to the university reforms, the Faculty took the initiative to introduce the semester system encompassing additional subject areas without adopting GPA system, in year 2000. However, the present curriculum found to be not focused to meet the expectations of current job market. As evident from the SWOT analysis in the initial proposal, curriculum improvement & development of the FAUR ranks fairly high among the priority changes that have been discussed to improve the undergraduate education enhancement (page 23 Initial Proposal-points 2,3,17,35 of Table 2.1.5).

### Rationale

Curriculum is considered to be the core of the degree programme. Through systematic updating and reviewing leading to student-centered learning process, university teaching/learning environment could become more professional and rewarding experience and the undergraduates will be more motivated to learn in a holistic way. This, in turn, can lead to greater learning satisfaction, better academic programmes, improvement of student learning and contributions to the advancement of knowledge in higher education. It is utmost important to introduce new and emerging subject areas to match with the needs of the 25th century.

Currently, there is a dearth of transferable skills in areas such as thinking and learning, self-management, communication, group work and information management, etc. Furthermore, there are no strong links with both Government and non-government organizations in the undergraduate degree programme.

### Objectives

Curriculum revision primarily seeks to address the following three major changes in undergraduate degree programme.

1. Identification and incorporation of new and emerging areas of national importance in agriculture sector
2. Develop a new curriculum giving more emphasis to practical and field learning with student-centred approach
3. Introduction of GPA system

Building a new professionalism is a challenge for the Faculty and it can be addressed by various sources of knowledge mobilization and innovation, social debates and appropriate knowledge gaining.

### Mechanism & Design

After developing the regulatory framework pertaining to the curriculum development at the level of departments, faculty and university, the academic committee of FAUR, with two

develop a model for curriculum development including consultation aspects. The committee will go through intensive models prior to accepting the best model. This model will be discussed at a workshop with the stakeholders (students, farmers, industry, agricultural institutions, etc.). The existing, rigid timetable will be restructured to facilitate the conduct of optional courses associated with soft-skill development (ICT, English, Teamwork skills, Professionalism, etc.) and community-based activities. The process to improve laboratory and library facilities, preparation of course materials and upgrading of classroom and computer facilities will be carried out simultaneously. The staff will be given training in modern, student-centred teaching methodologies to acquire the necessary skills with the assistance of the University Staff Development Center.

### **Resources required**

One local technical assistant with good experience in interactive learning & curriculum development will be recruited during the development of the curriculum. With the curriculum revision, suitable equipment, laboratory and library improvement will be undertaken to support the implementation of the new curriculum.

Activity 1.1 Improving curriculum					
No	Sub activity	Resources Required	Estimated Cost (SLR '000)		Cost Components
			QEF	Other	
1	Establishment of a Faculty committee on curriculum development & improvement, time table readjustment	None	-	-	PD
2	Model development for curriculum improvement	3 Workshops	105	-	PD
		1 Local technical assistant with good experience in interactive learning & curriculum development	450	-	TA
3	Introduction and implementation of curriculum changes as first cycle	Course material	300	-	TM
		Teaching equipment	1500		EQ
		Procurement of books, journals, etc.	See 3.2		TM
4	Monitoring /Internal & Peer review	Workshop		140*	TA
5	Identifying opportunities for further improvement and development	Workshop		140*	PD
6	Implementation of new changes to the existing model if necessary	Teaching equipment			EQ
7	Monitoring/Internal & Peer review			*	TA
<b>Total</b>			<b>2355</b>	<b>280</b>	

\*Quality Assurance Programme

	1	Year 2				Year 3				Year 4				Year 5			
committee on curriculum development & improvement, timetable readjustment	x																
Model development for curriculum improvement	x	x	x	x													
Introduction and implementation of curriculum changes as first cycle					x	x	x	x	x	x	x	x	x	x	x	x	x
Monitoring /Internal & Peer review							x			x				x			x
Identifying opportunities for further improvement and development								x			x				x		
Implementation of new changes to the existing mode if necessary											x				x		

### Performance Indicators

Indicator	Base	Mid	Final	Methodology
Number of optional courses offered (outside agriculture)	0	3	6	Academic record
Number of new courses developed	2	4	6	Academic record
Number of departments offering computer-based self studying modules	0	3	6	Dept. Reports
Graduates getting employment within 1 year	70%	80%	90%	Survey
Number of departments introducing computer- based student evolution	0	3	6	Dept. reports

Paper submitted to the 162<sup>nd</sup> Faculty Board for recommendation by the Academic Committee

### Credit hours and grade point average

Around 250 credits are available for the entire course in Agriculture and therefore, it is necessary to find the ways to reduce number of credits up to a standard level comparable with other Universities.

The following suggestions are made to rectify the above.

- 1 Time allotted for each subject could be reduced if it is possible to avoid repetitions of subject
- 2 Credit hour IS calculated as follows:  
 Theory            15 hours  
 Practical        30 hours  
 Field work       45 hours
- 3 Final year project IS not considered for the calculation of grade point average but will be given a grade
- 4 Third year farm practice course should be integrated to enable all the departments to participate.

The curriculum revision should come to avoid the repetition, if subject matters 111 different Departments and inclusion of Important and emerging areas to the degree program.

<b>Year</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D or fail</b>
1 <sup>st</sup> Year 1 <sup>st</sup> Semester (2003 Aug.)	4	59	59	5
1 <sup>st</sup> Year 2 <sup>nd</sup> Semester (2003 Aug.)	12	65	40	16
2 <sup>nd</sup> Year 1 <sup>st</sup> Semester (2003 Mar.)	3	62	55	1
2 <sup>nd</sup> Year 1 <sup>st</sup> Semester (2003 Aug.)	9	67	43	1
2 <sup>nd</sup> Year 1 <sup>st</sup> Semester (2004 Mar.)	3	62	49	1
2 <sup>nd</sup> Year 2 <sup>nd</sup> Semester (2004 Mar.)	6	40	60	5

## GRADUATE SPECIALIZED IN ANIMAL SCIENCE

(2000-2003)

2000

**Name**

1. WKDD Liyanage
2. SN Gamage
3. M K I Udulanayanie
4. HG Sisira Kumara

**Employment**

Graduate scheme  
Research Assistant  
Teacher. Isipathana College  
Farm Manager. Malimboda Farm

2001

1. KMT Kithsiri
2. JC Ramanayake
3. MW Jayatissa
4. HG Wasantha
5. SCD Charnara Fernando
6. K Kumaratunga
7. SHR Priyadarshani
8. TD Thanuja
9. HMBP Weerasinghe

Management Trainee. Pelwatta Sugar Co.  
Self employed, Ruhuna Agro. Co. Ltd.  
Self employed  
Technical Assistant. CRI  
Management Trainee. PRIMA  
Teaching  
Project Officer. Sarvodaya  
Management Trainee. Raigam Co.  
Farm Manager. St Anthony's Farm. Hanwellla

2002

1. AUNT Silva
2. PPDB Dias
3. SP Walawage
4. DNDK Mendis
5. KH Mahinda
6. Dilusha
7. Nandakumara

Station Master. Sri Lanka Railway  
Production Executive. PRIMA  
Project Officer Manager, BO I  
Graduate Scheme  
Manager, Private Livestock Farm  
Graduate Scheme  
Graduate Scheme

2003

1. YIDJW Seresinhe
2. Induni Attanayake
3. Induni Perera
4. U Dissanayake
5. AS Kanugala
6. PW A Sampath
7. K Wanniarachchi
8. Rashini
9. Darshani
10. Nelligaswatta
11. Rohitha
12. Keerthi Kulasinghe
13. Priyantha

Temp. Research Assistant  
Sampath Bank  
Pan Asia Bank  
Trainee Superintend, Tea Estate  
Graduate Scheme  
Graduate Scheme  
Private sector employee  
Graduate scheme  
Graduate scheme  
Graduate scheme  
Business  
Graduate scheme  
Graduate scheme

, 11 academic staff will complete their doctoral degrees and 19 their Masters/P.Phil Studies. In five years, the FAUR plans to increase PhD holders by 35% in the academic staff to strengthen the academic environment.

An important indicator would be the involvement of students to get into the Business Incubator, where, at present, only two graduate companies are involved. It is expected to increase up to 10 at the end of the five-year period. The number of newly formed independent agro-based companies by the graduates will also be another good indicator to assess the self-employment and entrepreneurial quality improvement.

*Appendix 1 – Tables*

**Table 231 Graduates’ Profile. based on graduation year and class**

Year of Completion	1 <sup>st</sup> Class	2 <sup>nd</sup> Upper	2 <sup>nd</sup> Lower	General Pass	Fail	Total
1999	0	21	13	21	3	58
2000	1	16	16	19	3	55
2001	0	42	36	79	6	163
2002	1	20	22	44	2	89
2003	2	49	25	30	17	129
Average%	0.81	29.96	22.67	39.07	6.28	98.79

**Table 232 Graduates Profile, based on graduation year and length of study**

Year of Completion	Without intensive English course and orientation course						With Intensive English course and the orientation course						Graduates
	4.0-4.2 Years		4.0-4.4 Years		>4.0-4.4 Years		4.0-4.2 Years		4.0-4.4 Years		>4.0-4.4 Years		
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	
2000	-	-	-	-	55	100	-	-	-	-	55	100	55
2001	-	-	150	100	-	-	-	-	-	-	150	100	150
2002	91	100	-	-	-	-	91	100	-	-	-	-	91
2003	119	100	-	-	-	-	-	-	119	100	-	-	119

**Table 2.3.3 Graduates Profile, based on graduation year and length of study**

Year of Completion	Length of Final Project Completion				
	6 Month		6> Month		No of Graduates
	Number	%	Number	%	
1998-1999	39	70.91	16	29.09	55
1999-2000	12	23.08	40	76.92	52
2000-2001	37	23.57	120	76.43	157
2001-2002	81	93.10	6	6.90	87
2002-2003	67	51.64	39	36.79	106
<b>Total</b>	<b>23.6</b>	<b>51.64</b>	<b>221</b>	<b>48.35</b>	<b>457</b>

**Table 2.3.4 Graduates Profile, based on graduation year and Waiting time for first job**

Year of Graduation	<12 Months		12-24 Months		>24 Months		Sample size	Percentage Representation	Unemployment	
	Number	%	Number	%	Number	%			Number	Percentage
1998	17	37.78	5	11.11	23	51.11	45	76.27	0	0.00
1999	25	78.13	6	18.75	1	3.13	32	56.14	0	0.00
2000	11	84.62	2	15.38	0	0.00	13	23.64	0	0.00
2001	32	52.46	22	36.07	1	1.64	61	40.67	6	9.84
2002	38	70.37	9	16.67	0	0.00	54	60.00	7	12.96

**Table 2.3.5 Student's profile per class based on academic status**

Class/Year of entrance	Number of registered	Number of dropout		Number of Completed	
		Number	%	Number	%
1999	60	5	8.33	55	91.66667
2000	60	8	13.33	52	86.66667
2001	165	8	4.85	157	95.15152
2002	95	10	10.53	87	91.57895

Buddhist		Hindu		Christian		Muslim		Others		Total	
Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
277	94.86	1	0.34	13	4.45	1	0.34	0	0	292	100.00

**Table 2.4.2 Student Profile by gender**

Academic Year	Student Enrolled	Female Students	%
1997 - 1998	90	47	52.22
1998-1999	123	70	56.91
1999-2000	95	49	51.58
2000-2001	146	82	56.16
2001-2002	129	71	55.04
2002-2003	108	68	62.96
<b>Average</b>	<b>115.2</b>	<b>64.5</b>	<b>55.81</b>