SUBJECT REVIEW REPORT

DEPARTMENT OF BOTANY

FACULTY OF SCIENCE
THE OPEN UNIVERSITY OF SRI LANKA

23rd to 25th June 2005

Review Team :

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1. Summary of the purposes and aims of the subject review process:

The aim of the subject review is to evaluate the quality of the student learning experience/education at the subject level. The quality of both undergraduate and taught postgraduate programs in Botany, at the Open University of Sri Lanka was evaluated. The main principles of subject review underline evaluation of the aspects of education against the aims and expected learning outcomes of the programs set by the Department, which have been stated in the self-evaluation report presented by the Dept. of Botany.
The aspects of education/provision reviewed are:

A-Curriculum design, content and review
B-Teaching, learning and assessment methods
C-Quality of students, including student progress and achievements
D-Extent and use of student feedback
E-Postgraduate studies
F-Peer observation
G-Skills development
F-Academic guidance and counseling,
which have been stated in the guidelines for subject evaluation.

The review team visited the Department of Botany, of the Open University, during the period of 23rd to 25th June, 2005, and initiated the peer review process *(Annex 1 gives the agenda of the visit).* The purpose of the visit was to search for evidences and observe those pertaining to the aims and the intended student learning outcomes and evaluate them according to the guidelines as stated above. Data were gathered by meeting with the academic and non-academic staff, undergraduate and postgraduate students, observing day schools and laboratory classes and going through relevant documents (*Annex 2 gives a list of documents observed),* inspecting facilities provided by the department and other facilities available for students etc. In between these activities, the review team constantly met together and discussed the outcomes of these meetings. Each reviewer took the lead responsibility for different aspects of provision while all contributed to the writing of the report and making judgments in the eight aspects.

2. Background of the University and the Department

The Open University of Sri Lanka has been established in 1980, and is the only State University in Sri Lanka where students are able to pursue further education through distance education techniques in keeping with the **'open learning'** and the **'distance education'** methodology. It has the same legal and academic status as any other National University in Sri Lanka.
The University consists of the central campus situated in Nawala and three Regional Centers situated in Colombo (within the central campus where the main administrative building is located), Kandy, and Matara. In addition there are several (17 nos.) study centers distributed throughout the country.
The academic departments of the University are grouped into four Faculties: Natural Sciences, Engineering Technology, Humanities & Social Sciences and Education. The Faculty of Natural Sciences consists of Academic Departments of Botany, Chemistry, Zoology, Physics, Mathematics & Computer Sciences, and Health Sciences. The Faculty

Board of Natural Sciences regulates all the academic activities in the Faculty, under the direction of the Senate.
In accordance with the other departments in the Faculty of Natural Sciences, the Department of Botany offers Foundation Courses, Certificate programs, a B. Sc. Degree program and a Postgraduate Diploma program in addition to several **stand-alone** courses. There are two Foundation Courses (PSE 1305 and PSE 2305) of ½ credit each, in the first two years offered to students who do not have the requirement (three passes at A/L) to register directly for the B. Sc. Program. Three Certificate courses, viz. Certificate Course in Environmental Studies (one year), Certificate Course in Wildlife Management (one year), and Advanced Certificate Course in Laboratory Technology (two years) are conducted jointly with the other departments in the Faculty of Natural Sciences. The assigned number of credits to the B. Sc. Program consists of 6 credits which are distributed as follows: at level 3- ½ credits, level 4- 5 credits, and level 5-1½ credits. Postgraduate Diploma in Environmental Sciences consists of 4 credits and the course duration is two years.
A list of programs and the student numbers registered for each course during the last year (2003/2004) in the Department of Botany) are given below:

Foundation Course	-	32*
Bachelor's Degree in Science/Education	-	238**
Certificate Course in Environmental Science	-	12-14*
Postgraduate Diploma in Environmental Science	-	41*
Advanced certificate in Laboratory Technology	-	23*

(*Statistics on student numbers are derived from *students' progress statistics, ** Self Evaluation Report.)

3. Aims and learning outcomes (extracted from the Self Evaluation Report)

3.1. AIMS

In keeping with the vision and the vision of the Open university of Sri Lanka, the goal of the Department of Botany is to provide opportunities to adults for a life-long education in plant sciences and related fields through open and distance learning, to reach an in-depth understanding of the **subtleties** of scientific knowledge, thereby ensuring development and empowerment of people to the fullest.

In this context the Department aims to contribute by providing:

3.1.1. Foundation courses and certificates, degree and post graduate diploma courses of study of high quality distance learning methodologies to enable both the employed and the unemployed to upgrade their knowledge and skills for carrier development.

3.1.2. Programs of study that gives the students the flexibility to progress at a pace and place of his or her choice in keeping with the time and financial resources available for studying.

3.1.3. A range of challenging learning opportunities with in the modular teaching structure, allowing students to develop their academic interests and potential through curricula consisting of the set of compulsory courses and optional courses.
3.1.4. Programs of study that includes laboratory sessions, field studies and projects involving research and analysis, which will expose the students to recent advances in knowledge and techniques.
3.1.5. Encouragement to students to acquire knowledge and develop skills and attitudes that will enable them to meet the needs of their present or prospective employers and contribute effectively in their choosing carriers within the subject area of Botany or elsewhere.
3.1.6. An academic environment conducive to cultivate attitudes and personal skills required the foster lifelong learning.
3.1.7. "Stand alone" courses in specific subject areas thereby obviating the need for students to enroll for program of study leading to a formal qualification.
3.1.8. A friendly and supporting departmental environment that promotes enthusiastic learning and successful completion of courses by the students.
3.1.9. A departmental committee structure for effective organizing of teaching, assessments and review and quality assurance.

3.2. LEARNING OUTCOMES.

On successful completion of the Botany courses in either the certificate or the degree or the post graduate program of study the student should have:

3.2.1. Gained knowledge and understanding of the different areas in Botany having been trained in the relevant technical skills and acquiring the professional attitudes appropriate to the type of program concerned.
3.2.2. Developed the ability to carry out critical, self-directed study, having been stimulated intellectually through the study of Botany to appreciate its application and relevance in a variety of contexts.
3.2.3. Developed the ability to apply the knowledge and skills gained to solve both theoretical and applied problems in Botany and associated fields.
3.2.4. Acquired the range of transferable skills that will be of value in employment or self-employment.
3.2.5 Gained analytical skill and the ability to develop simplifying framework to study the real world

On successful completion of Botany courses in the B.Sc. degree program*, the student should have:

3.2.6. Gained a basic knowledge in Botany, covering the core areas of the subject enabling an understanding of the subject as a whole.
3.2.7. Learnt the fundamentals, major concepts, principles and theories associated with Botany.

3.2.8. Familiarized themselves with the terminology, nomenclature and classification systems.
3.2.9. Gained experience in the methods of acquiring, interpreting and analyzing information related to Botany.
3.2.10. Become aware of the contribution made through Botany to develop knowledge on the diversity of life and its evolution.
3.2.11. Acquire knowledge and skills in a range of practical and experimental techniques and methodologies related Botany.
3.2.12. Obtained an insight into the knowledge and skills gained and acquired the motivation to apply these to the careers, which they aspire.
3.2.13. Become aware of some of the current developments in Botany and their applications, and the philosophical and ethical issues involved, and be able to relate these to the quality and sustainability of life.

On successful completion of the certificate program in environment studies*, the student should have:

3.2.14. Obtained the basic knowledge about the environment in general and other related issues.
3.2.15. Improved their skills to enable a holistic appraisal of environmental issues.
3.2.16. Developed skills in identifying the causes of environmental degradation.
3.2.17. Developed enthusiasm and sense of awareness on conservation of natural resources, management programs, planning projects, implementation and extension.

On successful completion of the certificate program in wildlife conservation and management, the students should have:

3.2.18. Obtained an understanding of the importance of wildlife conservation and management in Sri Lanka.
3.2.19. Gained the basic knowledge in wildlife conservation and management.
3.2.20. Acquired a conceptual basis for future studies in wildlife conservation and management.

On successful completion of the advanced certificate program in laboratory technology **, the students should have:

3.2.21. Become familiar with the basic infrastructure in science laboratories
3.2.22. Received training in the operation and the maintenance of scientific apparatus and instruments.
3.2.23. Developed skills on common laboratory techniques in science and technology.
3.2.24. Acquired knowledge on the basics of organization, management, maintenance and safety methods in laboratories.
3.2.25. Received competence in manning laboratories.

On successful completion of the postgraduate diploma in environmental science*, the students should have:

3.2.26. Obtained an academic knowledge pertaining to environmental science.
3.2.27. Acquired the training necessary to handle environmental problems.
3.2.28. Adopted a multidisciplinary approach to the subject.

- *The certificate program in environmental studies is conducted by the Department of Botany.
- ** Certain selected courses are conducted by the department in all other programs (Refer section 1.3)

Note:
The foundation courses PSF 1305- botany I and PSF 2305-Botany II offered by the department of Botany are specially conducted for unqualified or partially qualified school leavers, employed persons and other adults who wish to come back to the academic mainstream and obtain qualifications at tertiary education level.

4. Overall Judgment:

The overall judgment was arrived at after summarizing judgments of all aspects of provision. The findings of the team and discussion of strengths and weaknesses of each of the eight aspects of provision are documented below (from A – H).

4. A: Curriculum Design, Content and Review

Introduction: Curriculum is designed to cater to the Foundation course, B.Sc. Degree program, Postgraduate programs and Certificate courses. The Foundation Course, in Botany, the Botany component in the B.Sc. Degree program and the Certificate program in Environmental Studies are totally conducted by the Department, while there is partial contribution from the Botany Department in the way of Day Schools, part of the Lecture/study materials, practicals, etc. to Postgraduate Diploma in Environmental Science and Advanced Certificate in Laboratory Technology programs. The printed study material, that replaces the formal delivery of lectures in the Department, forms the basis of subject teaching. The teaching material format has not changed during the last decades in most units and therefore improvements in the presentation of the teaching materials needs urgent attention. The print is poor, the quality of paper used is unsatisfactory and the presentation is unattractive. An exception was seen in the case of Microbiology, which has been presented in keeping with modern developments in distant teaching.

Design
A monthly planner is prepared for each semester before the commencement of the semester and is distributed among the students at registration. The planner gives the schedule of practicals, Day schools and examinations.
The foundation courses are designed for those who do not possess A/L knowledge in Botany and two ½ credit units are offered which have to be covered in one year. (Levels 1 and 2). The curriculum of the offered courses indicates that it is well designed to

provide adequate knowledge to students in the fundamentals of Botany to proceed to the next levels. The design of other programs too can be rated as satisfactory.

Content

Foundation course: The content of the curriculum is satisfactory to obtain the basic subject knowledge required to proceed for the B. Sc degree program offered by the Faculty. This is evident by the performance of students who enroll for the foundation courses and subsequently successfully complete the degree program.

Degree program; It is obvious through the course contents that current developments in some areas in the subject have not been incorporated into the syllabus. These include areas such as fields of current interest in biotechnology, molecular biology, and environmental sciences. Basic knowledge given in microscopy and bio-statistics is inadequate. The rest of the course contents are satisfactory to fulfill the teaching aims.

Certificate courses: Botany Department offers one course unit, viz. Laboratory Organization, Management and Safety in the Advanced Certificate course in Laboratory Technology. Other units are offered from other Departments. Aspects such as maintenance of microscopes and optical equipment, preparation of permanent microscopic specimens, collection, preservation and longtime storage of plant specimens are inadequately dealt with... The Botany Department therefore should play a more active role to include specific areas relevant to a Botany Laboratory into the syllabus.

Post-graduate courses; The Dept. of Botany offers Environmental Pollution unit in the Postgraduate Diploma course in Environmental Studies. The course content is too fundamental and deals inadequately with the Sri Lankan scenario with reference to local environmental problems. This component needs to be incorporated into the curriculum immediately. The contribution from the Botany Department to this programme needs to be expanded, as impacts on vegetation, deforestation and effects on functional aspects of plants etc. have not been included. The course materials have also not been updated regularly. Only about 20% of the enrolled students seem to graduate at the end, the reasons for which need to be looked into.

Reviewers met 2 postgraduate students, viz. a M.Phil. and a Ph.D. (by research) student. Their main grievances were lack of computer/internet facilities in the Department and lack of a permanent working space allocated for post-graduate students.

Review;

The Faculty has a Course Development Committee, which has a representative from each Department. This committee is supposed to meet regularly and report back to the Faculty on the progress achieved in curriculum development. It is an agenda item of the Faculty Board meetings. Independently of this, the progress in curriculum revisions is to be monitored at departmental levels regularly. Minutes of departmental meetings of the Botany department indicate that curriculum contents have been extensively discussed at every departmental meeting and appropriate steps have been proposed to incur revisions and expedite them. The implementation process of the proposed revisions however seemed slow. The last major curriculum revision according to available information has been in 1998.

Furthermore, there had been either no revisions or only minimal revisions in the curriculum of the Foundation Course since its inception (We were indicated that there

had been some revisions in 1992 though no evidences were made available to us). However according to the Head of the Department, revisions to match with the current A/L Biology syllabus are expected to be incorporated in the near future as the revision process has already been set in motion.

Judgment: Taking all aspects, strengths and weaknesses in the curriculum design, content and review are judged to be SATISFACTORY. Recommendations are listed at the end of the report also taking into account the grievances of the students regarding the curriculum.

4. B. Teaching, Learning and Assessment Methods

Teaching:
Teaching at the Dept. is through a combination of methods such as through provision of printed material on the subject areas, audio-visual aids, and face to face discussions at day schools, tutor clinics, practical classes and field visits.
The central library has a separate audio-visual division where videos relevant to different subjects are available. Students have the facility to view the videos whenever they are free. Videos are also shown to students during practical classes. The Central library stores around 570 books in Botany in the lending section and 160 in the reference section. The scheduled open hours of the library are adequate for students to enable efficient library usage. However, since a large percentage of the students enrolled are employed, longer lending hours would be beneficial. The usage of the library appeared to be generally low during the review period.

Learning:
Guidance on the overall learning procedure was reported inadequate according to the students whom the reviewers interviewed. Much of the guidance came to the students through the hand book and other brochures sent by post before registration or during the registration periods. Announcements are also made in Faculty and Departmental Notice Boards. The time allocated for the orientation program during the registration period is insufficient. Most students interviewed by the reviewers appreciated the availability of teaching aids in the form of printed materials though they had grievances on the quality of some of them. Certain printed materials (e.g. Plant Systematics, Genetics, Evolution and Introductory Molecular Biology) could not be clearly understood by the students due to lack of clarity in the presentation of the subject matter. Errors are frequent and they recur every year. Guidance given to students on the use of teaching materials was insufficient. Revisions (especially with reference to Plant Physiology and Plant Diversity) and inclusion of study questions in the form of tutorials are suggested. Course materials are sometimes not distributed in time. This leads to postponement of the courses/examinations and therefore the careful planning done at the beginning of the courses is disturbed frequently. New courses are not being developed in accordance with current trends and national needs. Examples are Biotechnology including Tissue Culture and Gene technology. Introduction of demonstrations of new techniques in Biotechnology will be highly appreciated by the students.

The day schools have sometimes been held in the mornings when the examinations of the same courses were held in the same afternoon. This causes inconvenience to learning and students were very unhappy over this arrangement. The students are of the opinion that their learning could be much facilitated if a summary of the course is given during the day school held at the commencement of the practical. The conduction of day school observed by the reviewers indicated lack of adequate seating capacity, poor audibility, insufficient use of audio-visuals, lack of preparedness among students, inadequate opportunities for students to discuss problems with the lecturer etc.

Assessment methods

The Department adopts the Continuous Assessment Tests (CATs) for each course The CATs used to assess the subject based knowledge are the Open Book Tests (OBTs) and the No Book Tests (NBTs) consisting of Multiple Choice Questions (MCQs) and Short Answer questions. The methodology adopted here is to mail answer scripts back to candidates with comments of examiners. There is however no feed back system from the students on the teachers' comments. This is a deficiency observed by the reviewers. The students who become eligible to sit the final examination are those who obtain a minimum required mark at the CATs. Practical assessment tests are also held for all practical components at the end of the practical class. The final evaluation of all courses however is through a combination of a written examination, and the practical examination component. The assessment method of the final examination is through a question paper consisting of questions in the form of essays, structured essays, short notes and MCQs. For the research project and the literature survey assignment, the assessment is through the written report and the presentation. Senior academics in the Department are responsible for their evaluation.

Judgment: Having evaluated the teaching, learning and assessment methods, the reviewers are of the opinion that this component could be rated as SATISFACTORY.

4. C: Quality of Students including Student Progress and Achievements

The quality of students entering the OU is one of the most variable factors within the OU system. As the student numbers seeking admission to the OU are not restricted, we found the OU students to be a very heterogeneous group. Due to the fact that the Colombo Regional Centre is located within the capital city at an easily accessible place, there were many students who are employed and yet utilizing the facility to upgrade their qualifications. As a result, most students were found to be very ambitious and of good quality with good English speaking ability. There were many students who came from outstations due to the non-availability of sufficient regional centers and lack of possibilities to carry out their practicals at those regional centers. The provision of hostel facilities at the Colombo Centre during their practical programs helped them immensely. This was an important facility provided by the OU.

The offered Botany program was only moderately popular among the students opting for a Degree as only around 30-40% of all registrants selected Botany for their program. Though very large numbers become eligible for the degree program (~80% of students who register for courses in Botany) only a ~65% sit the examination due to unknown

reasons. Of those who sit only ~68% pass the examination. Only small numbers finally qualify (130-140 per year or ~35%, of the registrants who register for courses in Botany). These statistics given are for the batch of 2003/2004. Those students who perform well at examinations have the possibility to win the very limited number of special awards available within the Faculty (a prize and a gold medal).

According to the statistics of 2003/2004 batch, nearly 50% of the registrants for the two foundation courses in Botany became eligible to sit for the Final examination. Of this only ~85% sat for the examination and 70% of them were successful. This amounted to an over all 35% of the registrants for the Botany foundation courses.

Accordingly, 80% of the registrants for the Postgraduate Diploma in Environmental Science (or NEP 1203) become eligible to sit for the examination. However of this only 80% sit for the examination and of that only 60% (only 40% of the registrants) pass the examination.

Moreover, 80% of the registrants for the Certificate course in Environmental Science become eligible to sit for the examination. However of this only 65% sit for the examination and of that 95% (only 50% of the registrants) pass the examination.

However, all the registrants for the course offered by the Dept. of Botany in Advanced Certificate in Laboratory Technology (PSC 2323) become eligible and 100% pass the final examination.

This shows that on average except for the Adv. Certificate course in Laboratory Technology, only a 35-50% complete the course. It shows a high rate of drop outs compared to a conventional university.

In arriving at these estimates however, the reviewers observed inherent difficulties within the system since student eligibility can be carried over many years and postponements of academic semesters as well as examinations were common phenomena.

The Faculty/ Department maintain a file for each student offering Botany from the time of her/his registration though the progress of each student has not been properly monitored thereafter. Difficulties in obtaining information from such a diverse group of students is however understandable. The reviewers had no way of establishing the statement that OUSL graduates are in high demand with reference to employment in the private sector.

Judgment: Having considered carefully the quality of students including students' progress and achievements, the reviewers are of the opinion that this aspect of the subject review can be rated as SATISFACTORY.

4. D: Extent and use of Student Feedback

Being a Department that practices distant teaching/learning, the feed back procedures from the students on the academic programs are extensive than at traditional Universities. Furthermore it appeared to us during our visit, that the Department makes a genuine effort to take all student feed backs into due consideration to incur suitable improvements accordingly. The academic counseling begins at the initial registration of new entrants. Thereafter there is regular feedback at the beginning of each academic year. The day schools, practical classes and other academic sessions such as tutor clinics provide a forum for discussion of student responses to the academic courses. This appeared to

occur regularly. A Day School is held for each course book. The course coordinator corresponds with students in advance requesting comments. Students are therefore given the opportunity to write to their teachers on their problems and difficulties in advance. These specific problems are then discussed at the Day School. The reviewers had the opportunity to watch two such Day Schools. Knowing the importance of the Day School (just one to two hours of contact time for a single course book), the Day School need to be definitely better organized so that the time is utilized properly. According to the academic staff, only a very few students correspond in advance and therefore the Day School facility is not properly utilized now.

When new course materials are prepared, the Dept. follows the system of "Developmental Testing" whereby the course team obtains the views of students on the course contents through a very critical questionnaire. The responses of students are taken into consideration when the final version of the course material is printed. The student sample is selected randomly and the size of sample is about 30-40students. The reviewers examined samples of such "Developmental Testing". The quantitative feed back on the success of the teaching methodologies came through the OBTs, NBTs, PTs and Final Examinations. PTs conducted at the conclusion of practical courses provide the best feedback on their understanding capabilities. The public display of results of OBTs and NBTs is practiced. The extent and use of student Feedback is satisfactory. However some students had grievances such as difficulties encountered in meeting the teacher responsible for a course unit, and lack of adequate response to students' questions and comments at the Day Schools. The student representatives (2 nos.) at the Faculty Board also give some feedback to the Faculty on student problems including academic matters.

Judgment: Having considered carefully the extent and use of feedback systems within the Botany program, the reviewers are of the opinion that this component can be rated as SATISFACTORY though there is ample room for many improvements.

4. E: Postgraduate Studies

Facilities for Postgraduate degrees by research are minimal. The reviewers were able to meet two Post graduate students (by research) - one M.Phil. student and one Ph.D. Student. Both depended on outside resources more than on resources of the Department for guidance, supervision and research facilities. Having observed the facilities available in the Department, the reviewers are of the view that research is possible only in fields where there is less dependency on instruments (e.g. Taxonomy). The reviewers were able to meet only one student from other postgraduate programs by course work (Postgraduate Diploma in Environmental Sciences). This student had been able to complete his course within the scheduled time period. He however expressed his dissatisfaction over the low Botany components within his course.

The postgraduate students stressed the need for regularly updated course materials, a separate room for postgraduate students, better equipped laboratory facilities, and computers with internet facilities for them.

Judgment: The reviewers having observed the status of the postgraduate studies in the Department are of the view that this component is UNSATISFACTORY.

4. F: Peer Observations

There is no formal procedure for peer observations either in the Department or in the Faculty. However according to the Head of the Dept. of Botany, open discussions on all academic matters occur at the monthly departmental meetings and corrective measures are taken accordingly if shortcomings have been brought to the notice of the Department. Furthermore, the junior staff of the Department conducts all practical classes under the purview of a senior academic.

Judgment: The reviewers found minimal peer observations in the Botany program and therefore rates this section of the review process as UNSATISFACTORY.

4. G: Student Skills Development

The most prominent skill development in all programs is the development of subject related knowledge, which is tested through the OBT's, NBTs and PTs. and end of semester-, year- and final examinations. The students get the opportunity to develop their practical skills and student/staff relationships during the face-to-face interactions, practical courses and field visits. Field visits however are rare. Day schools are also useful for students to develop the skill of public discussions. Only about 1-4% students get the opportunity to develop presentation skills and research skills since this opportunity is given to a very low number of students based on their overall performances. The reviewers observed that since a majority of students are employed, most students do not wish to utilize this opportunity due to time constraints etc. They prefer to take the shortest and the easiest pathway to conclude their studies and fulfill their ambitions.

The Staff of the Department of Botany comprises of 16 permanent academic staff members. There is one Senior Professor, nine Senior Lecturers, and six Lecturers (probationary). In addition, tw-o permanent Educational Assistants and eight Temporary Demonstrators are involved in teaching. Moreover, ten Visiting Lecturers from outside the Department contribute to the teaching of interdisciplinary courses. Two Technical Officers contribute to the running and maintenance of the laboratories. .
All members of senior staff have acquired postgraduate qualifications, the majority of them acquiring foreign university qualifications.

Judgment: The reviewers are of the view that this section can be rated as SATISFACTORY.

4. H: Academic Guidance and Counseling

A fairly effective guidance and counseling system is available within the Faculty and the Department. There is a general counseling mechanism for both academic and personal matters organized by the Faculty. During the pre-orientation and registration period,

students are allocated to academic staff members for academic /personal counseling throughout their career at the University (each staff member is assigned around 30 students). Each counselor keeps vital personal data of each student for reference when necessary. A personal tutor/counselor spends around 2 hours during the pre-registration period with his/her students during which most problems are dealt with. The Dean of the Faculty has provided guide lines for this counseling activity through a printed document (Annexed 3 is attached) There is apparently a very good orientation program for new entrants lasting around 3-4 hours. A video film on the University is shown and a copy of the prospectus is given at this instant.

The Head of the dept. of Botany informs the students of all facilities and opportunities available for those students who offer Botany through guide materials. There is also a senior and a junior coordinator for each course whom the students could contact for all questions relating to that study unit. The Day schools, revision discussion classes and tutor clinics give the opportunity for students to have some face to face interactions with the academic staff to enable some additional guidance and counseling.

Since answer scripts of OBTs and NBTs and home assignments are sent back to students with comments by the respective tutor, students get a valuable academic guidance on their performances additionally. They are required to respond to these comments. This process however ends here and there is no rechecking by the tutors. Unfortunately, the OU web site does not support students sufficiently with academic guidance.

There is no professional counseling unit at the OU and University Medical Officer looks after health issues of students.

In spite of this counseling system, students whom the reviewers interviewed (about 40 students were interviewed) were of the view that examination postponements due to poor selection of courses and incompletion of programs are partly due to insufficient or inefficient counseling.

Judgment: Having considered all aspects of academic guidance and counseling available in the Faculty/Department of Botany, the reviewers are of the view that this section could be rated as SATISFACTORY.

Overall Judgment - *Suspended*

5: CONCLUSION:

The summary of the 8 aspect judgments are as follows:

A. Curriculum design, content and review:	satisfactory
B. Teaching, learning and assessment methods:	satisfactory
C. Quality of students, including student progress and achievements:	satisfactory
D. Extent and use of student feedback:	satisfactory
E. Postgraduate studies:	unsatisfactory
F. Peer observation:	unsatisfactory
G. Student skills development:	satisfactory
H. Academic guidance and counseling:	satisfactory

Strengths (Good Practices) observed in the system and study program.

1. The distant teaching method in Botany has a good basic structure.
2. A year planner for the Department was available.
3. The Department of Botany has a very dedicated staff.
4. The students are motivated and ambitious.
5. The Standard of English of students is generally higher than observed at most other conventional Universities.
6. Politically motivated student agitations, boycott of programs etc. are far less than at other Universities as a result of which the scheduled programs are concluded on time.
7. In spite of some weaknesses, all curricula are in line with set goals and objectives. The curricula of most of the offered courses indicate that they are well designed to provide adequate knowledge to students according to the levels and programs.
8. Curriculum revisions have been discussed regularly at departmental meetings and appropriate steps have been proposed to incur revisions and expedite them.
9. The provision of printed teaching materials to students is practiced in the Department.
10. Generally, the practical session are well organized with the provision of descriptive practical schedules and assistance of the demonstrators.
11. Most Senior Lecturers are available for students for both academic and personal counseling and guidance.
12. The conduction of Day Schools etc. Facilitate face to face contacts and provide a very essential forum for open discussions.
13. The Central Library is well equipped with books and modern facilities.
14. The Stand Alone courses provide valuable opportunities for employed persons to acquire knowledge in specific fields they aspire.
15. Provision of an alternate pathway to any student to enter a Degree Program with Botany through a Foundation Course is highly appreciated.
16. Hostel facilities for students from regional centers (excluding Colombo) during practical sessions are an ideal arrangement.

Weaknesses observed in the system and in the study program:

1. Most of the infrastructure facilities are below accepted norms. Laboratories and staff rooms are ill-ventilated and lack many basic facilities. The available examination halls are insufficient as well as ill-suited to conduct examinations.
2. The laboratory equipment are insufficient and badly maintained. Most are either outdated or out of commission.
3. Lack of study rooms and student common rooms lead to student disharmony.
4. The quality of some of the teaching material provided is low. The format has not changed during the last decades in most units .The print is poor, the quality of paper used is unsatisfactory and the presentation is unattractive. According to students they contain errors that recur over and over again. Certain printed materials (e.g. Plant Systematics, Genetics, Evolution and Introductory Molecular Biology) could

not be clearly understood by the students due to lack of clarity in the presentation of the subject matter.

5. The course contents are not regularly updated. Current developments in some subject areas have not been incorporated into the syllabi.
6. General training given to laboratory staff is poor. This is one major reason for the observed poor status of laboratory maintenance. Lack of time for laboratory cleaning during sessions, limitations in space was highlighted by the laboratory staff.
7. Status of research in the Department is poor. Overall research facilities for staff/student are inadequate. Sufficient garden space for experimental plant plots is unavailable**.**
8. The implementation process of the proposed revisions to curriculum is slow the last major curriculum revision according to available information has been in 1998. There had been either no revisions or only minimal revisions in the curriculum of the Foundation Course since its inception.
9. Guidance on the overall learning procedure is inadequate. Much of the guidance came to the students only through the hand book and other brochures sent by post before registration or during the registration periods. Guidance given to students on selection of correct courses and course combinations and the proper use of teaching materials were insufficient.
10. Course materials are sometimes not distributed in time. This leads to postponement of the courses/examinations and therefore the careful planning done at the beginning of the courses is disturbed.
11. New courses are not being developed in accordance with current trends and national needs. Examples are Biotechnology including Tissue Culture.
12. The contact times at Day Schools (just one to two hours of contact time for a single course book), are insufficient .Only a very few students correspond in advance and therefore even the brief contact hours at the Day School facility are not properly utilized.. Some students had grievances such as difficulties encountered in meeting the teacher responsible for a course unit, and lack of adequate response to students' questions and comments.
13. The student requirements are sometimes not considered in scheduling Day Schools e.g. most of the day schools are held just on the same day of the examinations.
14. The conduction of day schools observed by the reviewers indicated lack of adequate seating capacity, poor audibility and insufficient use of audio-visuals.
15. Non-availability of laboratory facilities at regional centers causes hardships to students.
16. An average of around 35% (except for the Adv. Certificate course in Laboratory Technology) completes the courses. It shows a high rate of drop outs compared to a conventional university. Students claim that examination postponements due to poor selection of courses and incompletion of programs are partly due to insufficient or inefficient counseling.
17. Facilities for Postgraduate degrees by research are minimal. Both depended on outside resources more than on resources of the Department for guidance, supervision and research facilities. Postgraduate students have been provided with minimal computer/internet facilities and living/working space.

18. There is no formal procedure for peer observations either in the Department or in the Faculty.
19. Only about 1-4% students get the opportunity to develop presentation skills and research skills since this opportunity is given to a very low number of students based on their overall performances.
20. The OU web site does not support students sufficiently with academic guidance.
21. There is no professional counseling unit at the OU.
22. The fact, that nearly 50% of OU students are employed and work according to set targets and a schedule , has not been given due consideration in scheduling library lending hours and availability of staff for counseling .
23. Student personal counselors are often from other departments and are unable to advice on academic matters pertaining to another Department.

RECOMMENDATIONS

OU is a fee-levying institute. It's students have set targets and restricted time schedules. Hence, this Institution should be free from general trade union activities of staff which could affect academic programs of OU and of the Department of Botany. (The present subject review was conducted during the period of a trade union action launched by the non-academics of the Universities) We recommend therefore a different category of work norms to OU in addition to the following:

1. The reviewers are of the view that in spite of major system differences between OU and other National Universities, the quality of offered courses should be in par with other recognized Universities. In keeping with this ,we recommend the following in the curriculum content, design and review:
    1.1. Inclusion of Bio-statistics, practical aspects of Microscopy, Flora of Sri Lanka, current trends in Biology such as Bio-technology in the B.Sc. program. The Botany component in certificate and postgraduate diploma courses need to be increased as given under 4.A.
    1.2. Inclusion of appropriate study questions, improvement of printing quality, clarity in the presentation of study materials in par with modern developments at other OU's.
    1.3. The curriculum review processes should be regularized and expedited.

2. Since OU is a fee-levying University, the students have a right to enjoy better teaching and learning environment.
    2.1. The improvements could be incurred through adequate use of visual aids, better lecture hall and laboratory facilities, student study and rest rooms etc.
    2.2. The Day School structure needs to be revised through the inclusion of more contact hours, at the end of the school, and appropriate scheduling.

3. The large numbers in the student drop outs are anticipated in an OU system. However we recommend that reasons for this, need to be investigated and solutions devised. We recommend the expansion of the student/teacher feed back mechanisms since face to face student/teacher interactions are considerably low in the OU system.

4. Research becomes one of the most important activities in any university. Lack of research facilities at the Department is a serious deficiency. We recommend that fields in which research is presently possible be identified and developed until research facilities can be further expanded.

5. Though peer observations do not regularly occur in any University, we recommend that this practice should be introduced as early as possible to the Department.

6. The students rarely get opportunities to develop skills in research, presentations, and other communication methods. We recommend that components to improve these skills be incorporated into the curriculum.

7. Lack of a central student counseling unit for academic/personal counseling at OU is a serious short coming. The presently available system is weak. The importance of counseling at an OU need to be more recognized as students need guidance for proper academic planning at distant education systems more than at other conventional universities.. Deficiencies in the overall student academic guidance methodologies therefore need to be identified and appropriate solutions devised. We presume that through proper academic guidance, the present drop out rates could be reduced.

8. Though the majority of students appear to have a good level of English knowledge, we strongly recommend that English knowledge enhancement programs be strengthened.

9. Since a majority of students are employed, scheduling of activities should be considered in this context. This was specially noted with reference to Central Library Lending hours, teacher/student access hours, which were inconvenient to many students.

Annexe-1

AGENDA OF THE SUBJECT REVIEW

DAY – 1

9.00 – 9.30 a.m.	Welcome meeting with the Dean and Head of Department
9.30 – 10.00 a.m.	Discuss the agenda of the Review
10.00 – 10.30 a.m.	Tea Break
10.30 – 11.30 a.m.	Departmental presentation of the Self Evaluation report
11.30 – 12.30 p.m.	Discussion
12.30 – 1.30 p.m.	Lunch Break
1.30 – 2.00 p.m.	Academic guidance and Counseling core aspect meeting
2.00 – 2.30 p.m.	Observing departmental Facilities
2.30 – 3.30 p.m.	Observing other facilities
3.30 – 4.15 p.m.	Observe Practical Class 1
4.15 – 4.45 p.m.	Observe Practical Class 2
5.00 – 6.30 p.m.	Meeting with students

DAY – 2

8.15 – 8.45 a.m.	Brief meeting of Reviewers
8.45 – 11.00 a.m.	Observe Document (Working Tea)
11.00 – 12.00 p.m.	Reviewer's Discussion and Report Writing
12.00 – 12.30 p.m.	Meeting with Post graduate students
12.30 – 1.30 p.m.	Lunch Break
1.30 – 2.00 p.m.	Observe Practical test
2.00 – 2.30 p.m.	Meeting with Technical Staff and other non academic Staff
2.30 - 4.00 p.m.	Meeting of Reviewers

DAY – 3

8.15 - 9.00 a.m.	Report Writing
9.00 – 10.00 a.m.	Observe Teaching Class 1
10.00 – 10.30 a.m.	Reviewers private discussion (Working Tea)
10.30 – 12.00 p.m.	Report Writing
12.00 – 1.00 p.m.	Lunch Break
1.00 – 3.00 p.m.	Report Writing
3.00 – 3.30 p.m.	Observe Teaching Class – 2
3.30 - 5.00 p.m.	Report Writing

Annexe-2

List of documents

1. Course material (Foundation, Degree, Post-graduate Diploma, Environmental Science, Advanced certificate in Laboratory Technology, Certificate Course in Wildlife Conservation and Management)
2. Practical Guidance for all courses
3. OBT/NBT and final examination question papers and marking schemes
4. Marked home assignments with comments for certain courses
5. Project reports of postgraduate diplomas in Environmental Science, Certificate Course in Environmental Science
   Undergraduate Projects
6. Marking scheme for (1) the research project report in Botany and (2) Literature review in Botany
7. Practical records of students
8. Herbaria
9. Departmental guide
10. Time Table (Activity schedule)
11. Individual letters sent by senior coordinator of each course to the students
12. Faculty Meeting Minutes
13. Department Meeting Minutes
14. Faculty Prospectus
15. Personal Data Form
16. Guideline for Academic Counseling
17. OBT/NBT attendance sheets
18. Practical Attendance sheets
19. Attendance for field trips
20. Statistical information on student's progress
21. Work Schedule for staff
22. Study/ tutorial questions
23. Day School attendance sheets
24. Progress reports for postgraduate students