

SUBJECT REVIEW REPORT

DEPARTMENT OF BOTANY



***FACULTY OF SCIENCE
EASTERN UNIVERSITY OF SRI LANKA***

17th to 19th December 2008

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1. SUBJECT REVIEW PROCESS

The undergraduate education in public Universities in Sri Lanka depends heavily of consolidated funds of the Government of Sri Lanka, which is generated and maintained by monies collected from the tax payer. Therefore the public has the right to know how the Universities endeavor in maintaining good practices to maintain the quality of its expected outputs. The Quality Assurance and Accreditation Council (QAAC) was established in order to monitor the activities of Universities as a whole (Institutional Review) and those of individual academic Departments (Subject Review) and to report. The report produced by a team of reviewers becomes a public document which is available on the World Wide Web for perusal by interested parties. The report presents the current status based on the findings of the review team on the following eight aspects and recommends corrective measures where necessary.

1. Curriculum Design, Content and Review
2. Teaching, Learning and Assessment Methods
3. Quality of Students, including Student Progress and Achievements
4. Extent and Use of Student Feedback
5. Postgraduate Studies
6. Peer Observation
7. Skills Development
8. Academic Guidance and Counseling

At Present, the mechanism of the subject review starts with the submission of a Self Evaluation Report (SER) in a prescribe format to the QAAC by the respective Department that wishes to be evaluated. The QAAC will appoint a team of reviewers usually consisting of three. The reviewers will scrutinize the SER and will jointly visit to the University in general and the Department in particular to obtain relevant information through discussions with staffs that contribute to the academic program at various levels and students, observing the facilities and relevant documents. The findings will be reported to the QAAC and the QAAC will take further steps for its publication.

Keeping in line with this process the Department of Botany of Eastern University of Sri Lanka (EUSL) prepared a SER in the (latter part of) 2006 and forwarded to the QAAC. Professor S. Mohandas (retired from Dept. of Chemistry, University of Jaffna and former Vice Chancellor of the same University), Dr. Sanath Hettiarachi (Senior Lecturer, Department of Botany, University of Ruhuna and Dr. M.I.S. Safeena (Senior Lecturer, Department of Biology, South Eastern University) were appointed to the Review Team by the QAAC and the visit to the EUSL took place from 17th to 19th December, 2007.

A brief meeting of the reviewers took place at 9:00 am of the first day of the visit (17/12/2007) to discuss the process to be followed and to divide responsibilities among the members. Dr. Sanath Hettiarachi was chosen as the Chairperson of the team by mutual agreement. A formal meeting was held with the Vice Chancellor in the presence of the HoD of Botany at 9:25 am. The Vice Chancellor provided useful information on the history of the University, the student population and the process of curriculum revision. He expressed his fullest cooperation to QA activities. The next meeting was with the Dean of the Faculty of Science, where relevant issues to the process were discussed. The review team was then taken through a presentation by the HoD of Botany from 10:00 am to 12:30 noon in the presence of academic staff of the Department. The presentation was based on the information given in the SER and the review team requested the staff to make certain clarifications during the presentation. It was revealed that certain facts presented in the SER are now out dated and

therefore the staff was requested to produce an update of the SER. There were certain adjustments to the typical timetable for review visit and the timetable was finalized to accommodate such changes. For example the students were on holiday and they were to return to the University on the following day and the time for the meeting with students was adjusted accordingly.

The afternoon was devoted to visits to observe facilities in the Department and other support services. Laboratories of Anatomy, Microbiology and Biochemistry and the Departmental herbarium were visited. There were no activities as no students were available. However the staff responsible for each laboratory and the herbarium explained the activities in each place, the facilities and difficulties they face. The buildings that house many laboratories were in a dilapidated condition. The roof needs to be repaired immediately. It was noted that the situation of buildings of other Departments were even worse. The Department of Botany has managed to do the repairs in many parts of its buildings.

The team was warmly welcome by the Head/ ELTU and explained how ELTU assists in running the academic program. As all the courses are conducted in English medium, ELTU has become an important service unit. It had conducted an intensive English course of 150-hours duration in during the orientation period and 2 hrs/ week English classes during the 1st and 2nd year. Self-access Centre and English Club are two attractive features of the ELTU. ELTU provides 13 computers, a TV and a cassette player for the use of students.

By 3:00 pm, a visit was made to the new block, where the agroforestry area, worksite of the new buildings and the medical centre were observed. The premises reserved for the Department of chemistry had been completed, but no construction was observed as identified for Department of Botany. The agroforestry area is a useful peace of land for a Department of Botany. However more attention is required for its maintenance as a study site. The facilities and the services of the Medical centre seem sufficient as seen by the infrastructure and records. On return, a visit was made to the library. It was saddening to witness that some of the books were packed into boxes due to lack of space and the situation was worsened due to leaky roof. Some of the existing areas cannot be utilized because of rain water pouring down. It was raining heavily and the team had the opportunity to view the actual condition. Last visit for the first day was to Centre for Information and Communication Technology (CICT). CICT provides training on IT for all faculties except for the Faculty of Sciences as they have subject of Computer Science in their degree programs. Another function of the Centre is to conduct workshops on IT and other computer applications for academic staff and out side organizations. The students benefit from the CICT in preparation of their dissertation. There is no fee charged for making printouts. CICT extends its services by providing and maintaining broad band internet facility for students of all faculties

At 9:00 am of the 18th, a student presentation was scheduled. At present there are no Special Degree students. The single student who was in the recently passed out batch is now in the staff in a temporary position. She was asked to make presentation and the team observed her presentation instead. The presentation was done with the aid of a PowerPoint presentation. She displayed very good presentation skills that can be expected of a fresh graduate. At the end of the presentation the presenter and three Zoology Special Degree students participated in a discussion with the review team. They appreciated the efforts of the staff in imparting knowledge and guidance in developing their skills.

There was another meeting at 10:30 a.m. with the staff of different services which included Head/ ELTU, Chairman/ QA Board, Director/ LTS, IRQUE, representative of Director/

CICT, Director/ Career Guidance Unit, academic counselors and student counselors. It was learned in this meeting that there is a half day orientation program for new comers where VC, Dean, Senior Student Counselor, Student Counselors, wardens and subwardens, academic and administrative staff etc. were introduced. Students are then sent to the Faculty where Dean makes a presentation and student groups allocated to senior lecturers for mentoring. Students are given one week for selection of course units. Student Counselors have a separate counseling room where the students can meet counselors on a roster. Computer courses and career guidance are built into credited course units.

The review team had the opportunity to meet 13 undergraduate students at 12:00 noon. The students were enthusiastic about the QA visit. The team was happy to note that many students expressed themselves very clearly in English language. Twelve out of 13 students were from the Eastern Province. They were happy about being able to arrange English classes on their request. However they would prefer an intensive English course prior to the beginning of the regular academic program. During this period they expect also to have courses in computer and communication skills. They maintain a good rapport with the coordinator that they are assigned to. They are generally satisfied with support given by the computer unit. They expressed their displeasure regarding the delay in release of results and insufficient number of copies of reading material recommended by the staff. A photocopy costs Rs. 3.00, but most of the time the copier is out of order. Many microscopes are in poor condition or do not work at all. Laminar floor is not functional. Lecture outline is available in the intranet. They would like to have the practical handouts at the beginning of the Semester. A three year General Degree takes over four years to complete. They haven't had any field visit for the last five Semesters. They recognized the importance of assignments, presentations and research projects as these activities help their skills development. At present most of the graduates in biological stream find jobs in the NGO sector.

At 2:00 pm, a meeting was held with Chairman, Internal Quality Assurance Unit. The Secretary had been on sabbatical leave. The grievance of the Chairman was that he does not have the secretarial facilities or at least some office space and equipment. Training workshops to train reviewers had been organized by this unit.

The last meeting of the day was held at 3:30 pm with the nonacademic staff of the Department. They seem to work in good team spirit while maintaining a good rapport with academics as well as with students under the leadership of well accepted character of the Senior Technical Officer. Among their grievances were lack of staff room, having insufficient staff to handle the workload, not having opportunities for training in maintenance and repair equipment. They expressed the need of starting a plant nursery to provide plants to the public at a reasonable price and naming the trees in the premises in all three languages along with scientific names. If the desire to do such things is really there, what prevents them from realizing it is not clear.

The Department uses lecture theatres common to the Faculty. The Department is responsible for the supply of OHPs and multimedia projectors. Therefore the lab staff has to carry these equipment to and from the lecture theatres for every lecture. The nonacademic staff proposed that the Dean's office should provide the facility.

The reviewers went through some documents presented during the available times between various meetings. Several other documents were made available on the request of the reviewers. This was practiced on the following day too.

At 11:00 of the 19th, a meeting with Senior Student Counselor was held. As a security of top priority in the area, the SSC liaise with the security division and helps in security matters which are discussed in monthly meetings. Counseling is done through Bishop's house. He accepts that reorganization of the counseling service is necessary. Appointment of a SSC by advertisement is a good practice in operation at EUSL.

During the morning session, the lectures were observed. The lecture theatres are common to all Departments and maintained by the Faculty office. Facilities such as white boards are provided by the faculty, but multimedia projectors have to be carried to each lecture by the respective Department. The reason given for not installing projectors permanently is the security concerns. The lecturers observed showed satisfactory skills in delivering a lecture. They all connected the present lecture with the previous one. The writing on the board was clear. The voice is audible and clear. However allocating time to copy notes from the transparency was found unusual and perhaps distressing, particularly because the same material were also available in print. However as there was no other meeting with students, the opinion of the students about this could not be heard. The OHP transparencies seemed to be little too crowded.

The remainder of the time was devoted to peruse the documents while enjoying a cup of tea.

By the early afternoon, the information gathering was completed and a debriefing meeting with the academic staff was held. The reviewers expressed their sincere thanks and gratitude for the making their stay a pleasant one by looking after all facilities including delicious meals provided by them. The reviewers took turns to brief what they learned and what recommendation they would be likely to make when compiling the report. The staff also appreciated the efforts by the team to learn about their activities and to give a feedback.

The team departed around 3:00 pm. In between these activities, the Review Team constantly met together and discussed the outcomes of these observations and meetings. All reviewers collectively contributed to the writing of the report and making judgments in the eight aspects.

2. BREIF HISTORY OF THE UNIVERSITY, FACULTY AND THE DEPARTMENT

The Eastern University, Sri Lanka is located on the Colombo-Batticaloa A11 highway, 300 km and 17 km away from Colombo and Batticaloa, and the location was seen as ideal to link Batticaloa with the south via the Badulla-Chenkalady road, respectively Eastern University, Sri Lanka was the first higher degree institution established for the Eastern Province and it is the 9th National University of Sri Lanka. The land area of the main university at Vantharumoolai is 119 acres and is separated by the main Colombo road into the old complex (33 acres) and new complex (86 acres).

The Eastern University was established in October 1981 initially affiliated to University Peradeniya as the Batticaloa University College. On inception there were two Faculties: Agriculture and Science; the faculties of Commerce and Management and Arts & Culture were added in 1986 when the status of the Batticaloa University College was changed to a full fledged Eastern University, Sri Lanka. Recent establishment of a new Faculty of Health and Care Sciences and the absorption of Swami Vipulanda College of Music and Dance are additional assets to the University. The Trincomalee Affiliated College was upgraded as the Trincomalee campus with the Faculties of Communication and Business studies and Applied

Sciences. The main campus situated at Vantharumoolai has service centers including: the English Language Teaching Unit (ELTU), Centre for Information and Communication Technology (CICT), Staff Development Centre and Career Guidance Unit.

The growth of the University was retarded by a series of political developments in the country in the last two decades. Eastern University survived, despite the recent historical setbacks and is now at the juncture of launching itself into programmes geared towards specializing and diversifying its academic programmes. The Biological Science section of the Faculty comprised of Botany, Chemistry and Zoology departments has reasonable infra structure at the old complex site. A new science block planned is near completion in the new complex site.

Sussex link programme: With the transformation of the University of College to University a major programme on staff development was the Sussex Link programme funded by the British Overseas Development Agency (ODA). A total of 11 academic staff members from the Biological Sciences were sent to the University of Sussex for postgraduate training and 3 for capacity building for technicians. This programme was a turning point for the Faculty of Science. However, it should also be noted that given the ground situation of a heightened political turmoil some of the trained academics did not return after the completion of training that badly affected the academic programmes in the departments.

3. AIMS AND LEARNING OUTCOME

3.1 Aims

Department of Botany has to act towards the Vision and the mission of the Eastern University, Sri Lanka to produce qualified graduates to compete at national and international research oriented employment market with available resources or while acquiring during the development.

“Eastern University, Sri Lanka, aims to be a national centre of excellence for higher learning and research with a competitive advantage, responsive to the dynamics of the regional global conditions”

(Eastern University, Sri Lanka Corporate plan vision statement, 2003)

Thus the university strives to produce graduates who will be exposed and trained in the spheres of local needs and also competent enough to face the global scenario.

The mission of the Eastern University states that:

“the purposes of the Eastern University, Sri Lanka are to pursue excellence in teaching, research and scholarship, to offer through its internal and external faculties, campuses and other facilities, an unsurpassed range of opportunities for education and training to all those who will be able to benefit, to enhance public welfare, prosperity and culture by encouraging applications of leaning and research: and to secure and administer resources to achieve these aims effectively”

(Eastern University, Sri Lanka Corporate Plan, 2003)

Four main objectives have been identified in the corporate plan, which includes:

- a) to offer a range of opportunities for education and training;
- b) to pursue excellence in teaching, research and scholarship;
- c) to encourage applications of learning and research to enhance public welfare, property and culture;
- d) to secure and administer resources fully and
- e) to become a good citizen of Sri Lanka with identities.

3.2. Learning Outcomes

- a) to identify and classify the plant forms and its related functions etc. to become a botanist,
- b) to understand and express the importance of microorganism-plant growth and development and its chemistry,
- c) to have a self confidence on hands on experiences in practical and research related,
- d) to produce a marketable graduate to adapt and suite to any prevailing conditions,
- e) to make a relationship between acquired knowledge in botany with employment.

4. FINDINGS OF THE REVIEW TEAM

These will be presented under the eight aspects as indicated in the introduction. Each aspect will provide the evidences gathered, highlight strengths and weaknesses and make suggestions and recommendations where necessary.

4.1. Curriculum Design, Content and Review

The Department of Botany offers courses for the three-year Bachelor of Science General Degree for students registering at the Faculty of Science for bioscience stream. Students may choose to follow a Special Degree in Botany after the first two years to a total duration of four academic years. An academic year is structured in to two semesters each consisting of 15 weeks. This system was introduced in 2000 gradually replacing then existed three terms a year system. With this change over, the Faculty has introduced the course unit system which is now in operation in all four years. The Department and the Faculty in general has recognized the importance of this major revision and have responded promptly.

The Staff of the Department of Botany however realize that the continuous assessment, an integral part of the modular system, is not being practiced properly. The reason given is the lack of understanding of the concept owing to the non-availability of sufficient staff knowledgeable and experienced staff. Having identified the weakness themselves, this could have been addressed. This can be rectified if the Department/ Faculty organize a workshop on this subject, perhaps with consultation of QA Board.

It appears that the curriculum revision is done in an *ad hoc* manner, depending on the availability of expertise at the Department. A revision has also taken place in 2003 in order to reduce overlaps between course units offered by different Departments. Curriculum changes are taking place intermittently where addition of new course units is done with the return of

lectures with qualification in various new fields while keeping the existing units as they were. This is particularly apparent in Special Degree curriculum.

The curriculum of the General Degree consists of core course units and optional course units. The Department of Botany offer core course units totaling to 22 credits. The numbers of credits that can be obtained from core course units offered by Departments of Chemistry and Zoology are 20 and 12, respectively. There are common core courses for biological science stream amounting to 12 credits in a variety of fields i.e. Fundamentals of computer systems and introduction to application software, Social studies for science, Introduction to social harmony, Management and entrepreneurship, Introduction to career guidance, and Sri Lanka studies. The total core credits for a biological science student is, therefore, 66 and thus they are free to choose the remaining 24 credits from the available 44 credits offered by the three Departments and common optional course units offered by Faculty of Commerce and Management. There may be more optional course units available for Biological Science students from other Departments. The integration of multidisciplinary course units into the Degree stream with the collaboration of Department of Mathematics and the Faculty of Commerce and Management and provision of flexibility to choose nearly 25% of the credits can be considered as a good practice.

The topics covered under the core units of Botany curriculum for General Degree is appropriate. The content under each subject area is also satisfactory. However, in the present context, molecular biology and biotechnology has become very important in undergraduate curricula in biology. Therefore the Department is encouraged to find a way to introduce at least one course unit in this discipline in order to make the graduates more competitive. The course unit on Industrial Microbiology may be given as an optional course unit, if the core course units should be kept at the present level. A course in genetics and development biology is offered to Biological stream students by the Department of Zoology. If the two Departments collaborate in improving this unit by incorporating some botanical aspects, then this will also be more beneficial to the student.

The *ad hoc* nature of curriculum development is most evident in the Special Degree. The total number of credits available in the final year is 95, whereas a student is expected to obtain (approximately) 30 credits. When nine credits for Essay (03) and the research project and seminar (06) are set aside, a student has the freedom to choose 21 credits from 86 i.e. 1 out of 4. Although certain flexibility should be given, the Department should focus on its aims and objectives and graduate profile. Providing such a large flexibility will render some of the vital units redundant. All the units listed are relevant for a Special Degree in Botany, but when a student may opt out 75% of the credits, the purpose may be lost. This could be overcome partly by reducing the size of most of the course units. For example, many subject areas covered have 45 hrs lecturing and 60 hr practical classes totaling to 5 credits. Offering 4 or 5 such subjectareas can satisfy the credit requirement. Another approach is to design several streams of specialization within Botany, so that different graduates have different specialization. However given the shortage of qualified teachers, offering 95 credits for Special Degree in one year seems unrealistic. This problem was discussed during the visit by reviewers, but the explanations given could not satisfy the review team.

The curriculum is developed and revised at the discretion of the Department. This curriculum is presented to the Faculty Board for its recommendation to the Senate. It seems this is only place where students can make their contribution. No evidence could be found to the effect that the Department has consulted the stake holders in curriculum designing. A Senate

subcommittee (Curriculum Evaluation Committee) will scrutinize the document and forwarded to formal approval of the Senate and the Council.

Although the present curriculum can support the aims of the Department, the Review team was of the opinion that obtaining assistance of a consultant in identifying a graduate profile and to develop the curriculum to suit that may be a worthwhile investment given the scarcity of senior academics. This should iron out any difficulty in implementing the course unit system properly and effectively.

The medium of instruction is English. This will improve the students' skill in communicating in English which provides an advantage to the students in future career development. To support the student at least at the beginning, the Faculty provides English classes through ELTU. CICT is also another supporting service that enhances the computer literacy.

None of the graduates were reported to engage in establishment of his/ her own enterprise. The graduates should be encouraged to enter into such ventures, as they will do well with the knowledge, skills and experience gained during the University of life. Although a course in entrepreneurial skills is being taught it has failed to achieve the target. A more comprehensive practice oriented course may fill this gap. This may be given as a noncredit unit for interested students.

Certain students may find it difficult to complete a full Degree course for various reasons including those that are specific to areas under conflicts. Therefore some students drop out at various stages. This was seen in the Tables in the SER where the student numbers were shown. In some Universities these students lose everything in the higher education. As such the decision of the EUSL to offer them with a certificate or a diploma in Science is seen as a good practice.

4.2. Teaching, Learning and Assessment Methods

Teaching and Learning: The medium of instruction of the degree courses is English. According to the information obtained from the staffs and students, it was stated that learning materials are provided for the practical either before or at the beginning. Nevertheless this is not followed for the theory as it may avert students from active learning. However, outline and relevant tutorial questions for a theory course are provided at the beginning. Students are able to access all learning materials through the intranet launched by the computer unit of the Faculty of Science.

Lectures are conducted followed by practical classes or field visits. Lecture preparation, organization and delivering were good. White board and OHP are usual teaching aids and some time multimedia projector is used. Contents of the lecture were summarized and hand-written on transparency and displayed to the students. Some OHP transparencies were over crowded with notes. Some additional notes and important words (which are mostly confusing) were written on the white board. This may be a good practice since poor students may find it difficult to understand the lecture without this knowledge.

The present lectures were connected to the previous ones by questions and answering method. It was seen that students were much interactive with lecturer, motivated and kept alive throughout the lectures. It would be better if question were more 'open' than 'closed'. It is unfortunate that the review team was unable to know the students' feedback on lectures as the Team was unable to meet them just after the lectures. Mutual visiting is followed between

Faculty of Agriculture and Faculty of Science for Biochemistry and Plant Pathology and Techniques subjects, respectively. This feature can be elaborated when different degree programmes are designed with multi disciplinary aspects with the contribution of different departments of the faculty. This also will minimize the effect of lack of qualified staff in the department.

Assessment methods: Students are evaluated by both continuous assessments and end semester examinations. The continuous assessments could be in the form of short answer questions, quizzes, assignments etc. In the case of practical courses, the methods of assessments could be different depending on the nature of the subject. It can be an end semester practical examination along with continuous assessments or can be submission of a report for field visits or an industrial training. Students expect to have more field visits and industrial training, but that has not been practical due to the security problem in the region. The continuous assessments are held and are not repeated. Therefore, students are expected to attend for lectures and practical classes regularly.

Duration of a theory question paper for end-semester examination is 1-3 hours depending on the credit value of the course unit. The number of questions is 02 per credit, each of half hour duration and all questions should be answered. Duration of a practical examination at the end semester examination is 02 to 03 hours.

All question papers of the end semester examination for either General or Special Degree courses are moderated internally first and later they are sent to external moderation to the other national universities before having examination. Moderated papers and their reports from the external examiners are maintained by the examination branch of the university. The same method is followed to the answer scripts too. Answer scripts of the special degree course are sent to some foreign universities (eg. University of Kwa-Zulu, Natal, South Africa) for second marking. However, project reports/ dissertations of the special degree are evaluated internally along with an oral presentation. It is an excellent character as exam papers are well scrutinized and the Faculty maintains the good standard in the examination.

Small group projects or field visits or industrial training are given to the students for some course units (Population Biology, Weed Ecology etc.), for which a practical cannot be conducted at the laboratory. Reports for the above are evaluated internally and marks are added to the final marks. The same way students are given a particular percentage of marks for the practical recording, which is also added under the continuous assessments. The good character of the final grading is students are kept on safe side by selecting the average marks of the best two among three continuous assessments or assignments.

4.3. Quality of Students, including Student Progress and Achievements

A particular number of students are allocated to the University by the UGC just after their competitive G.C.E (A/L) examination. However, the actual number of students is far below the capacity of the faculty. This is undoubtedly a waste of resources and unacceptable in the national context, as many qualified children cannot gain access to the University. Although allocating students is responsibility of UGC, the Faculty should take appropriate action to get the full complement of students.

Students are exposed to the university system, provided information about the degree programmes through an orientation on their first visit to the university. In Addition, ELTU is conducting an English course for the new comers along with their degree programmes.

However, Students are requesting at least one month intensive course in English (Communication skills, practical recording etc.) and basic computing before starting the degree programmes. It will really help to make them more self-assured on their career.

Approximately 50% of the registered students for the biological science stream are offering botany as a subject. It was noted that in every academic year there is a drop number of students in the botany subject. This is apparent from the Tables of the SER. It was stated that students are not interested to follow special degree in botany or dropping the degree programme due to the war situation prevailing in this region.

During the meeting with students and the student presentation, the students showed good communication skills and were uninhibited in the usage of English language. Many passed out students are employed in Government sectors as well as in the NGOs. In the same way many graduates could be employed in the private sectors if the curriculum in the biological sciences was tailored to congregate this need. As suggested above, possibility of inculcating entrepreneurship attitudes could be explored by the Faculty.

4.4. Extent and Use of Student Feedback

Students' feedback is obtained by Dept. of Botany at various forums about the quality of academic programmes, teaching and learning processes and the quality of other facilities. The department adopted methods to get the students' feedback quantitatively by using different evaluation forms (questionnaire, Annex- &-). The questionnaire (Annex-) is given to the students at the end of each course of lectures where major criteria used for evaluation are (i) learning experience, (ii) enthusiastic about the subject and organization of the lecturer, (iii) clarity (iv) interaction of the lecturer, (v) use of handouts and printed notes, (vi) task orientation (vii) pace of lecturer, (ix) support of learners. The Review Team found that a majority of students have expressed (4) on a scale of (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree and (5) strongly agree. The questionnaire also has carried another page inviting comments on six issues on impact of course unit and course material. The questionnaire compares teaching of a lecturer between two semesters. The teachers observed these responses and comments made in the questionnaire by the students and take steps to improve the quality of teaching and teaching environment. The Review Team found that the good practices initiated in the quantitative students' feedback can be further strengthened if the responses of the students were statistically analyzed. It is also suggested that all the academics including the visiting faculties too to follow this good practice.

It was also revealed to the Review Team at the meetings with the staff that the department acquires students' feedback qualitatively at the discussions in the laboratory sessions/tutorials where a close interaction is possible. Students also stated that they express their view at the Faculty Board meetings or to the Head of the Department or Dean of the Faculty on curriculum revision, selection criteria for special degree from time to time whenever necessity arises. At these occasions students' suggestions on all matters of quality of education were received by the authorities.

4.5. Postgraduates Studies

The department of botany has produced only two postgraduate degrees due to lack of physical facilities and well experienced, competent staffs for the relevant subjects. At present, one of the staff is following master degree programme at the department with the

collaborative supervision from university of Peradeniya. The most pathetic aspect of the department is the lacking of physical and human resources for the postgraduate degree programmes. This can be alleviated if the department is having more collaborative programmes with other national and international universities.

Annually, academic staffs are provided research grants for their research proposal to conduct some research in small scale level. This is appreciable as staffs are very much motivated to improve their career. The findings of these research works are disseminated at the annual research session organized by the university.

4.6. Peer Observations

The department follows a procedure very recently to observe the theory class teaching of an academic staff by another member of the department on mutual arrangement where one delivers the lecture and the other reviews (observe) the lecture. The Reviewer gives his/her comment on a prescribed form called Checklist for Peer Observation of Teaching (Annex-) which comprises seven items viz. (i) preparation and planning, (ii) class management, teaching and communication techniques, (iii) use of resources, (iv) monitoring effectiveness, (v) responsibility, (vi) teaching strategy, and (vii) sensitivity. The Reviewer comments on each of the seven items. The Reviewer and Lecturer thereafter take each item and attend to the comment(s) made by the Reviewer with the help of a Mentor.

This peer observation report could be obtained at least once a semester for a course of study for an academic and the progress has to be monitored. The peer observation process practiced by few academics may be extended to all the academics and part-time & visiting staff where the Head of Department should be very tactful in this very sensitive matter. Peer observation of practical classes is another matter to be attended in the future. The reports of the peer observation and students feedback have to be correlated to the Staff Development Programme required for an academic staff member.

The practices such as moderation of question papers, second marking of the answer scripts are carried out. Evaluation of the presentation, viva and research project seminar is also done by a group of academic staff. The comments made by the external moderator, second marking examiner and external member in viva and other presentation has to be taken up at staff meetings for further improvement in the quality of teaching and evaluating processes.

4.7. Skills Development

The academic and nonacademic staffs of the Department as well as the staff of the Department of Mathematics, Faculty of Commerce and Management and service units such as ELTU, CICT and Career Guidance Unit etc. have made their contribution in development of skills of the Biological science graduates of the EUSL. The student presentation was satisfactory and displayed skills in English language, IT usage and communication. ELTU's self-access Centre and English Club may help the keen student. On going English course is appreciated by students, but they wish to have intensive courses in English and IT during the orientation period. The arrangement of English classes for more enthusiastic students on their request by the ELTU is a good practice in this line. Sufficient number of computers is available for students to developing IT skills by having hands on experience. Web based assignments, preparation of project reports on computer undoubtedly help IT skills development. By designing core courses on social science and social harmony are other areas that the Faculty has addressed another area where students must develop good attitudes.

Management, accountancy and entrepreneurship are also core courses. However there is no evidence to say that these courses have their effect as none of the alumni is reported to engage in any form of venture of his/ her own.. Majority of the graduates find employment in the NGO sector. These courses and the career guidance may need improvement to inculcate such positive attitudes. Engaging in mini projects can develop these skills and leadership qualities through skills in problem solving.

4.8. Academic Guidance and Counseling

Senior academic staff members of the department have been appointed as Academic advisors and student counselors (02). The student handbook and University Calendar are made available and are updated annually. Every student has the opportunity to meet the Academic advisor or any academic staff of the department to obtain advice regarding selection of subject combination and special degree. Freshers at the beginning of the university were given an orientation programme where the Dean of the Faculty, Student Counselors, Heads of Departments and Academic Advisors addressed the new comers and gave appropriate guidance.

Whenever the students face personal problems they meet the student counselors or any members of the academic staff of the department to find out a solution. For professional counseling, students approach a trained counselor. Whenever students encounter financial or accommodation problems, the Student Counselors direct the students to the welfare section of the University for assistance. The Review Team noted that the Office of the Senior Student Counselor is not properly organized.

Regarding career development, the Career Guidance Unit conducts seminar with participation of prominent people from the industry to give guidance and views on how to select a career when the students graduate. This is further strengthened by the CGU organizing training on various matters such as preparation of curriculum vitae, facing viva, presentation of an assignment or research report. The Review Team noted that the general degree undergraduates too are given opportunities for industrial/internship training to enhance their practical training & employability.

5. CONCLUSIONS

5.1. Curriculum Design, Content and Review

Strengths/Good Practices

- The curriculum has been structured into Semesters and Course Units responding to the current trends.
- Introduction of common core courses and certain optional courses enhances the knowledge and skills that would not be delivered from subject related courses.
- The same activity promotes resource sharing and build up of mutual understanding and cooperation among different Departments and Faculties.
- The contents of core Botany course units offered are appropriate and sufficient.

- Provision of a certificate or a diploma for those who are unable to complete B.Sc. Degree is a positive move, especially taking the present insecure status in to consideration.

Weaknesses

- Although course unit system is being followed, the staff is not fully aware of modalities of it.
- Lack stake holder participation in curriculum development/ review.
- Curriculum appears to contain too many and/ or too heavy course units that can be handled by the Department.
- Molecular biology and biotechnology related course units are not taught.
- Special Degree curriculum is too vast, especially because there are only a few students (or none) Special Degree and too few staff.

5.4. Extent and Use of Student Feedback, Qualitative and Quantitative

Strengths/Good Practices

- The department obtains students' feedback quantitatively by using evaluation forms (questionnaire)
- The findings of the student feedback were discussed with the Head of the Department

Weaknesses

- The good practices initiated in the quantitative students' feedback can be further strengthened if the responses of the students were statistically analyzed.
- All the academics including the visiting faculties too to follow this good practice
- Could not observe the feedback obtained from the students and changes or improvement made through the results of the feedback
- Feedback questionnaires are given only to the general degree students. It is unable to generalize the good practice since it was not provided to the special degree students

5.6. Peer Observation

Strengths/Good Practices

- The department follows a procedure very recently to observe the theory class teaching of an academic staff by another member of the department
- The Reviewer gives his/her comment on a prescribed form.

Weaknesses

- The peer observation process practiced by few academics not extended to all academics and part-time & visiting staff
- Peer observation not extended to practical classes.

5.7. Skills Development

Strengths/ Good Practices

- Students have the opportunity to follow a number of common core courses and optional courses that helps to develop different skills
- ELTU responds to the needs of students by providing additional classes
- Students are satisfied with the availability of computers and the services provided by CICT
- Web based assignments are incorporated into the assessment system
- Majority of theory course units are tied up with a practical course unit

Weaknesses

- Entrepreneurship attitudes and skills needs more attention

5.8. Academic Guidance and Counseling

Strengths/Good Practices

- Availability of updated students' Handbook and University Academic Calendar
- There is an organized student guiding system and an orientation programme

Weaknesses

- Student counseling system not streamlined.
- The Office of the Senior Student Counselor is unorganized.

The judgment given for the eight aspects of the subject review are summarized below.

Based on the observations made during the visit by the Review Team, the eight aspects were judged as follows:

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

The overall judgment is suspended

6. RECOMMENDATIONS

The Review Team would like to make the following recommendations in order to improve the quality of education in the Dept. of Botany.

- Appropriate action be taken to fill the vacancies in student intake
- Find out reasons for students not selecting Botany as a Special Degree subject and to attend to remedies
- Orientation program be lengthen to provide intensive courses in English and IT along with interdisciplinary lectures, seminars, workshops etc.
- A workshop be held with a resource person(s) outside the EUSL to formulate modalities including the assessment methods in course unit system
- A workshop(s) be arranged with the participation of all stakeholders to design a better and workable curriculum
- At least some introductory course units in molecular biology and biotechnology be introduce
- Potential of agro-forestry area as a teaching tool be utilized in a more constructive manner
- The department may consider to conduct a postgraduate programmes leading to at least taught M.Sc. with short research project. Postgraduate teaching would uplift the teaching and recognition of the department. In turn, this recognition would bring more research students to the department.
- It is recommended that peer observation be extended to all academic staff and for practical classes as well.
- The feedback for the lectures and practical classes be obtained very regularly from the general and special degree students. The evaluation be extended to visiting lectures too.
- The comments, suggestions and other feedback obtained from the moderators of the question papers and second examiner, both local and foreign should be taken up for discussions at appropriate forums such as result boards, departmental meetings and curriculum review committee meeting.

- Student counseling system be streamlined with providing better facilities for Senior Student Counselor.
- Curriculum be reconsidered to carry very relevant, more appropriate, skillful subjects in order to make more capable graduates for the present employment requirements.
- Non academic staff be trained on technical aspects as well as on computer application, language skill etc.
- The new students be provided with a very structured intensive English course and IT for one or two month/s before starting their academic programmes.

ACKNOWLEDGEMENTS

The Review Team appreciates the excellent working arrangement made by the department during the review visit. The staff members understand about the review process and displayed all necessary documents to assist our review. Whenever the Review Team needed more information or documents the Head of the Department and the academic staff provided the same. The non-academic staff too facilitated our process with the common objective towards the development of the department. The Review Team is grateful to all the categories of staff in the department for the support given during our visit.

7. ANNEXES

Annex- 1. AGENDA OF THE SUBJECT REVIEW VISIT

Day 1: 17th of December 2007 (Monday)

08.30 – 09.00 am	Arrival of Team and brief discussion
09.00 – 09.30 am	Meeting with the Vice-chancellor and Internal QA Team
09.30 - 10.00 am	Discuss the Agenda with Head / Botany
10.00 – 10.30 am	Meeting with Head / Botany and Academic staff at the department with tea
10.30 – 12.30 pm	Department presentation on the self evaluation report
12.30 – 01.30 pm	Lunch
01.30 – 02.30 pm	Observing department facilities (Laboratories of Anatomy, Microbiology and Biochemistry, Herbarium, other facilities. etc.)
02.30 – 03.30 pm	Observing other facilities (ELTU, New block, Agroforestry area, Medical Centre, Library, CCIT, etc.)
03.30 – 04.00 pm	Meeting with all staff of Department of Botany and tea
04.00 – 05.30 pm	Observing documents

Day 2: 18th of December 2007 (Tuesday)

09.00 – 09.30 am	Special student presentation.
09.30 – 10.30 am	Meeting with special student.
10.30 – 11.00 am	Meeting with representatives of student counsellors, academic advisors, Career Guidance, ELTU, SDC, CICT.
11.00 – 12.00 noon	Observing documents with tea.
12.00 – 01.30 pm	Meeting with undergraduate students.
01.30 – 02.00 pm	Lunch
02.00 – 02.30 pm	Meeting with Chairman, Internal QA Unit
02.30 – 03.30 pm	Observing documents with tea
03.30 – 05.30 pm	Meeting with staff (Non-Academic)

Day 3: 19th of December 2007 (Wednesday)

09.00 – 09.30 am	Observing teaching – 1 st year
09.30 – 10.00 am	Observing teaching – 2 nd year
10.00 – 10.30 am	Observing teaching – 3 rd year
10.30 – 11.00 am	Tea
11:00 – 11:30 am	Meeting with Senior Student Counsellor
11.30 – 12.00 pm	Meeting with Head and Staff.
12.00 – 12.30 pm	Lunch
12.30 – 04.30 pm	Report writing

Annex 2. LIST OF SUPPLEMENTARY DOCUMENTS OBSERVED

1. Curriculum Design, Content & Review

- 1.1 Student Handbook
- 1.2 Departmental meetings regarding curriculum revision
- 1.3 Faculty meetings regarding curriculum review

2. Teaching, Learning & Assessment Methods

- 2.1 Organization of academic work
- 2.2 Teaching & learning materials
Lecture notes/Reading materials for lectures/Record books for lectures /
Practical schedules/Record books for practicals/Tutorials
- 2.3 Assessment methods
Student practicals/Continuous assessments/List of examiners/
Marking schemes & model answers/External examiners comments/Exam papers

3. Quality of Students, Student Progress & Achievements

- 3.1 University entrance qualifications (Z-score values)
- 3.2 Results (Confidential - available with the Head can be provided on request)
- 3.3 Final achievements of students

4. The Extent & Use of Student Feedback, Qualitative & Quantitative

- 4.1 Student Feedback Questionnaire-on teacher
- 4.2 Student Feedback Questionnaire-A comparison during the period of teaching between Mid Semester and End Semester period
- 4.3 Student Feedback Questionnaire-on impact of course material/course material

5. Postgraduate Studies

- 5.1 By laws – Post graduate studies
- 5.2 Interaction with other departments, faculties, universities & other institutes
- 5.3 Post graduate supervision and dissertation

6. Peer Observation

- 6.1 Check list for peer observation of teaching

7. Skills Development

- 7.1 Students Presentation
- 7.2 Discussion with students
- 7.3 Students society work
- 7.4 Undergraduate group project work
- 7.5 Special Degree dissertation
- 7.6 Visits to support services and discussions with persons in charge

8. Academic Guidance & Counseling

8.1 Student Handbook 2005/06

8.2 EUSL calendar 2007

8.3 Departmental information for new students

8.4 Student guidance

8.5 Student advisory/counseling activities

8.6 Annual reports

Other Materials

Research grants/Publications

Annex- 3. STUDENTS FEEDBACK QUESTIONNAIRE

Department of Botany, Eastern University

Students' Feedback Questionnaire

The **purpose** of this questionnaire is to obtain your views and opinions about the lectures you have been given during the course and to help the lecturer evaluate his/her teaching.

Please indicate, by circling the appropriate number in each case, your agreement or disagreement with each of the following statements.

The lecturer	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. Encourages students to participate in class	1	2	3	4	5
2. Allow opportunities for asking questions	1	2	3	4	5
3. Has an effective delivery	1	2	3	4	5
4. Has a good support with learners	1	2	3	4	5
5. Is appropriate and friendly with students	1	2	3	4	5
6. Is respectful towards students	1	2	3	4	5
7. Is able to reach at the students' level	1	2	3	4	5
8. Enable easy note taking	1	2	3	4	5
9. Provide useful handouts of notes*	1	2	3	4	5
10. Helps students' by providing printed notes*	1	2	3	4	5
11. Has wide subject knowledge	1	2	3	4	5
12. Maintain students' interest during lectures	1	2	3	4	5
13. Gives varied and lively lectures	1	2	3	4	5
14. Is clear and comprehensible in lectures	1	2	3	4	5
15. Gives lectures, which are too fast to take in	1	2	3	4	5
16. Give audible lectures	1	2	3	4	5
17. Gives structured and organized lectures	1	2	3	4	5
18. Is enthusiastic about the subject	1	2	3	4	5

* Please answer if applicable.

Annex- 4. SELF FEEDBACK QUESTIONNAIRE - A COMPARISON DURING THE PERIOD OF TEACHING

How well I did.....	Mid Semester				End Semester			
	Very well	Satisfactory	Not very well	Poor	Very well	Satisfactory	Not very well	Poor
Link this session to other session								
Introduce this session								
Make the aims clear to the students								
Move clearly from stage to stage								
Emphasize key points								
Summarize the sessions								
Maintain an appropriate phase								
Capture students' interest								
Maintain students' interest								
Handle problems of inattention								
Ask questions								
Handle student questions and responses								
Direct student tasks								
Copy with the range of ability								
Monitor student activity								
Use aids as illustrations								
Make contact with all class members								
Cope with individual difficulties								
Keep the material relevant								
Check one student learning								
Build up student confident								
Convey my enthusiasm								
Provide a model of good practice								
Use of voice and body movements								

Annex- 5. CHECKLIST FOR PEER OBSERVATION OF TEACHING

(1) Preparation and Planning	Comment on choice and level of objectives	Comment on selection and organization of contents	Comment on choice of learning objectives
(2) Class management, teaching and communication techniques	Comment on ability to establish teacher/student relationships for teaching	Comment on organization of large and small groups	Comment on use of voice and gesture
(3) Use of resources	Comment on knowledge, use and management of reference materials	Comment on use of handouts	Comment on guidance for students on use of resources outside class
(4) Monitoring effectiveness	Comment on how well teaching methods were monitored	Comment on how well students' progress & standing was monitored	Comment on what responsive action was taken

(5) Responsibility	Comment on who took charge	Comment on who did all the talking	Comment on who took responsibility for the learning (did this change?)
(6) Teaching strategy	Comment on whether or not the teacher adopted a strategy (e.g. lecture, testing, summarizing, revision, etc.)	Comment on how far the teacher was flexible and able to change	
(7) Sensitivity	Comment on how far the teacher appeared to be aware of and responsive to learner's needs. Give examples.		
(8) Functions	Comment on what emotion was expressed (e.g. anxiety, pleasure, boredom, annoyance)	Comment on the effect of expression of these feelings had on the efficiency and effectiveness of the teaching	
(9) Learning strategies	Comment on whether the learners showed any particular strategies is going about learning (e.g. passivity, methodical, wanting, information, demanding explanations, taking charge, etc.)		

Name of the participant:

Name of the peer and designation:

Time of evaluation:

Signature of

(i) Participant:

Date:

(ii) Peer:

Date:

(iii) Mentor:

Date:

Annex- 6. LIST OF FILES OBSERVED**DEPT. OF BOTANY, EASTERN UNIVERSITY, SRI LANKA**

01 Vice Chancellor	41 Other Universities
02 Registrar	42 SLASS
03 Bursar	43 NSF
04 Maintenance Dept.	44 NARA
05 Library	45 Advanced Level Students& School
06 Dean Science	46 Workshop/Training/Seminar Etc.
07 Dean Agriculture	47 Proposal/Publication/Award
08 Dean Com.& Mgt	48 EUSL News Letter
09 Dean Arts & Culture	49 Course structure General
10 Dean Health Care Sciences	50 Course structure Special
11 Miscellaneous	51 Course structure External
12 Other Dept.	52 Time Table Internal
13 Dept. Meeting	53 Time Table External
14 Heads Meeting	54 Visiting Lecturer
15 Faculty meeting	55 Mahapola /Bursary
16 Finance Committee Meeting	56 Students Admission
17 Tender Board Meeting	57 Postgraduate Studies
18 Study Leave	58 Result Sheets
19 Senate Meeting	59 ARS
20 Research works	60 Research Activates
21 Curriculum Evaluation	61 Corporate Plan
22 Quotation Committee	62 Notice Board Copies
23 Selection Committee	63 Vehicle Booking
24 Sub Committee	64 Staff Address /Telephone No
25 Board of Examination	65 Postal
26 Staff Botany	66 List of Duties
27 Special Degree Students	67 Leave Statement
28 Internal Students	68 Annual Convocation
29 External Students	69 Annual Allocation
30 Staff Development Centre	70 EUSL Circulars
31 Carrier Guidance	71 UGC Circulars
32 CICT	72 Heads Letters
33 ELTU	73 Subject Combination
34 CENSAM	74 Field Trip
35 CARM	75 University Act
36 IRQUE	76 Calendar of Dates
37 Silver Jubilee	77 Dept. Contribution
38 Student Union	78 Annual Report
39 EUEU	79 Hand Books
40 EUTA	80 Lecture Schedules