SUBJECT REVIEW REPORT

DEPARTMENT OF MOLECULAR BIOLOGY AND BIOTECHNOLOGY

FACULTY OF SCIENCE
UNIVERSITY OF PERADENIYA

5th to 7th December 2011

Review Team :

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1. SUBJECT REVIEW PROCESS

The external quality assurance process was introduced to the Universities and other education institutes of Sri Lanka with a view to evaluate quality of education received by students, both undergraduate and postgraduate, in each institution by external evaluators in addition to the quality checks done internally. Subject review evaluates a Department of study for the quality of student learning experience and student achievement. The Department prepares a self evaluation report and a panel of external experts in quality assurance peruses this report and also verifies the information provided in it in a site visit. During the site visit, the panel collects evidence by observing documents made available, by discussing with various categories of students & staff and alumni, and also observing facilities and teaching. At the end of the site visit the panel provides a feed back to the academic staff of the Department on what it has found and suggestion for possible improvements. The staff is allowed to discuss the observations and recommendations of the panel during this session with a view of clarifications. In this peer review process good practices are shared among staff of the Department and the members of the panel.

In this exercise, the attention is focused on the following specific aspects;
1. Curriculum design, content and review
2. Teaching, learning and assessment methods
3. Quality of students including student progress and achievement
4. Extent of student feedback, Qualitative and Quantitative
5. Postgraduate studies
6. Peer observation
7. Skills development
8. Academic Guidance and counseling

External Quality Assurance process increases the transparency of the higher education institutes which improves the accountability for quality standards which promotes and safeguards the public confidence in such institutions in Sri Lanka.

The Department of Molecular Biology and Biotechnology, Faculty of Science, University of Peradeniya has submitted its self evaluation report in September, 2011. On the invitation of the Quality Assurance and Accreditation Council (QAAC) of the University Grants Commission (UGC), following members served in the review panel:

Professor Sanath Hettiarachi (Chair) – University of Ruhuna
Professor DPSTG Attanayake – Wayamba University of Sri Lanka
Professor AAY Amarasinghe – Sabaragamuwa University of Sri Lanka

The site visit took place from 5th to 7th December, 2011. After a brief introduction of the process and the review panel to the Vice Chancellor by the Acting Director of Quality Assurance and Accreditation Council Prof. Colin Pieris, the Panel followed an agenda (Annexure 1) which was agreed upon by the Department and the Panel. The presentation by the Head of the Department, with concurrent discussion was very useful event in the process to clarify and understand various aspects. The documents and facilities observed are listed in Annexure 2 and 3, respectively. Lists of participants in different meetings are also annexed (Annexure 4). The Panel also observed three teaching sessions; two lectures and one practical class. Review Panel was also provided an opportunity to listen to presentations by one

undergraduate student and one postgraduate student. This report is based on the Self Evaluation Report and findings during the site visit.

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

The University of Peradeniya was founded as the successor to the University of Ceylon, which was established in 1942 as the first university in Sri Lanka. It is located 100 km away from Colombo, in the foothills of Hanthana mountain range and flood plain of River Mahaweli in Peradeniya, which is just 8 km away from Kandy, the historic capital of last independent kingdom of Sri Lanka. The university land covers about 700 hectares, of which about 150 hectares have been developed with university buildings and other facilities. The rest of the land remains mostly afforested. The University of Peradeniya is home to eight Faculties, namely, Agriculture, Allied Health Sciences, Arts, Dental Sciences, Engineering, Medicine, Science, and Veterinary Medicine and Animal Science.

The Faculty of Science of University of Ceylon, which was initially located in Colombo, was shifted to Peradeniya in 1961. The Faculty of Science at Colombo was allowed to continue in order to accommodate the increasing demand for science education in the country and later became the Faculty of Science, University of Colombo as it became an independent university. The subjects initially offered by Faculty of Science at the University of Peradeniya were Botany, Chemistry, Physics, Applied Mathematics and Pure Mathematics and Zoology from the Departments of Botany, Chemistry, Physics Mathematics and Zoology respectively. With the creation of the Department of Geology in 1964 the Faculty introduced Geology as a subject in 1967. Two new departments, the Department of Statistics and Computer Science and the Department of Molecular Biology and Biotechnology (MBB) were established in 1997 increasing the number of departments in the Faculty to eight. At present the Faculty of Science at the University of Peradeniya offers to students B.Sc. General Degree in nine principle subject areas in fifteen different combinations, nine B.Sc. Special Degrees, an industry oriented B.Sc. Degree in Applied Science and two interfaculty degree programs in collaboration with the Faculty of Arts. . The Student population in the faculty at present stands around1766.

The Department of MBB was established in the Faculty of Science at University of Peradeniya in 1997. With rapid advancement of the field of Molecular Biology and development of Biotechnology, the Faculty recognized its potential in national development, and thus, established the Department in order to produce manpower to fulfill national needs. At present, the Department offer courses for B.Sc. General Degree, B.Sc. Special Degree in MBB, B.Sc. Special Degree in Biology and B.Sc. Degree in Applied Science. In addition, the Department is also involved in conducting postgraduate programs through the Postgraduate Institute of Science, University of Peradeniya.

Vision and Mission of the Department

Vision

The Vision of the University of Peradeniya is to be a leading university in the region with international standing.

Mission
The Mission of the University of Peradeniya is to promote excellence in higher education and research and to contribute towards national development

The Department of MBB is being developed in context of the educational policies of the university. The Department seeks to participate in the realization of the educational policy goals of the University of Peradeniya by achieving the following objectives.

- Provide the students with a rigorous and demanding quality educational program that imparts the students with necessary knowledge and skills to be competent in the discipline and achieve their career goals.
- Create a cordial and friendly environment that nurture staff-student interactions and develop positive attitude and confidence in students.
- Assure equal opportunity for every student regardless of sex, race and religion.
- Provide the staff with opportunities for continuous professional development and training.
- Promote research and collaborations with industries and national as well as international organizations.

The Department of MBB has a mission to impart knowledge and skills and develop positive attitudes among students through studies and research in MBB. The Department of Molecular Biology and Biotechnology is committed to produce graduates who can be pioneers locally and internationally and contribute to the society through education, research and industrial roles in both government and private sectors. The Department is laying a strong foundation in Molecular Biology, Biochemistry and Biotechnology in the Second Year, and thereafter, through a wide variety of theoretical and applied courses and a research project in MBB, it aims to produce graduates with required knowledge, skills and attitudes, who can assert and contribute to this highly dynamic and modern area of Biological Sciences. The staff of the Department is strongly dedicated to conduct high quality research in their fields to enhance knowledge and to solve problems faced by human beings.

3. AIMS, LEARNING OUTCOMES AND PROGRAM DETAILS

3.1 Aims

The aims and learning outcomes of the undergraduate teaching program of the Department of MBB are directed at providing students with theoretical and applied knowledge and skills in MBB and developing positive attitudes towards the utilization of science in solving variety of problems faced by human being. They are expected to make the students confident, independent and quick learners in new facets of MBB in the undergraduate program as well as in their future careers. The greatest challenge faced by any undergraduate and postgraduate program in MBB in the world is to stay up to date in these rapidly developing areas of science. The staff is fully committed to provide most recent knowledge to the students and train them in modern *State of the Art* techniques used by the global community in the fields of MBB.

The Department aims to provide:

1. a comprehensive opportunity to develop the students' competence in a wide variety of courses in MBB with modern techniques and up to date knowledge.
2. a strong platform to students to acquire general, specific and transferable skills such as communication, presentation and computer skills required for lifelong learning and working processes.
3. an environment for the students to understand the interdisciplinary nature of MBB and to comprehend the value of collaborations in fundamental and applied research.
4. motivation and individual guidance to the students to prepare for and to find them suitable places for higher studies locally or internationally in different disciplines of MBB.
5. an opportunity for students to become acquainted with data analysis and critical interpretation of outputs and prepare high quality communiqués and composes to dynamically interact with scientific community.
6. a set of guidelines to the students to understand the importance of local and global regulations and ethics of MBB. The Department of MBB always emphasizes the sound, ethical and peaceful conduct of Biotechnology for the benefit of mankind and also make sure students totally understand the misdemeanor nature of plagiarism and stay away from it.
7. opportunities for staff to develop their teaching skills through workshops and student and peer evaluation systems.
8. a strong collaborative research partnerships with other departments of University of Peradeniya and other universities and various other organizations because of the interdisciplinary nature in MBB.
9. strong outreach programs to train undergraduates in University of Peradeniya and other universities, especially under-resourced places in the country and conduct awareness activities of Biotechnology in schools, Police Department and other outside institutes.
10. career guidance and counseling to students and develop their personalities and soft skills through extracurricular activities such as student organizations.

3.2 Learning Outcomes

MBB depend immensely on practical and theory oriented teaching strategies to comprehend the complexity of biology at molecular level. Special emphasis is given to the rapidly evolving nature of the MBB disciplines by referring to the latest text books, high quality internet resources and research papers. Learning outcomes are directed at coaching students to develop observational and analytical thinking powers and to carry out scientific investigations to solve theoretical and practical problems. Students are trained to disseminate their research findings through presentations, reports and publications in scientific manner that is coherent with accepted international standards.

Degree Programs in Molecular Biology and Biotechnology

Upon successful completion of *General Degree Program* in MBB the students should:

1. have an extensive understanding in MBB through studying theoretical and experimental details.

2. have a broad knowledge in applications of MBB in solving theoretical and practical questions related to biology.
3. have a working knowledge in using bioinformatic software used in research and industrial purposes.
4. be able to conduct sound literature surveys using printed and electronic resources and present them in scientific manner.
5. possess ability to work as teams, to become leaders when required and work under limited resource conditions as MBB research and industrial operations are often very expensive.

Upon successful completion of *Special Degree Program* in MBB the students should:

1. have an extensive and concrete understanding and working knowledge in MBB through studying theoretical and experimental details.
2. have a specific knowledge in applications of MBB in solving theoretical and practical questions related to biology.
3. have a specific knowledge in using bioinformatic software used in research and industrial purposes and have an ability to work closely with computer scientists and statisticians to develop tools when a necessity arises.
4. be able to conduct sound detailed literature surveys using printed and electronic resources and present them in scientific manner.
5. be able to undertake independent research, gather data, analyze using statistics, interpret and present findings as oral presentations and peer reviewed publications
6. develop skills in scientific writing and oral presentations
7. possess ability to work as teams, to become leaders when required and work under limited resource conditions as MBB research and industrial operations are often very expensive.
8. develop skills that can be used in any other related fields of research, teaching, marketing, management and administration that would broaden the employability in their future chosen fields.

4. FINDINGS OF THE REVIEW TEAM

4.1. Curriculum Design, Content and Review

The Department of Molecular Biology and Biotechnology in the Faculty of Science of University of Peradeniya offers both general and special degrees. Semester based course unit system has been adopted for these degree programs where one academic year consists of 2 semesters and the duration of each semester is adjusted to 15 weeks. Credit values have been assigned to all the courses in the Molecular Biology and Biotechnology (MBB) curriculum in which one credit is equivalent to 15 hours of lectures or 30-45 hours of practicals. These are in compliance with accepted norms by Sri Lankan Universities.

Students who registered to the Biological Science stream of the Faculty of Science required following 6 credits of compulsory foundation courses and specified common courses in

different programs of the departments, conducted jointly by three departments of the Faculty, during their first year. It is compulsory to pass these units. During the first year, Basic Biology, Principles of Chemistry I and II, and Elementary Chemistry Laboratory I and II which are equivalent to 10 credits are compulsory common courses offered for both general and special degree students who intend to enroll in the Molecular Biology and Biotechnology program in their second year. Offering of these foundation and common courses is useful to provide the students with basic knowledge required to follow courses in Molecular Biology and Biotechnology and to give enough confidence to follow courses smoothly so that the students' dropout percentage during their studies could be minimized.

Students who completed their first year are selected for the Molecular Biology and Biotechnology program according to their academic performances in their first year, considering GPA of common courses equivalent to 10 credits. In the MBB program, the Department offers some compulsory courses to give a strong background in the structure and functions of the cell and the cellular contents required to study all biological processes. Inclusion of such courses in the MBB curriculum has strengthened the program to acquire sound knowledge and skills in Molecular Biology and Biotechnology.

Special degree is offered to the students who are selected in their third year according to the academic performance in the previous years. Many courses are included in the curriculum during third and fourth years to give a broad knowledge and skills in Biotechnology. More specific courses are offered to fourth year students to further broaden their knowledge in Molecular Biology and Biotechnology. In addition, students should follow the courses of scientific writing skills and presentation skills. A year-long research project should be carried out by all the students who follow special degree program during their fourth year while following some courses. At the end they should make a presentation and submit a project report on their research work. Though a year-long research project is a strong component in the curriculum, students have no chance to focus solely on their research during this period as they require following few other courses simultaneously, leading to increase the workload during their final year. A format has been given to prepare students' project reports and the reports have been corrected by an internal supervisor, but the final reports have not been authorized. Hence, the team recommends authorizing the reports to get advantages for both students and the department. Industrial training has been recently introduced to the curriculum as an optional course. However, review team discussed about the difficulties of finding places in the field of Biotechnology for industrial training and increasing workload with the introduction of industrial training to one semester in their final year though the inclusion of industrial training has advantages, i.e. job opportunities, skill development and attitude changes etc.

General degree is completed in three years with a total of 90 credits whereas special degree is designed for four years with a total of 120 credits. The Department offers 7 compulsory MBB courses equivalent to 16 credits and 17 compulsory MBB courses equivalent to 40 credits to general and special degree in MBB, respectively. The students are given a freedom to select optional courses from the same department or from the other departments to fulfill their credit requirement for graduation. However, due to the staff restrictions, several of the optional courses are not offered, and therefore practically the flexibility available for students is minimal. Nevertheless the Department is eager to improve this situation with the strengthening of its staff.

Sound content of the curriculum has been strengthened the program which has covered almost all the fields of molecular biology and biotechnology and helpful to achieve its broad aims and objectives. However, in designing of the curriculum, intended learning outcomes for each course should be decided and mentioned in addition to broad aims and objectives of the program. Even if students are provided with handbook of the Faculty of Science in the first day of the commencement of the program, they are not aware about the intended learning outcomes of each course in the program due to the unavailability of such in the handbook or in any other document. The learning outcomes of courses are given in the first lecture of the courses offered by respective lecturer, but there too a consistency is lacking.

Major curriculum revision has not been done during last 5 years. However, minor revisions and inclusion of new courses have been done time to time in order to update the MBB curriculum. These have been done with the outcomes of the informal discussions among the staff members. However, it is advisable to carry out a SWOT analysis with the participation of all stakeholders and revise the curriculum in a proper way to meet country's demands and aspirations.

It was the view of the Review Team that the present status of Curriculum Design, Content and Review adopted by the Department can be judged as GOOD.

4.2. Teaching, Learning and Assessment Methods

Teaching and Learning

Academic, academic support and non-academic staff members in the Department of Molecular Biology and Biotechnology are very much dedicated for smooth conducting of lectures and practical sessions of each and every course to reach their maximum quality. The team understood the difficulty of doing this with limited human and physical resources available in the department.

The department has only three permanent senior lecturers at the moment. They are well trained through undergoing teaching methodology courses and training in foreign institutions, and working as teaching assistants and instructors in foreign universities. Three temporary demonstrators who are appointed from the most recently passed-out batches of MBB degree program are presently working in the department and they support permanent staff for smooth functioning of the academic activities, especially in the practical sessions and field visits. Lectures, practical classes and field visits have been arranged in teaching courses. Student presentations and seminars, tutorials, quizzes and take home assignments are given when necessary, especially to recall previous lessons, evaluation and skills development.

The review team observed two lecture sessions and appreciated the way of delivering lectures efficiently and effectively. Multi-media facilities and white boards are being used to deliver both lectures and the introduction of practicals. Lecturers reasonably encourage students and try to keep the class alive by asking questions. As students are given printed materials on the lecture in advance in most cases, they focus more on the lecture rather than taking lecture notes throughout the session. However, they note down or highlight the important and additional points acquired from the lecture. Teaching and learning environment is excellent though the seats are not so comfortable. However, the lecturers should further improve their teaching abilities suitable to different teaching environments, to different courses and to different target groups. It was the opinion of the review team to introduce peer observation

effectively so that the lecturers could be able to improve their teaching abilities by going through the comments of peers and rectifying the identified areas of weaknesses.

The review team observed two laboratory practical sessions conducted to two groups of students. Introduction on the practical session is given by the lecturer in-charge of the practical before commencing work at the each working place allocated nearly to three students. Demonstrators carry out the practical hereafter under the supervision of the lecturer in-charge. The team appreciated the pre-arrangement of the practical sessions and the active participation of both students and demonstrators. However, it was observed that the laboratory facilities including necessary equipment and tools are not enough. Students should finally submit reports or assignments on the practical.

The review team observed 2 students' presentations. Students have taken every possible effort to do effective presentations in their fields of research by using almost all the presentation facilities. Despite the lecturer in-charges of these presentations are busy with other academic and research work, they have well guided the students in this regard. The review team also had a chance to meet non-academic staff and it was noticed that they work in harmony with both academics staff and students. The team admired their work with limited resources. Furthermore, the department has only one technical officer and a labourer who performs also the duties of laboratory attendant. Their work in the Department is praiseworthy.

Students have to use the common computer and internet facilities in the Faculty with some difficulties. The team also recognized the problems encountered in the use of such common facilities. Hence, these facilities should be developed in the department as soon as possible. It was noted that the Department has already acquired some computers. As the medium of instruction of the MBB program is English, more concern should also be given to the English Language Teaching Unit (ELTU). However, the students are happy about the way of English teaching. In this context, Basic English is compulsory for all the students as a foundation course at the 100 level and students are given opportunity to enroll in following English as an optional subject in their second year too. Those who pass the English at 200 levels are given certificates. However, the team is in the view of suggesting the improvement of both human and physical facilities including establishing a language laboratory in the ELTU.

Students and the staff of the Department use the library of the Postgraduate Institute of Science (PGIS) as the collection of books in the department is not sufficient. However, the books and journals related to the MBB program in the library are lack and no online journals are available. As per the librarian, the usage of the library by students is not satisfactory. Students refer library books mostly when lecturers give assignments. During the examination period too, more students refer library books. Students who especially carry out their research work borrow some important books from the department. Students too are not satisfied about the collection of library books and journals. The review team recommended improving library facilities by purchasing necessary books including text books and journals related to the courses of MBB program, and by increasing the usage of the library by students.

Furthermore, the review team observed other facilities such as Science Education unit, greenhouses and animal houses, spaces for intended tissue culture laboratory and Science Education Resource Centre which are directly or indirectly useful to improve the quality of the program.

Assessment Methods

Academic activities of each student are assessed throughout the semester by ongoing examinations scheduled in each course where students are able to see their progress and weaknesses. It was identified that the quizzes and take home assignments are common ongoing assessments adopted by the department and the results are released without taking much time and the answers are discussed with students so that the students could be able to find proper answers and improve their answering abilities by rectifying weaknesses. In addition to ongoing examinations, midterm and end term examinations are given to assess theory components whereas ongoing practical and end term examinations are given to assess practical components. The highest allocation of marks is given for the end term examinations in the evaluation of both theory (60%) and practical components (80%).

The final year seminar course is assessed by the average of marks given by every staff member of MBB at the seminar presentation according to a prescribed marking scheme. Research work, oral presentation and research report are assessed to allocate marks for the final year research project. The overall academic performance is given by the grade point average (GPA) and the students are awarded honours or classes according to their final GPA.
The review team was informed that the question papers are not moderated by the staff of the department or by outside examiners and no second marking mechanism is operated in any examination. Though the Head of the Department and the staff are confident of holding the examinations smoothly in a proper way without adopting mechanisms for moderation and second marking, the review team was of the view that these mechanisms should be introduced to improve the quality of examination procedures. However, the team admired the transparency of the examinations including making of answer scripts where students are given chance to see their graded answer scripts. Model answers along with marking schemes are prepared to mark answer scripts and interactive discussions are arranged to explain the proper answers for the question papers given in all the examinations.

The team observed the procedure of finalizing and standardization of the final marks and grades of each course. This is done by a three member panel comprised of the Head of the Department, Lecturer in-charge of the course in the department and a senior staff member from another department of Faculty of Science. The final mark sheet is signed by these three members before being sent it to the course unit office. The checked mark sheet will finally be displayed by the department. The team was happy about this procedure of releasing results as it takes only a short time and it is not a complicated procedure.

It was the view of the Review Team that the present status of Teaching, Learning and Assessment Methods adopted by the Department can be judged as GOOD.

4.3. Quality of Students Including Student Progress and Achievements

The Department of Molecular Biology and Biotechnology conducts courses for students enrolled in four undergraduate degree programmes namely, B.Sc. General Degree, B.Sc. Special Degree in Molecular Biology and Biotechnology, B.Sc. Special Degree in Biology and B.Sc. Degree in Applied Sciences. Students for the Molecular biology and Biotechnology study Programme are selected in the second year on the basis of the performance of the prescribed course at 100 – level. At the beginning of the third year, students with high academic standing are selected on competitive basis to follow the Molecular Biology and Biotechnology special degree programme. The students who follow the General Degree Programme will complete the degree programme at the end of the third year. Since the

introduction of MBB Special degree programme a total of 29 students have successfully graduated during 2006 – 2010.

Quality of Students and their Progress

The Department has a very homogeneous group of students, majority coming from the Kandy and Kurunegala Districts. The similar background of students has helped smooth running of the departmental activities in a cordial environment which is important in developing team work. Students are happy with the study programme and the English as the medium of instruction, which has built self confidence in students in the usage of this language. The department attracts the students with high academic ability as evident by the high average Z-scores of the students. The fact that the selection for specialization is done on a competitive basis allows the best students to be enrolled to the B.Sc. Special Degree in Molecular Biology and Biotechnology.

Meetings with the students showed that they follow the study programme enthusiastically with a clear foresight of their future career prospects. Majority of the students plan to engage themselves in postgraduate studies and research. Exposure of students to stepwise organized curriculum which provide basic foundation courses, disciplined related courses and supplementary courses has helped gradual development of the maturity and self confidence of students in a well equipped laboratory, research and learning environment. The final year research project further consolidate the knowledge and practical skills and impart the problem solving ability of the students.

It appears that students are immensely benefitted by the study programme in their competency development. However, it was observed that the involvement of the students in extracurricular activities such as participation in sports, out-reach and career guidance activities to be minimal. It seems that the only existing student society Genome is not eventful. The students were eager to get exposure to a wide range of working conditions and people by developing collaborations with outside organizations

Student Achievement

The meeting with the students, who completed the degree programme in the immediate past, provided evidence to show that they are extremely happy about their progress and achievements. They have already taken step to find placements in foreign universities for postgraduate studies. The tracer studies have shown that the MBB graduates to have very high postgraduate prospects and employment opportunities. Nearly 80% of the MBB graduates have gone to USA/UK/Canada/South Korea/Australia for higher studies and some have been recruited to the permanent academic staff of the faculty. Carrying out final year research projects has provided opportunities for graduate to have research publications to their credit.

All the students of who followed the MBB specialization degree programme have been able to secure a degree with a class. Analysis of the grades obtained for individual courses too indicates the high level of performance of students at examinations indicating very satisfactory progress and achievement of students.

It was noted that there is no formal mechanism in the department to recognize the students having the best performance by way of awarding medals, prizes etc., which would in occasions benefit the career pathways of the graduates.

***In relation to the quality of student progress and achievements, the judgment of the team is* GOOD.**

4.4 Extent and Use of Student Feedback

The department is using different approaches to obtain feed back in satisfactory manner. A well formulated questionnaire is administered to obtain feedback from the students for the purpose of teacher evaluation. The questionnaire consists of 10 questions for teacher evaluation, seven questions on student learning habits and a separate section to write comment and suggestions for improving the course. With respect to the feedback information on course improvement the review team noted that in addition to the written comments obtained, inclusion of a few direct questions would have been more appropriate, since such data can be qualitatively analyzed and more visible. The students show very high regard to the teacher evaluation process as they have seen that actions had been taken in response to their feedback information. Improvement made with regard to conducting tutorial classes is one of such examples cited by the students.

At the end of the year one, the departmental academic staff particularly, the head of the department have frequent informal meetings with the students to assist them in selecting subject combinations. The staff members were on the view that they make use these meetings as an opportunity to get an early feedback on the courses offered by the department. A formal feedback from the 2nd year students are obtained through the application form for applying for specialization programme. Apart from giving the details of the student's academic performances the students are expected to give details on their academic and career aspirations when applying for the specialization. The meetings with the academic staff revealed that they are very conscious about the students' aspirations and concerns stated in these feedback reports.

The academic staff members have very close contact with the specialization students. As a result the academic staff has knowledge of the future career aspirations and backgrounds of each and every specialization student. However, there is no formal forum available for students to discuss and present common issues of the students at the departmental level. It was quite apparent that the students had little awareness even on the student representation in the Faculty Board. At the discussion with the students both undergraduates and postgraduates they implied the need for formal student-staff consultative meetings to discuss the common matters of interest relating to the departmental study programmes such as possibility of getting services of visiting lecturers and developing inter-departmental and outside collaborations etc.

***In relation to the Extent and Use of Student Feedback, the judgment of the team is* GOOD.**

4.5. Postgraduate Studies

Postgraduate studies; research and teaching, in Sciences in The University of Peradeniya is coordinated and administered by Postgraduate Institute of Science (PGIS), which is in operation since 1996. The Department of MBB contributes PGIS through conducting courses and research under the Board of Study in Biochemistry and Molecular Biology. It was noted that senior lecturers of the Department of MBB are engaged in teaching in M.Sc. programmes under the Board of Study in Biochemistry and Molecular Biology and other boards of study as well, in addition to supervision of M.Phil. and Ph.D. research. A significant number of M.Sc. students have completed their basic degrees in India.

All staff members have been successful in securing funds from the University of Peradeniya, National Research Council and National Science Foundation. It is noteworthy that Department of MBB carries out research in collaboration with other Departments, Faculties and external institutes such as Rice Research Institute.

In addition to research supervision, Department of MBB also provides laboratory facilities for research. Ten M.Sc. students, five M.Phil. students and two Ph.D. students enrolled under different Boards of Studies are presently carrying out their research in the laboratories of the Department of MBB.

The undergraduate students mentioned that the presence of the postgraduate students in the Department is an encouragement to them and PG students help UG students in various ways. This undoubtedly contributes to the quality improvement of UG students. The experience, skills and knowledge gained by the staff by teaching and supervision of PG students are also significant in this.

Cold room facility is not available in the Department. The staff and the PG students expressed their concern about difficulties they face without this facility. Although the Department has collaboration with other laboratories, The PG students mentioned that the resources sharing with other laboratories should be improved through developing close collaboration. Accessibility to computers with internet connectivity is insufficient, but the Department is in the process of improving with the provision of hotspots for internet access with the recently acquired computers. The Faculty computer unit also provides easy access to internet.

Although the Department has only a limited number of staff and also give a major emphasis on UG teaching, its contribution to postgraduate research and teaching is commendable.

In relation to the postgraduate studies the judgment of the team is GOOD.

4.6. Peer Observation

The review team found that the academic staff members are very keen on the need for enhancing the quality of teaching. A good mechanism to evaluate teachers by peers using a peer evaluation form is in place. The format contains criteria to evaluate the preparation and planning, class management, teaching and communication techniques use of resources and sensitivity of the students learning process. Peers irrespective of the designation have participated for the observations and have given qualitative comments for the given criteria.

During the discussion with the academic staff the review team noted that comments made by peers have been attended by the lectures and they perceive the peer observation process to be useful.

The temporary demonstrators and the postgraduate research students who involve in teaching are continuously being observed and guided by the senior members.

The fact that presently the department has only three permanent members has made holding of departmental meeting only when and where necessary. Issues related to sharing good practices, improvement of the quality of teaching are constantly being discussed among members through informal contacts with a sense of coherence.

The incorporation of the views of the external peers could be obtained to improve the quality of teaching and the study programme by implementing paper moderation and second marking of answer scripts by external experts. Currently, this is not happening at the department.

***In relation to the Peer Observation, the judgment of the team is* GOOD.**

4.7. Skills Development

This section had not been incorporated into the SER. The Department provided this information as an addendum to the SER (Annexure 5) during the site visit on the request of the reviewers.

Several course units are specially designed to inculcate various skills in students. Some of these courses are foundation courses and students are required to pass these units in order to qualify for the award of the Degree. The MBB students should pass Basic English, Computer applications, Mathematics for Biological Sciences and Introduction to Science and Society. The English language skills are generally good in all MBB students. As mentioned elsewhere in this report, the students form a homogenous group coming from urban setup. This background together with the English courses conducted by the English Language Teaching Unit and also English being the medium of instruction can be pointed out reasons for this. In addition a Certificate Course in English is also available.

Bioinformatics is a course that requires skills of handling a computer. Proposal writing and Seminar improve the ability of writing and presentation. Research project is another opportunity for the students to improve their critical thinking, planning, literature search, summarization and communication.

There are several other course units which improve different skills of the students. There is a basket of supplementary courses, of which a maximum of 12 credits can be accumulated from these for the final GPA. These include Economics, Management, Science education and scientific writing. These courses give basic skills in the respective fields.

The molecular Biology Association (Genome) is another arena where students improve their group activities, leadership qualities and social integration. Nevertheless this society does not seem to function very actively.

Career Guidance Unit organizes many workshops and other programmes which develop skills of the students on request. This Unit extends its services to outside organizations as well. However, it is surprising to observe that students who follow MBB were not aware of activities of CGU. It is also disappointing to note that students are ignorant about the happenings around them, not to speak about what is happening in larger society. They did not know that there are students representatives in the Faculty Board to voice their grievances and suggestions. They had not taken active participation in social activities. This kind of approach by students, despite following courses designed to improve skills, hampers the fulfilling of expectations of the society in general and employers in particular.

Being in a homogenous group is also not healthy in development of a well rounded graduate, although it helps in smooth running of the programme.

***In relation to the Skills Development, the judgment of the team is Satisfactory*.**

4.8. Academic Guidance and Counseling

It was noticed that the all academic staff members are acting as counselors though they are not officially appointed. In general, Head of the Department acts as the academic counselor. The Faculty Handbook and the University website provide the students with sufficient information about the courses and rules and regulations adapted to both University and Faculty. Staff members guide students for planning and adjusting their academic activities from the first day of their entrance to the university. When new students enter to the Faculty of Science, especially during the orientation program, each department describes the prospects and gives other necessary information about the academic program. During the orientation periods, introductions about the career guidance are given by career advisor in addition to the academic guidance given by the administrative and academics in the Faculty and each department. Faculty Handbook is made available to the students before they start academic sessions.

Students are also encouraged to discuss their difficulties in the academic program and in personal matters. Special advice sessions are arranged when the students require assistance in selecting courses and course combinations. ELTU coordinator and her staff are also engaged in counseling for some extent, especially during the first year. All permanent academic staff members in the department have been given proper trainings through training programs and workshops organized by the University. However, the review team recognized that students need further assistance in both academic guidance and counseling. The students know little about such guidance and do not know about counseling and career guidance. Further students do not aware about the fora arranged to discuss academic matters in the university or in the faculty or in the department, i.e. Faculty Board, Senate etc.

Student organizations such as “Genome” and other outreach activities to improve social harmony are important activities guided by the senior students and the staff. A senior student counselor appointed by the Vice Chancellor is available in the Department of MBB. The review team understood that though some students with severe counseling issues are referred to the professional counselors in the Career Guidance Unit of the University, a communication gap between this unit and the Faculty exists so that the students are not aware about this unit and the importance of the unit. Hence, it is advisable to improve intimate connections with the career guidance unit by organizing workshops, job fairs, discussions and so on. Examination stresses and other worse cases are referred to Health Centre of the

University and these cases are regularly followed up till they get improvements. However, the team is in a view that the department should establish an organized mechanism for both academic guidance and counseling to address students' matters pertaining to their academic and personal life during the University.

It is the view of the Review Team that the present situation with regard to Academic Guidance and Counseling adopted by the Department can be considered as GOOD.

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	Good
Teaching Learning and Assessment Methods	Good
Quality of Student including Student Progress and Achievements	Good
Extent and Use of Student Feedback	Good
Postgraduate Studies	Good
Peer Observation	Good
Skills Development	Satisfactory
Academic Guidance and Counseling	Good

5. CONCLUSIONS

1. Curriculum Design, Content and Review

Strengths/ Good Practices

- Offering of the foundation and common courses is useful to provide the students with basic knowledge required to follow courses in Molecular Biology and Biotechnology.
- Students are confident to follow courses in the MBB program smoothly due to the following of foundation and common courses initially so that the students' dropout percentage during their studies is low.
- Inclusion of compulsory courses in the MBB curriculum has strengthened the program to acquire sound knowledge and skills in Molecular Biology and Biotechnology.
- The students are given a freedom to select optional courses from the same department or from the other departments to fulfill their credit requirement for graduation.
- A year-long research project is a strong component in the curriculum.
- Sound content of all the fields of molecular biology and biotechnology in the curriculum has been strengthened the program and helpful to achieve its broad aims and objectives.

Weaknesses

- Students have no chance to focus solely on their research as they require following few other courses simultaneously, leading to increase the workload during their final year.
- Due to the staff restrictions, several of the optional courses are not offered, and therefore practically the flexibility available for students is minimal.
- Students are not aware about the intended learning outcomes of courses in the program due to the unavailability of ILOs of each course in the curriculum.

Overall judgment: **Good**

2. Teaching, Learning and Assessment Methods

Strengths/ Good Practices

- Academic, academic support and non-academic staff members in the Department of Molecular Biology and Biotechnology are very much dedicated for smooth conducting of lectures and practical sessions
- Student presentations and seminars, tutorials, quizzes and take home assignments are given when necessary, especially to recall previous lessons, evaluation and skills development.
- As students are given printed materials on the lecture in advance in most cases, they focus more on the lecture rather than taking lecture notes throughout the session.
- Non-academic staff works in harmony with both academics staff and students.
- It was observed the transparency of the examinations including making of answer scripts where students are given chance to see their graded answer scripts.
- The procedure of releasing results with a three member panel is a good practice as it takes only a short time to release results and it is not a complicated procedure.

Weaknesses

- The team understood the difficulty of teaching with limited human and physical resources available in the department. The necessary laboratory equipment and tools are not enough.
- The books and journals related to the MBB program in the library are lack and no online journals are available.
- The question papers are not moderated by the staff of the department or by outside examiners and no second marking mechanism is operated in any examination.

Overall judgment: **Good**

3. Quality of Students Including Student Progress and Achievements

Strengths/ Good Practices

- High z-score of students
- High prospects for postgraduate studies and employment
- Good command in the English language
- Good research and presentation skills
- High performance in examinations
- Good rapport between students and staff is maintained.

Weaknesses

- Insufficient involvement of students in extracurricular activities
- Lack of exposure of students to career guidance programmes
- Lack of interest of student in common student issues.
- Lack of exposure of students to wider range of working conditions and people.

Overall judgment: **Good**

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

Strengths/ Good Practices

- Well established teacher evaluation process is in place
- Close staff-student relationship

Weaknesses

- No formal mechanism to represent students at departmental/faculty level meetings
- Inadequate practices for course evaluation.

Overall judgment: **Good**

5. Postgraduate Studies

Strengths/ Good Practices:

- The staff contributes significantly to teaching and research supervision in programmes conducted by PGIS
- Shares resources with PGIS and other Departments and Faculties
- Collaborates with other research institutes
- All academic members have received research grants
- Facilities for research available

Weaknesses:

- Cold room facility, which is essential for the types of research conducted is not available
- Postgraduate students feel collaboration with other laboratories, within and outside the University is inadequate
- Insufficient academic and other cadre

Overall judgment: **Good**

6. Peer Observation

Strengths/ Good Practices

- A good mechanism for peer evaluation is in place
- Proper guidance of academic supporting staff by senior staff
- Academic staff has frequent informal discussion with a sense of coherence.

Weaknesses

- Questions papers are moderated only by the Head of the Department
- Answer scripts are not subjected to second marking.

Overall judgment: **Good**

7. Skills Development

Strengths/ Good Practices

- Students are form urban areas and therefore English and communication skills are good
- A large number of credits available from outside the main discipline of study
- Several subject related course units also provide specific skills such as communication, IT, writing, literature search etc.
- Majority of students who followed special degree has secured good employment or postgraduate placements, both locally and abroad

Weaknesses

- Students are homogenous group
- Extracurricular activities are minimal
- Assistance of Career Guidance Unit is not utilized
- The Molecular Biology Society is not functioning effectively
- Students attitudes towards social responsibilities seems poor

Overall judgment: **Satisfactory**

8. Academic Guidance and Counseling

Strengths/ Good Practices

- It was noticed that the all academic staff members in the department and ELTU coordinator and her staff are acting as counselors though they are not officially appointed.
- The Faculty Handbook and the University website provide the students with sufficient information about the courses and rules and regulations adapted to both University and Faculty.
- During the orientation periods, introductions about the career guidance are given by career advisor in addition to the academic guidance given by the administrative and academics in the Faculty and each department.
- Special advice sessions are arranged when the students require assistance in selecting courses and course combinations.
- All permanent academic staff members in the department have been given proper trainings on counseling through training programs and workshops organized by the University.
- The review team understood that though some students with severe counseling issues are referred to the professional counselors in the Career Guidance Unit of the University.
- Examination stresses and other worse cases are referred to Health Centre of the University and these cases are regularly followed up till they get improvements.

Weaknesses

- The students know little about academic guidance and do not know about counseling and career guidance.
- The students do not aware about the fora arranged to discuss academic matters in the university or in the faculty or in the department, i.e. Faculty Board, Senate etc.
- A communication gap between the career guidance unit and the Faculty exists so that the students are not aware about this unit and the importance of the unit.

Overall judgment: **Good**

6. RECOMMENDATIONS

1. Curriculum Design, Content and Review

- The team recommends authorizing the research reports prepared in the final year to get advantages for both students and the department.
- Both academic and non academic staff should be increased.
- Intended learning outcomes for each course should be decided and mentioned in addition to broad aims and objectives of the program.
- It is advisable to carry out a SWOT analysis with the participation of all stakeholders and revise the curriculum in a proper way to meet country's demands and aspirations.

2. Teaching, Learning and Assessment Methods

- It was the opinion of the review team to introduce peer observation effectively so that the lecturers could be able to improve their teaching abilities by rectifying the identified areas of weaknesses.
- However, the team is in the view of suggesting the improvement of both human and physical facilities including establishing a language laboratory in the ELTU, library facilities and laboratory facilities.
- The review team recommended improving library facilities by purchasing necessary books including text books and journals related to the courses of MBB program, and by increasing the usage of the library by students.
- The review team was of the view that the mechanisms of moderation of question papers and second marking of answer scripts should be introduced to improve the quality of examination procedures.

3. Quality of Students Including Student Progress and Achievements

- Expose students for career guidance activities.
- Improve awareness of students on the administrative structure, governing principles and university act and by-laws etc;.
- Expose students to wider range of working conditions and people.
- Expand the audience of the students' research presentations
- Make the Genome society more eventful.
- Recognize the best performing students with awards

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

- Introduce a mechanism or restructure the teacher evaluation questionnaire to obtain the student feedback on course content and delivery.
- Streamline the pathway of collecting, analyzing and conveying the results of the feedback information.
- Develop a mechanism to encourage the academic staff to monitor the progress of the use of student feedback information
- Establish a formal channel such as student-staff consultative meeting to entertain requests of the students.

5. Postgraduate Studies

- Improving staff strength is highly desirable
- Collaboration with laboratories with research facilities in molecular biology will improve the scope of research activities

6. Peer Observation

- Regularize the departmental staff meetings
- Encourage the involvement of external peers
- Scrutinize the question papers and answer scripts by appointing moderators and second examiners

7. Skills Development

- Programmes/ activities to improve soft skills is desirable
- Liaison with CGU is encouraged
- Development of a curriculum map to systematically address generic skills is suggested

8. Academic Guidance and Counseling

- It is advisable to improve intimate connections with the career guidance unit by organizing workshops, job fairs, discussions and so on.
- The team is in a view that the department should establish an organized mechanism for both academic guidance and counseling to address students' matters pertaining to their academic and personal life during the University.

7. ANNEXES

Annex1. AGENDA FOR THE REVIEW VISIT

Day 1, 5th December

8.00 -9.00 - Private meeting of Review panel with QAA council representatives
9.00 -9.30 - Meeting with VC, Dean and Head of Department
9.30- 10.00- Discuss the Agenda for the Visit
10.00-10.30 - Tea
10.30-11.30- Department Presentation on the Self Evaluation Report
11.30-12.30- Discussion
12.30-13.30- Lunch
13.30-14.00- Observing Department Facilities
14.00-14.30- Observing teaching (lecture)- Dr. PS
14.30-15.30- Observing other facilities (within the Faculty)
15.30-16.00- Tea
16.00-17.00- Meeting with Undergraduates
17.00-18.00- Brief meeting of Reviewers

Day 2- Tuesday, 6th December

9.00-10.00 - Meeting with academic staff
10.00-10.30- Observing teaching- Practical (Dr.SR)
10.30-11.00- Tea
11.00-11.30- Meeting with technical staff and other non academic staff
11.30-12.30- Meeting with postgraduate students
12.30-13.30- Lunch
13.30-14.00- Student presentation
14.00-15.00- Observing documents
15.00-15.30- Observing lecture(DR. SR)
15.30-16.00- Tea
16.00-16.30- Meeting with special students
16.30-17.00- Meeting of Reviewers

Day 3- Wednesday, 7th December

9.00-10.00- Observing other facilities in the University (outside the Faculty)
10.00-10.30- Tea
10.30-11.00- Academic guidance and Counseling-core aspect meeting
11.00-11.30- Reviewers private meeting
11.30-12.00- Meeting with Head of Department and Staff for reporting
12.00-13.00- Lunch
13.00-17.00- Report Writing

Annex 2. LIST OF DOCUMENTS OBSERVED

Quality of Students including Student Progress and Achievements

- Application for General/Special Degree Programme
- Student selection
- Current enrolment status (Gender, A/L Z score, demographic details)
- Assigning final year research projects
- Grades of past students
- Publications by students (abstracts in conference proceeding)
- Achievements by past MBB Special Students

Academic Guidance & Counseling

- Senior student counselor appointments
- Advising students about selection of courses
- Introductory talk to New Comers about the Degree programme in MBB
- Training received for counseling
- Recommendation letters issued to students

Teaching, Learning and Assessment methods

- Assessment scheme
- Marking schemes
- Detailed grading sheets
- Department minutes
- In course presentations

Curriculum Design, Content and Review

- Programme/ Course information
- Detailed module information
- University/Faculty regulations applicable to the programme
- Teaching, Learning and Assessment strategy
- Minutes of meetings that include discussions on curriculum matters

Skills Development

- Courses offered by the Faculty related to skills development
- Evidence of employer views on skills development
- Handouts provided to students
- Final year research project presentations and reports

Peer Observations

- Description of the Department procedure for peer observation
- Format of peer observation
- Sample peer observations forms

Academic staff

- Qualifications
- Visiting teaching appointments
- University/Faculty sub committees
- Research collaborations

- Recent research grants obtained
- Recent research publications
- Reviewing papers and project proposals
- Participation as resource persons

Extent of student Feedback, Qualitative and Quantitative

- Analysis of student feedback and sample responses
- Course instructor evaluation sheet (Common format used by Faculty of Science)
- Training received by academic staff on teaching methodology

Postgraduate Studies

- Summary of postgraduate student numbers
- M.Sc. in Experimental Biotechnology
- Appointment of research project supervisors
- Selected minutes of meetings of Board of study in Biochemistry & Molecular Biology, PGIS
- Selected publications of postgraduate students

Other

- Faculty Handbook/ Course Unit
- Faculty Cooperate Plan
- Question papers and answer scripts
- Handouts, Lecture notes (Power Point Presentations)
- Handouts for laboratory practical classes
- Faculty Board minutes
- Feedback of students/ Evaluation of teacher performance by students
- Information on postgraduate studies, Research, Thesis, etc
- Students Thesis/ Project work

Annex 3. LIST OF FACILITIES OBSERVED

Lecture theaters
Laboratories and equipment
Animal and Plant houses
Facilities at PGIS
Faculty library
English Language Teaching Unit
Faculty Computer Unit
Career Guidance Unit
Student canteen
Course Unit Office

Annex 4. LISTS OF ATTENDANCE FOR MEETINGS

Subject Review Process
Department of Molecular Biology & Biotechnology
Faculty of Science
University of Peradaniya

Department Presentation on the Self Evaluation Report
Date – 05/12/2011 Time- 10.30 am – 12.30 pm

Attendance

Name	Signature
P. Janaththani.	P. Janaththani
H.H.M.A.U. Herath	
P.S.N. Perera	
Dr. P. Senanayake	
R.G.S.C. Rajapakse	

05/12/2011 Meeting with Gen. Degree Students

	Name	Registation No	Signature
1)	DASSANAYAKA D.H.A.I	S/09/167	
2)	Pothuhera I.S.A.S.	S/09/104	
3)	Weerasinghe D.S	S/09/166	
4)	Thaksala W.N.	S/09/145	
5)	Yatawara C.D.K	S/09/222	
6)	Senanayake S.M.N	S/09/219	
7)	Pathirana N.U.K	S/09/232	
8)	Rathnayake R.R.M.W.L.	S/09/170	
9)	NAJLA M.M.F.	S/09/182	
10)	Jazeela M.A.G.F	S/09/197	
11)	Kansul Fathuma M.K.	S/09/183	
12)	Mazeera M.N.N.	S/08/111	
14)	Rajamanthri R.G.I.K.K.	S/09/173	
15)	Purijjala P.W.C.M	S/09/202	
16)	Edirisuriya C.S.W	S/09/036	
17)	Hemamali H P E H	S/09/216	
18)	Siriwardhana D M	S/09/214	
19)	Boyagoda E.M.S.S.K	S/09/172	
20)	Abeyrathna P.M.C.S	S/09/230	
21)	Amaraselcara N.R.	S/09/007	
22)	Abeyasuriya K.G.T.N	S/09/003	
23)	Gamage U.I.C	S/09/045	
24)	Weerasooriya C.J.	S/09/156	
25)	chandrasekara C.M.B	S/09/226	
26)	Dissanayake D.R.R.P.	S/09/033	
27)	Nenapala P.G.R.G	S/09/250	
28)	Aviruppola A.J.M.K.A.	S/09/012.	
29)	Disanayake E.D.A.M.A.M	S/09/244	
30)	Bandara K.M.U.J	S/09/178	
31)	Priyadarshani K.G.M.	S/09/221	
32)	Thahani Shifna H.M	S/09/194	
33)	Fernando H.N.K.	S/09/042	
34)	Karannagoda N.N.H.	S/09/068	

35)	Dissanayake M.D.M.I.M.	S/09/034.	Indeewari
36)	Silva T.H.S.E	S/09/140	T.H.S.E. Silva.
37)	Perera W P G D	S/09/103	Gayathri
38)	Hettiarachchi H.A.E.U.	S/09/058	
39)	S.S.C Amarasekera	S/09/008	
40)	F. Ghasneem Banu	S/09/015	
41)	M.S.M. Zayan.	S/09/247.	
42)	A.N Thudugala	S/09/148	
43)	Gunarathne R.M.V.N.	S/09/200	Viraj.
44)	Suraweera C.D	S/09/205	
45)	Jayasooriya J.A.I.U.	S/09/061	
46)	Kularathna K.W.T.R	S/09/073	
47)	Jayakody M.M	S/09/171	
48)	Bulathge A.W.	S/09/023	
49)	Walpolapitiya W.Y.M.W.W.U	S/09/243	

Name	Reg. No	Signature
1) B.A.D.H. Beligala	S/07/008	
2) R.M.I.U. Ranaweera	S/07/135	
3) B.K.I.D. Biyanvila	S/07/198	
4) D.M.M.P.K. Weerarathna	S/07/184	
5) A.M.A.Y. Atahakoon	S/07/142	
6) B.J.G. Jayawardhana	S/07/054	
7) T.N. Premachandra	S/07/094	
8) K.N.K. Ranasinghe	S/07/099	
9) U.G.S.L Ranasinghe	S/07/101	
10) M.R.P. Hasanga	S/07/177	
11) M.D.M. Chamikova	S/08/029	
12) V.D.W Kasthuriarachchi	S/08/096	
13) S.S Karunadasa	S/08/095	
14) W.M.A.T Wijayabahu.	S/08/194	
15) M.K.D.T. Perera	S/08/133	
16) R.R.R.G.P.I. Rajapaksha	S/08/214	
17) R.V. Leiwala	S/08/101	
18) U.S. Gunaratne	S/08/065	
19) M. Ishan	S/08/944	

06/12/2011 - Meeting with Postgraduate Students

	Name	MSc/MPhil/PhD	Supervisor	Signature
1.	K.M.P. Karunarathne	Mphil	Dr. Preminda Samaraweera	
2.	M.H.B.C. Tissera	M.Sc.	Dr. Preminda Samaraweera	
2	H.B.D Geeganthe.	MSc	Dr Soneth Sooriyapathirana	
3	Sivaramanan	MSc	Dr. Preminda Samaraweera	
4.	K.M.C.C.D. Bandara.	M.Phil.	Dr. Sanath Rajapakse, & Prof. K.M.G. Rajapakse	
5.	Y.e. Alawihare	PhD	Dr Saneth Sooriyapathirana	
6.	L.R.T Fernando	Msc.	Dr. Preminda Samaraweera	
7.	A.M.T.K Bandra	M Phill	Dr sanath Rajapaksha	
8.	Lalith Ekanayake	Ph.D	Dr. Preminda Samaraweera	

Meeting with Demonstrators / Alumni -

Name	Signature
1. P. Jonathithani.	P. Jonathithani
2. H.H.M.A.U. Herath	Alumni.
3. P.S.N. Perera	

Meeting with Academic Councellors and Student counsellors.

07/12/2011

1. Vajra Senevirathne.
2. V. Sivakumar
3. W.A.I.P. Karunaratne
4. Y.P.R.D. Yapa
5. A A S Perera
6. R.L.R. Chandrajith.

Annex 5. ADDENDUM TO SER

Addendum to the Self Evaluation Report, September, 2011

4. Curriculum design, content and review

4.3 Curriculum revision.

4.3.1 Molecular Biology and Biotechnology was introduced in the Faculty as a principal subject for the B.Sc. General Degree program in 1998.

4.3.2. With turning into the semester-based course unit system, the molecular biology curriculum was revised in 2002.

4.3.3. In 2005, the second major revision of the curriculum was made introducing the B.Sc. Special Degree in Molecular Biology and Biotechnology. The revisions were made taking in to consideration the recommendations of Prof. S.K. Ballal of the Tennessee Technological University, USA, a visiting Fulbright Scholar in the department during the time period.

4.3.4 A new courses MB441 Special Topics in Cell and Molecular Biology was added to the curriculum to accommodate some important and advancing subject areas not covered in the existing courses.

4.3.5 Introducing a new course to the curriculum is a long process. Thus, after informal discussions, members of the departments often incorporate new developments into existing courses in a manner that does not the affect the major content and objective of the course.

12. Skills Development

A variety of methods have been adopted to develop and enhance the skills of the undergraduate students

12.1 All the students entering the faculty are required to pass CS100 Computer Applications and EN100 Basic English. In addition, all the incoming students of the biology stream are required to pass MT100 Mathematics for Biological Sciences whereas all physical sciences students are required to pass BL100 Basic Life Sciences. All students are also required to pass SE100 Introduction to Science and Society.

12.2 The medium of instructions and examinations of the Faculty of Science is English.

12.3 The Faculty offers EN200 Certificate Course in English, an optional course to all the students to enhance their English language skills.

12.4 Two Economics courses EC201 and EC202 with a total credit value of 5, two Management courses MG201 and MG201 with a total credit value of 4 and six Science Education courses SE201, SE202, SE301, SE302, SE303 and SE310 (Introduction to Scientific Writing) with a total credit value of 12 are offered to students under the

category called ‘Supplementary Courses’. Students have the option of taking up to 12 credits of supplementary courses to complete their credit requirement.

12.5 The department encourages the students to enroll in courses, both lecture and laboratory, offered by the other departments of the Faculty. In this regard, the members of the department help the student in selecting the courses according to their interests and career objectives.

12.6 Laboratory course and courses with laboratory component are designed for students to obtain knowledge and skills in various laboratory techniques in molecular biology and related fields.

12.7 Many upper level courses require literature search and presentation of the findings in the class.

12.8 In MB326 Bioinformatics students are expected to acquire IT skills and its applications in life sciences. MB471 Proposal Writing has been designed to improve technical writing skills of students whereas MB495 Seminar trains the students to search information about specific topic and present the finding in a manner acceptable to scientific community.

12.9 MB499 Research Project is expected to develop students’ research competence, critical evaluation of problems, finding solutions and presentation of the finding in a scientific manner.

12.6 The Molecular Biology Association of the department and other societies in the university give the students the opportunity to develop their interpersonal skills, organizational ability, team work, and also, respect for each other.