SUBJECT REVIEW REPORT

DEPARTMENT OF COMPUTER SCIENCE

FACULTY OF SCIENCE
UNIVERSITY OF RUHUNA

20th to 22nd April 2010

Review Team :

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1. SUBJECT REVIEW PROCESS

University accountability for quality and standards is a key factor required to promote and safeguard public confidence in higher education. As higher education in Sri Lanka is a public good, universities must conscientiously exercise their responsibility for quality and standards. The subject review is one of the components of the external quality assurance programme carried out in Sri Lankan universities. It evaluates the quality of education within a specific discipline. It is focused on evaluating the student learning experience, student achievements and the teaching-learning process. It is understood that the final responsibility for quality and standards remains within the institution itself, since it alone has the powers to control and to change existing practices.

Key features of the subject review process include the critical analysis of the Self Evaluation Report (SER) prepared by the academic department concerned, peer observation of teaching, observation of documents, observation of the facilities available, and gathering information on activities towards quality assurance through discussions with as many stakeholders as possible.

Subject review process at the Department of Computer Science, Faculty of Science of University of Ruhuna was conducted following the guidelines provided in the Quality Assurance Handbook for Sri Lankan Universities, published by the the Committee of Vice-Chancellors and Directors (CVCD) and the University Grants Commission in July 2002. The quality of education was reviewed according to the aims and learning outcomes given in the SER of the Department.

The following eight aspects of education were reviewed at the Departmental level:

- Curriculum Design, Content and Review
- Teaching, Learning and Assessment Methods
- Quality of Students including Student Progress and Achievements
- Extent and Use of Student Feedback , Qualitative and Quantitative
- Postgraduate Studies
- Peer Observations
- Skills Development
- Academic Guidance and Counselling

The review team consisting of the following members conducted the review from April 20 to 22, 2010.

- Dr. Sanath Jayasena (Senior Lecturer, University of Moratuwa)
- Dr. Dayan Rajapakse (Chief Executive Officer, E-Soft Pvt Ltd)
- Dr. Gamini Wijayarathna (Senior Lecturer, University of Kelaniya)
- Dr. Prasad Wimalaratne (Senior Lecturer, University of Colombo School of Computing)

On 20th April morning, the Quality Assurance Specialist of the QAAC briefed the review team about the quality assurance process and writing of the review report. The agenda of the three-day visit was discussed and finalized with the Head of the Department (Annex 1).

During period of review, the review team met the Vice Chancellor, the Deputy Vice Chancellor, the Dean of the Faculty of Science, Head of the Department, academic staff of the Department of Computer Science, support staff, students etc. The list of persons met is given in Annex 3.

During this visit the review team was able to observe teaching in classrooms and laboratories. The team also examined the facilities available for teaching and learning. These included the lecture theatres, teaching laboratories, equipment, library, facilities for sports etc.
Several documents were also perused. These included the structure and curriculum of study programmes, documents pertaining to curriculum revision, lists of examiners, assessment criteria, student feedback forms, peer observation forms, faculty prospectus, question papers, marking schemes, answer scripts, etc. The list of the documents examined is given in Annexure 2.
On 22nd April, the review team gave a feedback of the findings to the Head of the department and other members of the academic staff.
After the review visit, this report was prepared incorporating the findings of the review team. In the report, the strengths, good practices and the weaknesses are highlighted together with recommendations. Each aspect has been given a judgement of good, satisfactory or unsatisfactory. The draft report will be sent to the Department and the feedback will be obtained. If there is disagreement with any judgement, it would be resolved by the Quality Assurance & Accreditation Council (QAAC) through discussion. Then the report will be submitted to the Standing Committee on Quality Assurance of the UGC for approval. After its approval, the report will be published in the QAAC Website, www.qaacouncil.lk. The Department should take action to improve the quality of the aspects that receive a judgement of unsatisfactory within six months of approving the judgements by the Standing Committee on Quality Assurance of the UGC.

2. BRIEF HISTORY OF THE UNIVERSITY, FACULTY AND DEPARTMENT

Following its humble beginning in 1978 with four faculties, Agriculture, Arts, Medicine and Science, with about 40 academics, 50 non-academics and 275 students, the University of Ruhuna has made great strides in the past thirty years in the academic, research and out-reach spheres, achieving enviable growth in academic stature and intellectual and infrastructure resources. Presently, it has seven faculties including Faculty of Engineering, Faculty of Medicine, Faculty of Agriculture, Faculty of Science, Faculty of Humanities & Social Sciences, Faculty of Management & Finance and Faculty of Fisheries, Marine Science & Technology.
A total of 272 students were enrolled for the bachelors' degree programmes during the first academic year (1978/79) and at the commencement of the academic year 2006/07, it has increased to 6752 for all faculties.

Vision

> "*The vision of the university is to be an outstanding academic center of excellence which proudly affirms its Sri Lankan identity and which is committed to rigorous, scholarship, academic freedom, high moral values and social responsibility. "*

Mission

> " *The mission of the university is to produce outstanding internationally accredited graduates who are innovative, analytical, articulate, balanced and adaptable with lifelong of learning and to strive through quality teaching, research and community service and to contribute to the advancement scholarship and enrichment of the educational, cultural, economic and natural environments of the society we serve*."

Faculty of Science

The faculty of Science consists of the departments of Botany, Chemistry, Computer Science, Mathematics, Physics and Zoology. In addition, there is a Computer Unit which caters to the needs of the faculty, and the University in general. The faculty offers undergraduate courses leading to the Bachelor of Science (B.Sc) general degree of three years duration and B.Sc (special) degree of four year duration. The undergraduate programme comprises of a large number of course units offered by individual departments. The faculty also offers postgraduate degree programmes leading to the M.Sc, M.Phil and Ph.D.

Department of Computer Science and Computer Unit

The Department of Computer Science (DCS) of the University of Ruhuna was established in 1997 fulfilling a long-standing need of the University. The Ruhuna University Computer Unit (RUCU) was established more than 25 years ago and both DCS and RUCU are functioning as a common body to achieve their goals. The Computer Unit initiated and submitted a proposal to establish the Department of Computer Science in 1996.

Undergraduate Courses offered for Students

The Department of Computer Science presently offers Computer Science as a subject for the BSc general degree and several optional courses for the students of the faculty of Science. Although the department was of the view to introduce more degree programmes and courses, it was not possible due to lack of facilities, mainly due to insufficient building space. Now they are getting a solution to this problem and the phase 1 of the new building for the department and unit is in near completion.

The Computer Unit offers several optional courses for students who do not follow Computer Science as a subject and provides many services to the entire university community. The department also offers regular training programmes for the staff in the university in order to uplift their computer literacy. The Department and the Computer Unit have also been providing services and courses in Information Technology to the community outside the university to fulfill the needs of the government and the private sector as the main hub of Information Technology in the Southern region of Sri Lanka. The Department of Computer Science and the Computer Unit are functioning as a common body to achieve their goals.

Network and Internet Services

The Computer Unit and the department of Computer Science, offer many Computer and Information Technology-related services such as maintaining and upgrading Fiber Optic Backbone, providing Email, Web, LMS, VOIP, Video Conferencing and other Internet services, Computer Maintenance, designing and handling the departmental Local Area Networks (LAN) and providing consultancy at the IT-related activities to the whole university community and other government and private sector organizations.

Since the early 90's, the Computer Unit has provided the university community with the vital service of electronic mail. In 1999, the Computer Unit submitted a proposal to the Swedish International Development Agency (SIDA) to receive funding for the IT infrastructure and staff development. By using the SIDA funding, the university fiber backbone network was set up in 2001. Since 1997, the Department and the Computer Unit have been involved in designing, implementing, monitoring and expanding the university network. In 2007, the local bandwidth was upgraded from 2 Mbps to 10 Mbps. The director of the Computer Unit works as one of the director for the LEARN Association by representing the university of Ruhuna and helps to upgrade the network bandwidth in 3 other faculties.

Apart from the network infrastructure development, the department has been involved in providing numerous Internet and network services to the entire university community. During the period 1993 –1995, the Email server and the web server were established and since then the department and the Computer Unit have been involved in maintaining the university mail servers and web servers, providing video conferencing facilities, setting up of VOIP gateway and web casting university convocation. Furthermore, the Computer Unit involves in setting up and maintaining mailing lists for the staff of the university and the Vice Chancellor of the university has taken a decision to send messages through mailing lists, starting from January 2010 in order to reduce paper based communication among the staff. By using IRQUE funds, the university fibre backbone was extended up to the Vice-Chancellor's lodge, Bachelors Quarters and Guest House. All the equipment and servers pertaining to the university network are housed in the network server room in the Computer Unit.

Staff Development Programmes

Annually, the department conducts a series of workshops under Certificate Course in Professional Development in Higher Education (CCPDHE) for the lecturers attached to all the faculties of university of Ruhuna. CCPDHE consists of 6 workshops conducted by 6 faculties of the university. The workshop belongs to the faculty of Science, is conducted by the department of Computer Science each year. Successful completion of CCPDHE is compulsory for the probationary lecturers to get confirmation and promotions.

IT workshops

The Department of Computer Science and the Computer Unit conduct courses and workshops for the staff of the University of Ruhuna in order to uplift their IT skills. Furthermore, the department and the Computer Unit conducted a number of workshops for the community in the southern region in order to improve their Computer Literacy. Some of the details are given in the following Table 2.1.

The director of the Computer unit works as the Chief Information Officer of the UHEMIS project and handles it with the help of two assistants; they are also from the department of Computer Science. UHEMIS is a state-of-the-art computer based management system to automate the academic and administrative functions of the universities.

Workshop	Resource Person	Date	Audience
Workshop on Overview of Information, Network and Wireless Security.	Jeffy Mwakalinga- Senior researcher at SecLab, Department of Computer and Systems Science, IT University, Sweden.	2006	Internal students and staff
Workshop on Open Source in Education	Venkatesh Hariharan, Head of Open Source Affairs at Red Hat.	2006	Internal students and staff
Software Freedom Day - 2007	Several experts delivered lectures and with practical to promote Open Source concept.	2007	General Public
Sri Lanka: Addressing the Needs of an Aging Population	Video Conferencing seminar USA, Colombo, Peradeniya and University of Ruhuna	2008	University academics and researchers

Software Freedom Day - 2008	Several experts delivered lectures and with practical to promote Open Source concept.	2008	General Public
Extracting Knowledge from Images and its application in the medical field.	Dr. Jagath Samarabandu, associate professor, department Electrical and Computer Engineering, University of Western Ontario, Canada.	2009	Internal students and staff
Global Economic Prospects for Developing Countries in 2009	Video Conferencing seminar USA, Nigeria, Colombo, Peradeniya and University of Ruhuna	2009	University academics and researchers

Table 2.1

Industrial Relationships

The Department of Computer Science and Industrial Finance Systems (IFS) Colombo, jointly organized an IT Scholarship Programme for school children and school teachers in the Tsunami affected areas in the Southern province. The main objective of this scholarship programme is to enhance the ICT skills of the tsunami affected community in the Southern region. Under this project, 265 students and 180 teachers in 180 different schools were trained. In 2006, the department of Computer Science received Rs. 1.7 million worth equipments including 25 brand new computers under the IFS scholarship scheme to set up a new computer laboratory to implement the scholarship programme and the department received totally 8million rupees to conduct the scholarship programme. The Department uses the building space of (80 m2) owned by the department of Physics, for this laboratory. Because of this new laboratory, the department was able to increase the annual intake from 80 to 120 and introduce several new optional courses for the students of the faculty of Science and offers a number of courses for the community in the southern region.

Consultancy & External Courses

The department and the unit have also been providing consultancy services and conducting courses in Information Technology to the community outside the university to fulfill the needs of the government and the private sector as the main hub of Information Technology in the Southern Province of Sri Lanka.

(a) Sri Lanka-German Technical Corporation (GTZ)

The Department of Computer Science had a contract with the Sri Lanka-German Technical Corporation (GTZ) in order to develop a computer-based system to monitor effectively the ongoing Tsunami housing support project of the GTZ. The objective of this work is to develop, support and maintenance of a district-based database for a Quality Monitoring System for Tsunami Housing Support Project (THSP). A pilot project was conducted in the Matara District and it was extended to the other Tsunami-affected districts including Galle, Kalutara, Hambantota, Gampaha Colombo and Ampara.

(b) Multi-purpose cooperative society

The department provides consultancy services for the Multi-purpose cooperative society of the Southern Province to provide an advisory service for the computerization of management of business activities of multi-purpose co-operative societies of the Southern Province. It has

been agreed to provide services such as giving guidance on IT issues to the staff of the cooperative society to get ready for an e-cooperative society, support to purchase computers by providing advisory service on calling tenders and tender evaluation, train the staff of the co-operative society to work as computer application assistants and software developers, and provide advice on the usage of computers for different activities within co-operative societies.

(c) External Courses

Apart from the academic activities, the department and the Computer Unit have been involved in many community services such as conducting external courses to school teachers, students, employees of the public and private sector and school leavers to obtain training in the field of IT, in order to fulfill the demand of the community in the Southern Province. The Computer Unit is conducting a Certificate Course in Computer Technology (CCCT) and an Awareness Course in Computer Technology (ACCT) and a number of short term courses such as Hardware and Network Maintenance, Web Development, etc for the community in the Southern Province. A detail description of names of the courses conducted, type of participants and number of participants for the last five years is given in Table 2.2.

Year	Course name	Type of Participants	No
2005	Certificate Course in Computer Technology	General public	86
2006	Certificate Course in Computer Technology	General public	103
2006	Certificate Course in Computer Technology	Cooperative Staff	48
2006	Internet & Email	District Recovery & Development Unit - Galle District	80
2007	Certificate Course in Computer Technology	General public	176
2007	Certificate Course in Computer Technology	Cooperative Staff	63
2007	Awareness Course in Computer technology	Directors in Ministry Of Education	40
2007	Internet & Email	Government Officers-Matara District	100
2007	Internet & Email	Media officers	50
2008	Certificate Course in Computer Technology	General public	197
2008	Awareness Course in Computer technology	Peoples in Department of Fisheries	52
2008	Awareness Course in Computer technology	Directors in Ministry Of Education	38
2008	Hardware Training Programme	Directors in Ministry Of Education	42
2009	Certificate Course in Computer Technology	General public	112
2009	Awareness Course in Computer technology	Directors in Ministry Of Education	37

2009	Training Programme for Web Development	Directors in Ministry Of Education	40
		Total	1264

Table 2.2

The department received scholarships worth 8 million rupees from 2005 to 2009, under the Ruhuna IFS scholarship programme. The Table 2.3 describes the details of courses conducted under this programme.

Year	Course name	Type of Participants	No
2006	Awareness Course in Computer Technology	School Children/School leavers	221
2006	Certificate Course in Computer Technology	Teachers	45
2006	Certificate Course in Computer Technology	School Children/School leavers	47
2007	Certificate Course in Computer Technology	Teachers	45
2008	Certificate Course in Computer Technology	Teachers	45
2009	Certificate Course in Computer Technology	Teachers	45
		Total	448

Table 2.3

3. AIMS AND LEARNING OUTCOMES

3.1 Aims

The aims of the department of Computer Science are
(a). With regards to Teaching

- To provide students with an excellent learning environment within which they can explore their interest in the field of Computer Science and Information Technology.
- To give students an opportunity to acquire skills such as presentation, communication, organizational and independent learning skills and prepare them for career in academic, industry, research and etc.
- To produce graduates with a knowledge in Computer Science and Information Technology
- To be an educational and technological resource for the educational, scientific and industrial community in the southern province
- (b). With regards to Services
- To provide a 24 hour Internet related service to the university community
- To upgrade the IT infrastructure facilities
- To improve computer literacy among academic, academic supportive and non-academic members of the university

3.2 Learning Outcomes

Upon successful completion of Computer Science courses after 3 years of undergraduate study, a student should have,

- Acquired in depth knowledge and understanding of theory and techniques in the area of Computer Science and Information Technology
- Developed computer programming skills
- Developed the ability to work as a team on group projects searching literature and writing reports
- Acquired transferable skills such as communication and presentation skills
- Gained experience in using different software packages

Programme Details

The department contributes to the undergraduate programme of the faculty of Science by offering Computer Science as a subject for the B.Sc (General) degree. This was commenced in 1997.

There is a huge demand coming from the students to follow Computer Science as a subject. Although 95% of the students apply for the Computer Science, only a limited number of students are selected due to lack of facilities available. The Table 3.1 describes the number of students selected during the last few years. These students follow Computer Science during three years of their study period. The Ruhuna University Computer Unit offers several optional courses for students who do not follow computer science as a subject and provides many services to the entire university community. The Computer Unit presently offers several optional courses namely Computer Literacy Course (CLC), Certificate Course of Information Technology (CCIT) for science students. These courses help both Physical and Biological science students to compete in the job market where the knowledge in Information Technology is being a key factor. All Science students except Computer Science students are given the opportunity to follow CLC in the first year whereas only a limited number is selected for the CCIT in the second year due to the lack of facilities. It is compulsory for the students to pass the CLC, in order to get the degree. The Table 3.2 shows the number of students who followed the CLC during the last five years. The Computer Unit offers a Computer Awareness Programme (CAP) for all new Computer Science students of the faculty of Science as they are coming from different areas and some of them are not having basic knowledge on Computer Science.

Year	No. of Students
2004	60
2005	80
2006	140 (two batches)
2007	100
2008	100
2009	120

Table 3.1

Academic Year	Bio Science	Physical Science	Total
2004/2005	91	119	210
2005/2006	104	134	238
2006/2007	137	118	255
2007/2008	100	98	198
2008/2009	102	77	179
2009/2010	137	85	222

Table 3.2

The Table 3.3 shows the number of students who followed the CCIT and Advanced Certificate Course of Information Technology (ACCIT) during the last five years.

Year	Number of Students for CCCT	Number of Students for ACCIT
2006	54	-
2007	69	48
2008	53	53
2009	57	32
2010	54	32

Table 3.3

Several optional courses such as E-Commerce and Professional Practice, Design and Implementation of Computer Programs, Visual Programming are offered for all third year Science students to improve their knowledge on modern IT concepts.
The Table 3.4 shows the number of students registered for some of the optional course units and compulsory course units offered for third year students. Please note that the course units named COM3212, COM3263 and COM3b33 are offered only for Computer Science students and COM3b13 (old syllabus) and COM3b24 (old syllabus) are compulsory for them.

Year	COM3212	COM3232	COM3252	COM3263	COM3b52	COM3b33	COM3242	COM3b24	COM3b13
	Phy	Phy/Bio	Phy/Bio	Phy	Phy/Bio	Phy	Phy/Bio	Phy	Phy
2009	32	37	49	12	22	90	-	-	-
2008	72	44	104	32	34	116	33	-	-
2007	41	51	108	-	37	-	12	80	80
2006	-		108	-	22	-	23	56	56

Table 3.4

4. FINDINGS OF THE REVIEW TEAM

4.1. Curriculum Design, Content and Review

The reviewers observed that the curriculum has been updated in 2000, 2004 and 2009 after the Department was established in 1997. This kind of frequent periodic update is necessary in this discipline of study. In the most recent curriculum revision, a new degree program Bachelor of Computer Science (BCS) has been proposed and the University and UGC approval has been obtained. Reviewers feel that this new curriculum better meets the requirements of the industry and will give more opportunities to students. Several other strengths of the new curriculum were observed such as the option for the 4 year special degrees, conformance to a credit-based system which is the current standard in the University system, presence of significant amount of mathematics content, the requirement of an industry placement (with a credit-rating) and inclusion of subjects in other disciplines (e.g., Management, Accounting, Social Research methods, Marketing Management, Natural Disasters, Electronics, Physical Fitness, Communication Skills) some of which will help to improve employability of graduates. Many of the above are not present in the current curriculum. It is commendable that the Department has come-up with a reasonably good new curriculum that covers many technical areas such as Networking, Hardware, Multimedia, Web and Programming and open-source technologies despite limited resources in the Department and the requirements of the Faculty of Science it has to satisfy.

The reviewers also commend that the department offers Computer Literacy and Certificate courses in IT to non-CS students in the Faculty such as those following biological sciences.

With all the above strengths and good practices, the reviewers also observed a few weaknesses in the aspect of curriculum design, content and review.
One issue is that curriculum revision process seems to be weak as reviewers could not observe adequate evidence on how the overall processes proceeded. While there were some limited amount of records, they lacked important details to show that the process was systematic and how and what different stakeholders contributed (for example, there were no minutes of Departmental meetings or such other meetings on curriculum matters). A couple of modules in the new BCS curriculum seem to be out of place (e.g., Visual Programming in a later semester and Software Engineering in an early semester; these two could be switched). Reviewers observed inconsistencies and non-uniformity in formats and the level of details in the module syllabi; these give a less than professional look and reviewers feel that this could be due to lack of a Faculty/Senate approved format. Some subject modules in the new curriculum do not have learning outcomes and some do not list any pre-requisites but they should have. Reviewers feel that the decision to continue the current curriculum when the new BCS curriculum is introduced is not adequately justified. The very reason why a new curriculum is introduced should be to overcome the limitations of an existing one and to make things more up to date; therefore the continuation of the existing curriculum has to be reconsidered.

4.2. Teaching, Learning and Assessment Methods

Teaching and Learning

The teaching activities of most of the courses are based on lectures, practical classes, and tutorials. Most of the lectures are presented as a slide show using multimedia projectors, and these slides and other material are accessible via Internet using the Learning Management System maintained by the Department.

Lectures are conducted bilingually in English and Sinhala. The reviewers is of the opinion that this can constrain the amount of content that can be delivered in a lecture as the same content is repeated in two languages. Reviewers observed that appropriate technology is used for both lecture and practical sessions. The observed lectures were well prepared and delivered well. Reviewers observed that very low level of interaction between the lecturer and the students during these sessions. It was also revealed that the academic staff are generally available for consultation by students.

Learning activities other than listening to a lecture are based on tutorials, practical sessions, quizzes in LMS and final year group project. Practical classes provide an opportunity to develop skills needed in the relevant field of study with practical experience and knowledge. Practical sessions of theory modules are offered as part of the course modules. When conducting practical classes it was observed that a lab schedule was given either printed or on LMS and students making attempt to perform these tasks on their own.

Assessment Methods

The department uses a variety of assessment methods to determine the level of achievement of the stated outcomes. They are based on the subject taught and the method of teaching used. For most of the course modules, students are assessed by end-of-semester examinations and in-course assessments which may include assignments, tutorials, practical examination (where applicable). End semester examinations consist of theory and practical components for the relevant subjects. For such subjects students are required to obtain a minimum of 35% and 30% for theory and practical components respectively to pass the subject. Student eligibility for the end semester examination is determined after checking 80% attendance in lectures, practical sessions and tutorials.

Reviewers noted that external second examiners and moderators are appointed formally for moderation and second marking. Students were allowed to request for verification of marks through a formal process if needed. It was noted that a relatively long time is taken to release results of semester examinations.

The review team would like to commend the DCS effort in teaching, learning and assessment related activities despite experiencing number of constraints mainly due to space and other resources

4.3 Quality of Students including Student Progress and Achievements

The DCS offers Computer Science as a subject for the BSc general degree and several optional courses for the students of the faculty of science. Only physical science students are allowed to follow Computer Science as a subject. Records show that students with high Z-scores have a preference for computer science subject. This is an indication of the demand for computer science subject as well as quality of intake. A total of 120 students out of 209 physical science students (more than 50% of physical science students) have offered computer science subject in the academic year 2009/2010. The DCS has doubled the intake from 60 students in 2002/2003 to 120 students in 2009/2010. This shows a healthy growth.

In order to encourage students to perform better, the DCS awards IFS gold medal at the annual congregation of the University of Ruhuna for an outstanding B.Sc. (General) degree student who followed Computer Science as a subject. The DCS provides software development training program for selected number of final year students. The selection is based on their performance during the academic program and the interview. This encourages students to perform better in their academic activities as well as in extra-curricular activities. Most of the computer science students participate in sports and games actively. Some of the graduates who have offered computer science as a subject have been recruited by reputed software development companies in Sri Lanka. This indicates the demand for such graduates.

4.4 Extent and Use of Student Feedback

Qualitative student feedback is obtained through the following mechanisms: informal discussions with the students during the lectures and practical classes end of the semester formal course evaluation forms and the Learning Management System (LMS). The DCS also obtains feedback from its past students. It was the opinion of the students that the DCS has often accommodated the feedback given by them.

4.5 Postgraduate Studies

Reviewers observed and identified several strengths and good practices in this aspect. The Department encourages young and new staff members to start postgraduate courses and research, for example by allocating Departmental funds for part-time postgraduate studies. The review team commends this practice which motivates and encourages young academic staff to actively engage in research and postgraduate studies. The review team noted that some staff members have contributed to a research culture in the Department. The staff publications included publications with postgraduate students. The team noted evidence of international research collaboration among the departmental staff. There is potential in the Department to provide research facilities for postgraduate students and staff, especially with Department's generated funds and with the upcoming new building. The Department also gets external academics (from other Universities) to co-supervise the students; the reviewers think this is a good strategy to overcome current difficulties and to get input from experts in the field for internal research. Reviewers feel it is commendable that the University Staff Development Center organizes workshop series for enhancing research methodologies; this is quite a rare practice in the University system. A Department staff member has participated in these workshops. The Video conferencing facility setup in the Department and access to the University network and servers are useful for research; these are strengths of the Department and seem to be partly due being combined with the Computer Unit. The Department has benefited from SIDA and ADB scholarship schemes that supported staff members to get postgraduate qualifications.

Reviewers observed and identified the following weaknesses in postgraduate activities. The major issue, not surprisingly (as it is common in many local Universities, especially in the field of computing and related technologies), is the lack of sufficient qualified senior staff who are active in research and capable of supervising postgraduate students. The absence of a taught postgraduate program in the University or close proximity causes young staff to go to other Universities at a distance (e.g., in Colombo) and makes it difficult for the Department to

attract good talent. Facilities and resources for supporting research were seen to be inadequate and there were no adequate evidence on attempts to enhance these (except for the new building and related improvements). One basic problem is that, the lack of adequate staff obviously means existing staff get overloaded with undergraduate teaching, administrative and other related work. In this context, reviewers feel that the having to allocate resources to provide the services to the whole University by the Computer Unit makes things even worse. All these mean it is difficult for staff to find time for research and/or supervise research students. Reviewers also identified that there is inadequate opportunities, encouragement and support for staff to attend academic events like conferences, especially, to present research papers.

4.6 Peer Observation

The department has a formal peer review process where lecturers attend the lectures conducted by their colleagues. There was evidence that Demonstrators and Instructors were receiving informal guidance from Lecturers in conducting tutorials and practical work in the labs.

Evidence suggests that a formal peer evaluation process has been started recently covering most of the lectures. However, there was no evidence of teacher-reviewer meetings conducted at the department. It was also observed that actions have not been taken based on these formal reviews. The Review panel was of the opinion that teacher-reviewer meetings should be started and formal reviews should be continued aiming at progressive improvements of the academic work.

The Review Team is glad to know that the external moderators have been used for moderating the examination papers and 2nd marking of answer scripts by the internal academics.

4.7 Skills Development

The review team noted several initiatives as commendable practices which enhances the skills among the students. The curriculum consists of multi-disciplinary subjects such as management, accounting, social research methods, marketing management and natural disasters offered to Science students. Several practical oriented courses such as computer networking, hardware, multimedia, Web programming are offered to improve technical skills. Relatively good exposure on Open-source technologies is also provided to undergraduates. The review team noted the evidence in utilizing the services of remote resource persons through video conference to enhance practical skills on open-source software, Information Security, Professional Issues etc. The proposed BCS curriculum includes Electronics, Physical Fitness, Management, Accounting, Communication Skills, marketing in the third year.

Physical Education facilities offered to the students at the university are relatively good and science students actively participate in 22 sports. It is commendable that the Physical Education Unit has made arrangements to provide nourishment tokens to students who are in the university teams during inter-university games training. The review team noted the two course units on “Health Related Physical Fitness and Wellness” and “Physical Fitness health Management” offered as a part of the curriculum. One course focuses on practical aspects

while the other focuses on theoretical aspects in physical education. A limited number of students are selected to the course and the subject grade contributes to the final GPA. A quota system is used to keep the gender balance among the selected students.
It is commendable that the department offers Computer Literacy courses to students such as biological sciences who do not follow Computer Science subjects. Orientation programme of 6-8 weeks is conducted for the students of the faculty. At present, a limited exposure to industry is provided to the students through Industry visits, workshops, Career Guidance. The team noted the existence of a Computer Society. However, limited evidence was found on the past activities carried out through the society. Some student entities such as Nature Explorer Society exist for promoting student activities. However student involvement in such extracurricular activities seems to be limited. It was noted that the student participation and interest is poor in the English Course offered.

4.8 Academic Guidance and Counselling

The department has implemented a mentoring service to provide academic guidance. However, the review team observed the need for enhancing the formal mechanisms in providing academic guidance and student counselling. It is commendable that the department has taken the initiative to arrange an internship in the industry for a significant percentage of Computer Science students after the graduation. The review team found evidence on the department's effort in liaising with the industry prior to the graduation of the final year students.

It was noted that one senior and one junior supervisor have been allocated for the supervision of third year group projects. However the team did not observe any formal records maintained on the student progress and meetings with the supervisor. The review team is of the opinion that the student-supervisor interaction during project need to be enhanced and a formal mechanism to monitor the progress of the groups projects would lead to enhanced quality projects. The students are issued with a handbook which contains subject combinations available, different course units and the examination regulations. This hand book is useful for students in selecting appropriate courses. However, the need for more guidance on career path and employment opportunities was observed by the team. The feasibility of using the existing video conferencing facility to obtain the services of external resource persons for the career mentoring could be explored.

A coordinator is allocated to maintain the Learning Management System which provides students with material relating to the subjects. A formal re-correction process of exam scripts is in place which involves the head of department, course coordinator and the unit lecturer scrutinizing the scripts. This is a commendable practice which will enhance the confidence on the examination process among the students. Reviewers are of the opinion that a formal recordkeeping process need to be in place relating to student counseling and psychological counseling. In addition there is a need for regular training programmes to train student counselors.

Based on the observations made during the study visit by the review team, the eight aspects were judged as follows:

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

5. CONCLUSIONS

1. Curriculum Design, Content and Review

Good Practices/Strengths

- Curriculum has been updated in 2000, 2004 and 2009 after the Department was established in 1997. This kind of periodic update is necessary in this field and therefore commendable.
- Considering the requirements of the industry and to give more opportunities to students, a new degree program Bachelor of Computer Science (BCS) has been proposed to start in 2010 and the University and UGC approval has been obtained.
- Updated curriculum provides the option to go for the 4 year Special degrees.
- Curriculum is a credit-based system conforming to the standard followed in the University system.
- Curriculum contains significant amount of mathematics content.
- While being in the Faculty of Science, having to conform to the Faculty requirements, the Department has come-up with a reasonably good curriculum within the constraints.
- New BCS curriculum has an industry placement requirement (6 credits) in Level 3.
- Despite limited resource availability the department has taken initiatives to introduce course units in several technical areas such as Networking, Hardware, Multimedia, Web and Programming
- Multi-disciplinary subjects such as Management, Accounting, Social Research methods, Marketing Management, Natural Disasters, Electronics, Physical Fitness, Communication Skills included in the new BCS curriculum
- Relatively good coverage on open-source technologies
- It is commendable that the department offers Computer Literacy and Certificate courses in IT to students such as biological sciences who do not follow CS subjects

Weaknesses

- Curriculum revision process seems to be weak as reviewers could not see adequate evidence
- A couple of modules in the curriculum could be seen out of place (e.g., Visual Programming in a later semester and Software Engineering in an early semester; these could have been placed in the opposite way)
- Inconsistencies/non-uniformity in formats and level of details in the module syllabi give a less than professional look (this could be due to lack of a Faculty/Senate approved format)
- Some course modules do not have learning outcomes; some do not list any pre-requisites but they should have
- The decision to continue the current curriculum when the new BCS curriculum is introduced seems not adequately justified (the very reason why the new one was introduced was to overcome the limitations of the existing one).

2. Teaching, Learning and Assessment Methods

Good Practices/Strengths

- Teaching and learning are carried out through a combination of methods such as lectures, tutorial assignments, practical classes.
- Multimedia presentations, supporting handouts and lab schedules are used for lectures and practical sessions.
- Use of LMS for providing extended learning support for the students. Each student had a login for the LMS with access to detailed syllabi, lecture notes, presentations and additional links. LMS was also used for discussion forums and obtaining student feedback
- Final year group project provides experience on team work, project planning, scheduling, achieving milestones, meeting deadlines, presentation skills and report writing.
- The friendly atmosphere in the department. This encourages the teachers and the students to interact on their academic matters, and the supporting staff efficiently contributing to the teaching-learning process
- Relevant modules had theory and practical components with 70% and 30% standard mark allocation respectively for the end semester evaluations.
- For end-semester examinations module the setters, moderators, 1st markers and 2nd markers are nominated for all the modules
- There was evidence of moderation of question papers by internal / external moderators and 2nd marking of answer scripts
- The final year project evaluations are focused on the group as well as the individual students. These evaluations are based on the presentations, final report and viva voce examination.
- Use of Quizzes in LMS to review the student's knowledge in most of the practical sessions
- A formal process in place for students to request for mark verification after the release of results.
- Department has taken a lot of initiatives to increase computer labs facilities through donations and other external links

Weaknesses

- Student interaction with the teacher during the lecture seems to be very low.
- Limited access to computer facilities, to complete the assignments in time. Extended opening hours for Computer labs are needed.
- Learning aims, outcomes and evaluation criteria are not specified in a consistent standard for all the modules.
- Some of the question papers did not have the marks breakdown for different parts in the questions. This makes it difficult for a student to anticipate to what depth the answer should be written.
- There was no standard marking scheme or model answers with the examination papers. Suggest that they should be prepared by the setter and attached with each examination paper and get it moderated

3. Quality of Students, including Student Progress and Achievement

Good Practices/Strengths

- Average Z-Score of the students offering computer science as a subject is generally higher than that of those who are not following computer science.
- Number of students enrolled for computer science has been increasing. It has been doubled from 60 in year 2002/2003 to 120 in year 2009/2010.
- The department encourages students by awarding Industrial Financial Systems (IFS) gold medal for the outstanding computer science student.
- Selected number of final year computer science students is given a three months software development training program at IFS.
- The department maintains an industrial relationship with IFS.
- BSc graduates who have offered computer science as a subject are recruited by leading software development companies such as IFS, Virtusa.
- Almost half of the students who have obtained classes have followed computer science as a subject.
- Computer science subject is the most demanded subject in the physical science stream.

Weaknesses

- Lack of exposure of students to the industry.
- No data analysis on completion of the degree program

4. Extent and Use of Student Feedback

Good Practices/Strengths

- Student feedbacks have been used to identify the necessary improvements in teaching. Students confirmed the immediate improvements in teaching quality.
- Views of the past students have also been recorded.

Weaknesses

- Students are not giving feedbacks during the lectures.
- No evidence to prove that student feedback have been used for curriculum design.
- Module wise feedback analysis was not formally done.

5. Postgraduate Studies

Good Practices/Strengths

- Departmental encouragement for young and new staff members to start postgraduate courses and research (e.g., allocation of Departmental funds for part-time postgraduate studies)
- Research-active senior staff members who have contributed to a research culture, publications with postgraduate students and does collaborative research internationally
- Potential in the Department to provide research facilities for postgraduate students and staff, especially with Department's generated funds and with the upcoming new building
- Getting external academics to co-supervise the students
- University Staff Development Center organizing workshop series for enhancing research methodologies and participation by a Department staff member
- Video conferencing facility and access to the University network and servers are useful for research
- Benefited from SIDA and ADB scholarship schemes that supported staff members to get postgraduate qualifications

Weaknesses

- Lack of sufficient qualified senior staff who are active in research and capable of supervising postgraduate students
- Lack of a taught postgraduate program causing young staff to go to other Universities and making it difficult to attract good talent
- Inadequate facilities and resources for supporting research and no evidence of steps to enhance these
- Lack of adequate staff means existing staff being overloaded with undergraduate teaching, administrative and other related work (even Computer Unit) making it difficult for them to find time for research and/or supervise research students.
- Seemingly inadequate opportunities, encouragement and support for staff to attend academic events like conferences, especially, to present research papers

6. Peer Observation

Good Practices/Strengths

- There was evidence that peer observation has been started recently using the senior academics of the department. Records of these had useful comments made to improve the lecturers' weak points.
- Records of some internal meetings were available as minutes but there was evidence that a lot more informal meetings are held on an ad hoc basis.
- There was evidence that papers had been moderated by external academics and there is a 2nd marking of answer scripts.

Weaknesses

- No evidence to suggest that peer observations are formally analyzed and actions have been taken based on the peer comments using reviewer-teacher meetings
- There was no evidence that internal meetings were conducted on a regular basis with a predefined agenda.

7. Skills Development

Good Practices/Strengths

- Multi-disciplinary subjects such as management, Accounting, Social Research methods, Marketing Management and Natural Disasters offered to Science students and student interests seems high.
- Despite limited resource availability the department has taken initiative to introduce course units in several technical areas such as Networking, Hardware, Multimedia, Web, Programming to improve technical practical skills
- Relatively good exposure on open-source technologies provided to undergraduates providing a competitive edge during employment
- Evidence found in utilizing the services of remote resource persons through video conference to enhance practical skills in areas such as open-source, Information Security, Professional Issues etc
- Proposed BCS curriculum includes Electronics, Physical Fitness, Management, Accounting, Communication Skills, marketing in the third year
- Physical Education facilities are relatively good and science students actively participate in sports. Student records from 2006 onwards indicate several students have obtained university colors several sports. The evidence indicates that 22 games are supported by the Unit. It is commendable that the Physical Education Unit has made arrangements to provide nourishment tokens to students who are in the university teams during interuniversity games training. Two course units have been offered to students on "Health Related Physical Fitness and Wellness" and "Physical Fitness health Management" as a part of the curriculum. One course focuses on practical aspects while the other focuses on theoretical aspects in physical education. A limited number of students are selected to the course and the subject grade contributes to the Final GPA. A quota system is used to keep the gender balance among the selected students.
- It is commendable that the department offers Computer Literacy courses to students such as biological sciences who do not follow CS subjects.
- Orientation programme of 6-8 weeks is conducted for the students of the faculty.

Weaknesses

- Limited exposure to industry through Industry visits, workshops, Career Guidance.
- Existence of a student Computer Society was noted. There was limited evidence of past activities carried out through the society.
- Some student entities such as Nature Explorer Society exist for promoting student activities. However student involvement in such extracurricular activities seems to be limited.
- Student participation and interest in English Course offered 2 hours per week is poor.

8. Academic Guidance and Counseling

Good Practices/Strengths

- Departmental Mentoring Service implemented to provide academic guidance.
- Services of a Senior Student Counselor, Deputy Student Counselor, and 10 student Counselors exists. A proctor service in place and plans are underway to establish a marshal service.

- Although an internship component does not include in the curriculum, the department has arranged in an internship in the industry for a significant percentage of CS students after the graduation. The department liaise with the industry in advance and students placed after the academic programme. The programme is a positive initiative taken by the department.
- Two supervisors (Junior/Senior) allocated to 3rd year group projects.
- Comprehensive printed Student Handbook provided to the students.
- Learning objectives, curriculum and learning material maintained in the LMS.
- Formal Re-correction process of exam scripts and the scrutiny of the scripts in such cases by the head of department, course coordinator and the unit lecturer.

Weaknesses

- Lack of a recordkeeping process in place relating to student counseling and psychological counseling.
- Lack of a regular training programme to train student counselors.
- Limited staff-student interaction during 3rd year projects.

6. RECOMMENDATIONS

1. Make the curriculum review process a team effort of all staff and obtain input from alumni, multiple industry and professional stake holders
2. Refer curriculum recommendations of international professional bodies like the IEEE, ACM and BCS, especially when a curriculum revision is attempted
3. Conduct regular Department meetings (at least once a month) and maintain minutes
4. Establish Department-Industry committee to discuss curriculum, industry placement and such relevant matters and have meetings at least once per year (preferably twice)
5. Identify 'subject areas' (e.g., 'core' and 'specialized' areas) that need to be covered in the curriculum and then how these areas can be covered in the program in successive semesters, starting from simple, introductory levels towards more advanced, deeper levels. This way, a logical sequence can be developed from level 1 onwards. This kind of rationalization process in developing the curriculum is not seen. Some of the 'out of place' course modules may have been due to this.
6. Document the curriculum review process
7. Can include Field Visits/Industry Visits into the curriculum
8. Adopt an improved format for curriculum and syllabus descriptions (preferably a common format for the whole Faculty or the University) and follow that consistently. This will make the curriculum and syllabus description document complete, coherent and more professional.
9. Despite the upcoming new building, considering the reality of the existing resources (especially human resources) and difficulties in expanding them, running the new BCS curriculum alone with its 4-year 'special' option at acceptable quality will be a challenge
10. When the new BCS curriculum gets started, consider terminating the existing program. The Department may continue to teach to the other students in the Faculty of Science some IT course modules for them to gain the required IT knowledge and skills for them to be effective in their own fields.

11. Consider separating from the Department the Computer Unit whose main responsibility seems to be to look after the University's network, mail and web servers. Physically, the Unit may be located within the same building, but the Unit could be separately managed, without being a burden on the academic activities of the Department. This way, the Department will be relieved from running an infrastructure/utility service for the University and can focus on academic work and spend its energy on developing its academic programs which is the mandate of any academic Department. Staff of the Computer Unit can of course support the Department in teaching networking, security and systems related modules.
12. Introduce an individual project module in Level 2
13. Some of the outreach activities where students get involved can be converted into academic work for which students get credit
14. Revise the CLC and CCIT curricula to improve them to better suit the students at the relevant levels. For e.g., instead of teaching C programming in CLC and Visual Basic in CCIT, better to interchange them. Also improve the implementation (teaching and learning process) of these by improving the facilities and providing more lab time to students.
15. Convert CLC and CCIT programs into course modules with a credit rating so that students can earn credits from them and have the module appearing in their transcript.
16. Include tutorials with on the spot assignments to increase student interaction.
17. Increase practical times in CLC and CCIT courses and reduce the theory content.
18. Increase the number of computers in the Pool and increase the number of resource personnel available. Since limited computer resources in Computer pool providing a WiFi zone may be helpful to allow the students to use their own laptops for learning purposes.
19. Provide at least one computer to the hostel with Internet facilities.
20. Allocate separate learning area for students.
21. Increase intermediate evaluations for the final projects with at least another session of presentation before the final evaluation.
22. Introduce smaller projects into the other modules to be done individually.
23. Increase the number of assignments in course modules and encourage students to do self learning to develop further on the foundations laid down by the curriculum
24. Industry visits, workshops, guest lecturers, industry based software development projects, and industry training will help students to interact with the industry.
25. Learning outcomes, evaluation methods, and list of recommended reading for each course module should be incorporated into the curriculum.
26. Establish an alumni association and increase the interactions between the department, students, and past students.
27. A formal process to be established to identify weak students and provide necessary assistance / guidance to improve them. Assign these duties to the course coordinator.
28. A formal process is required to analyze student/past student feedbacks and to take corrective actions. Currently it is a responsibility of individual lecturers.
29. A considerable amount of feedback can be given during the lecture itself. Students should be encouraged to do this.
30. Improve the senior staff profile and the research profile of the Department aiming at a critical mass of permanent research-active academic staff
31. Encourage and support staff members to conduct research, publish and attend academic events (e.g., can use Department funds)

32. Encourage and help academic staff members to attend regularly (every year) at least local academic/professional conferences like National IT Conference.
33. Departmental Alumni and industry input can be obtained to support research.
34. When recruiting new staff, give priority to those who have ability and interest to do research and/or start postgraduate studies.
35. Motivate staff to do research and/or start postgraduate studies
36. Actively seek to establish links with other Universities and research centers to conduct collaborative research, exchange scholars, supervise students
37. Use Departmental funds or get funds from external sources to attract good research students by paying them a reasonable monthly stipend
38. Organize seminars, symposia for staff/students for enhancing research opportunities, interaction with others in the field and build a research culture
39. Conduct regular department meetings and minute them.
40. Introduce formal reviewer-teacher meetings.
41. Introduce a standard form for the paper moderation process.
42. Activate Society to promote student activities such as community out reach services in IT, Industry Visits, Workshops etc
43. More initiatives to be taken to encourage students English Communication Skills. Programmes such as speech crafting, Business Communication Skills could be introduced. It was noted that only two presentation opportunities are provided for the undergraduates to enhance the presentation skills.
44. From the discussions with the students it was noted that, awareness courses such as CCIT need to have more practical components.
45. Formal record keeping of students achievements in extra curricular activities be implemented.
46. More opportunities for soft skills enhancement and career guidance be offered to students.
47. Implement an appropriate mechanism to encourage Students participation in English Course s offered.
48. Dedicated Career Guidance notice board can be placed in the Department.
49. Departmental coordinators can be appointed for student skills development and to coordinate with Career Guidance Unit/ ELTU/ Physical Education Unit. The coordinator to play an active role in encouraging student participation in extra curricular activities such as soft skills enhancement programmes, community outreach activities to be encouraged. The significance of the development of career skills/soft skills and participation in extra curricular activities to be emphasized through the workshops, seminars, career guidance events etc
50. Career Advisors carder positions at CGU be filled and Science students encouraged in making use of the Career Guidance Services offered by the CGU.
51. Maximum number of students per Group project to be kept to smaller number such as five.
52. More guidance to (perhaps through Video conferencing facility) to be provided on Career Guidance,
53. Evidence found relating to guidance on 3rd year project such as in 1st semester lectures on report writing. However, a need exists for more guidelines, coaching on technical report writing, conducting literature surveys, presentations.
54. Students to be provided the opportunity engage in project topics related to clients, external industries/organizations and research type projects rather than only

developments. It was noted that past batches have carried out projects for client organizations outside the university. However, the current batch's topics limited to internal university projects.

55. Record keeping mechanism to be implemented to record the faculty mentoring process.
56. A formal process to be established to identify weak students and to counsel weak students.
57. More regular events can be organized to improve staff-student interaction and to encourage to close interaction
58. Forming of a Departmental Alumni actively contribute to the student's industry related exposure.
59. Forming of a formal Industry Consultative Board to enhance the industry academic interaction, feedback on internships, conducting workshops and teaching, career mentoring
60. Exploring the possibility of establishing Industry Scholarships for the needy students who do not receive other financial assistance Mahapola and Bursary.
61. Exploring the possibility of setting up an award for the best 3rd year project and final projects of the new programmes to encourage students.

7. ANNEXURES

Annex 1. AGENDA OF THE REVIEW VISIT

Day 1 (20th April 2010) - Schedule
o Private Meeting of Review Panel with Chairman QAA Council
o Review Panel meeting with the Deputy Vice Chancellor, Dean/Science, Head/Department of Computer Science
o Discuss the Agenda for the Visit
o Department Presentation on the Self Evaluation Report
o Discussion with Department Staff (working tea)
o Observing Departmental Facilities
o Lunch
o Observing Teaching – Level III practical class (COM 3113)
o Observing Teaching – Level II Lectures (COM2123)
o Observing Other Facilities (Faculty Library, Main Library)
o Observing Other Facilities (University Gymnasium & Physical Training Center)
o Meeting with Department Academic Staff & Academic Supportive Staff (Working Tea)
o Meeting with Demonstrators
o Brief Meeting of Reviewers
Day 2 (21st April 2010) - Schedule
o Observing Documents
o Observing Teaching – Level I Lectures
o Tea
o Observing Teaching – Level II Practical Class
o Meeting with Technical Staff and Other Non-Academic Staff
o Meeting with CLC, CCIT & ACCIT Students
o Lunch
o Meeting with Undergraduate Students (Computer Subject)
o Meeting with Student Counselors/Academic Advisors
o Tea o Meeting with Passed out Students
o Meeting with coordinators of other optional courses (Physical Education/Management & Finance), and Coordinators for English and Career Guidance
o Meeting of Reviewers
Day 3 (22nd April 2010) - Schedule
o Meeting with Vice Chancellor and Deputy Vice Chancellor
o Meeting with Postgraduate Students
o Observing Teaching (Level I Practical Class)
o Observing Services given to Internal and External Communities
o Tea
o Clarification session with Department Staff
o Observing Final Year Projects
o Reviewers Private Discussion
o Meeting with Head and Staff for Reporting
o Lunch

Annex 2. DOCUMENTS, RESOURCES AND FACILITIES OBSERVED BY THE SUBJECT REVIEW TEAM

- Curriculum Design, Content and Review
  a. Program/Course Information
  b. Detailed Module Information
     i. Examination criteria and By Laws for the course unit system, Faculty of Science.
     ii. Manual of procedure for conduct of University
  c. Case study on the integration of skills development in the undergraduate curriculum
  d. Note of curriculum review Processes
  e. Minutes of Meeting that include discussion of curriculum matters and action taken as a result

- Teaching Learning and Assessment Methods
  a. Examples of Teaching and Learning Materials
  b. Minutes of Departmental Committee Meetings
  c. Regulations and Guidelines relating to the Assessment of students, including details of Appeals Procedures.
  d. Samples of student work
  e. Summary marking sheet
     i. Marking criteria Marking schemes
     ii. Model Answers
  f. Details of Marking Conventions
  g. Assessment Trends

- Quality of Students, Including Student Progress and Achievement
  a. Details of student entry qualifications
  b. Details of student achievement
  c. Details of Graduate Destinations/Employment
  d. IFS Gold Medal

- Extent of Student Feedback, Qualitative Quantitative
  a. Copies of all Questionnaires used to obtain student Feedback and details of how they used
     i. Actual examples of Student Feedback
  b. Any analyses of Questionnaires
  c. Notes of any Student Forums used to gather Feedback

- Postgraduate Studies
  a. University policy for Postgraduate Studies
     i. Funding Sources for Postgraduate Studies
     ii. Facilities available to Support Postgraduate Studies
     iii. Postgraduate Supervision
     iv. Details of Research Methods
  b. Current Postgraduate Studies
  c. Research Publications

- Peer Observation
  a. Peer Observation of Academic Staff
  b. Paper Moderation

- Skills Development
  a. A Summary of the department's Strategy for Skills Development
     i. Software Development Skills
     ii. Refer the course materials in section 2.1
     iii. Skill Development practical Oriented Subject
     iv. Industrial Training
     v. IT Literacy skills
  b. Details of specific Modules in which students acquire key or personal skills
  c. Any Handouts or other Materials provided to students that show you are raising their awareness of the skills they are gaining, in addition to subject knowledge and understanding
  d. Enhancing University staff's ITCT skills

- Academic Guidance and Counseling
  a. Academic Guidance and Counseling
     i. Counseling Services of Faculty
     ii. Orientation Programs for new Comers
     iii. Mentoring Services of Department of Computer Science
  b. Faculty Mentoring Service Group Samples
  c. Mentoring Services conducted by Department of Computer Science(Sample 1& Sample 2)

- Services
  a. Student E-mail System details
  b. External Courses
     i. Ruhuna-IFS IT Scholarship Program
     ii. Awareness Course in Computer Technology(ACCT)
     iii. Certificate Course in Computer Technology(CCCT)
  c. Consulting Services
     i. Co-operative Department of Southern Province
     ii. Post Tsunami Housing Project
     iii. Services Provided by the Computer Unit, University of Ruhuna.

- New Building for the Department of Computer Science

Annex 3. THE STAKEHOLDERS MET BY THE SUBJECT REVIEW TEAM

1. Vice Chancellor
2. Deputy Vice-Chancellor
3. Dean/ Faculty of Science
4. Head / Department of Computer Science
5. Members of the academic staff
6. Support staff
7. Computer Science undergraduate students (2^{nd}, 3^{rd} year) Undergrads of CLC, CCIT, ACCIT modules (not following Computer Science)

8. Postgraduate research students/graduates
9. Computer Science graduates employed in Colombo (tele-conference)
10. Director/ Career Guidance Unit
11. Senior Assistant Librarian
12. Student counsellors