SUBJECT REVIEW REPORT

DEPARTMENT OF
TEXTILE AND APPAREL TECHNOLOGY

FACULTY OF ENGINEERING TECHNOLOGY
THE OPEN UNIVERSITY OF SRI LANKA

21st to 23rd April 2008

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1. SUBJECT REVIEW PROCESS

Public institutions thrive on public confidence. The accountability of universities for quality and standards is a key factor in safeguarding such confidence in Sri Lankan higher education. The National Quality Assurance system has identified a number of aspects that should be reviewed for quality, within the university system. These aspects have been incorporated into two schemes, namely the Institutional Review Process and the Subject Review Process. The subject review process of the University Grants Commission (UGC) involves evaluating the quality and effectiveness of education within a specific subject or discipline, focusing on the student learning experience and on student achievement in both undergraduate and postgraduate programs. The subject review process is about management and assurance of quality at the programme level rather than the institutional level. This review is conducted under the guidance of the Quality Assurance and Accreditation (QAA) Council of the UGC.

The Subject review team appointed by the QAA council of the UGC to look into the quality of education of the Department of Textile & Apparel Technology, Faculty of Engineering Technology, Open University of Sri Lanka, conducted their review over a period of three days, from 21st to 23rd April 2008. The guidelines provided in the "Quality Assurance Handbook for Sri Lankan Universities" prepared by the Committee of Vice Chancellors and Directors (CVCD) and the UGC, were followed in the review process. Accordingly the team focused on eight key aspects of the programs conducted by the Department. These aspects are given below:
1. Curriculum Design, content and review
2. Teaching, Learning and Assessment methods
3. Quality of students including student progress and achievements
4. Extent and use of student feed back, qualitative and quantitative
5. Postgraduate studies
6. Peer observation
7. Skills development
8. Academic guidance and counselling

The information regarding these aspects were obtained through the Self Evaluation Report submitted by the Department, inspection of documentation prepared, observing the facilities available in the Department and through discussions with the Dean of the Faculty, Head of Department, members of the academic and non-academic staff and students of the Department of Textile & Apparel Technology. The agenda of the visit, list of persons met during the visit, list of teaching sessions observed, list of facilities observed and list of documents observed are given in Annexures 1-5.

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

The Open University of Sri Lanka (OUSL), which was established in 1980, is a national university constituted under the Universities Act No. 16 of 1978 and OUSL Ordinance No.1 of 1990, as amended. It has the same legal and academic status as any other national university in Sri Lanka. It is the only recognized university in Sri Lanka where students are able to pursue further education by distant education techniques in keeping with the philosophy of open learning and distance education methodology. The Ministry of Public

Administration has declared by Public Circular No. 16/92 dated 13.03.92 that degrees offered by the Open University are of the same level as that of other universities in Sri Lanka.

The academic departments of OUSL are grouped into four Faculties, namely Natural Sciences, Engineering Technology, Humanities & Social Sciences and Education. The departments of study under the Faculty of Engineering Technology at its establishment were Civil Engineering, Mechanical Engineering, Electrical and Computer Engineering, Mathematics and Philosophy of Engineering and Textile Technology (later renamed Textile and Apparel Technology). The Department of Agriculture Engineering (later renamed Agricultural and Plantation Engineering) was constituted later.

The Open University of Sri Lanka commenced operations in 1980 by converting the former Sri Lanka Institute of Distance Education. At the beginning the University obtained a grant from UNIDO to establish itself and the University began offering programmes under the Board of Management, Science and Technology. Textile studies was one of the sections under the MST. The first programme, a Certificate in Textiles was offered to employed students in 1982. All of the students of this programme were sponsored by the Sri Lankan Textile Industry. Later in 1986 the Board of Management, Science and Technology was converted to three Faculties, namely, Faculty of Engineering Technology, Faculty of Humanities and Social Sciences and Faculty of natural Sciences. With this conversion the Department of Textile Technology was established in 1986 and the department started offering the Diploma in Technology programme. Subsequently in the year 1995 the department was rechristened as Department of Textile and Apparel Technology. The restructured Diploma in Industrial Studies was launched by the Department in 2001 and the degree programme was launched in 2003.

The Department of Textile & Apparel Technology offers courses at certificate, diploma and degree level (both Bachelor of Industrial Studies and Bachelor of Technology) in various aspects of textile and apparel technology and engineering. All programs are presented through the open and distance learning mode as are many similar degrees offered the world over.

The current number of annual admissions to the Department is 1066. The Department claims that around 60% of this number is employed. However, the annual output is far less than the annual admissions for a variety of reasons. Students may enter the programme at different levels depending on their educational qualifications, and proceed up to the desired level.

The permanent academic staff in the Department comprises 1 Professor by merit, 6 Senior Lecturers, 3 lecturers, and 3 demonstrators and one Instructional Material Developer. The Department was recently given a cadre position for a professorial chair, which is currently vacant. The rest of the staff consists of 1 technical officer, 2 laboratory attendants, 1 labourer and 1 computer applications assistant for clerical work.

The Department is located in the Central Campus at Nawala, Colombo. It is housed in an area of about 800 square feet in which an office, staff computer room, staff rooms and laboratories are located. Day schools and other teaching activities are conducted using lecture theatres and classroom facilities provided by the Colombo Regional Centre of the OUSL. There are 26 personal computers and two laptops in the Department which are used by the staff. Students are provided with computer facilities at the main computer centre. It was noted that these

facilities are inadequate. However, the Department is privileged to possess a state of the art copying facility.

3. AIMS AND LEARNING OUTCOMES

3.1. Aims

The Textile & Apparel sector is the largest foreign exchange earning industry in the country, as well as being the largest employment provider among the manufacturing sector. While the number of qualified personnel occupying the higher level managerial positions is increasing, there is still a significant gap between supply and demand. The Department of Textile & Apparel Technology of OUSL seeks to meet this need through their programs.

In order to do so, the Department states the following aims to provide:
- certificate programmes in Industrial Studies conducted through distance-teaching methodologies to impart in-depth knowledge in specified fields and to develop skills;
- diploma and degree programmes in Industrial Studies conducted through distance teaching methodologies, to enable those engaged in the Textile and Apparel industry to upgrade their knowledge and carrier development;
- advanced certificate, diploma and degree programmes in Engineering Technology conducted through distance teaching methodologies to enable students to learn Engineering and Technical fundamentals of Textile and Apparel processing within a strong theoretical background;
- postgraduate diploma and degree programmes conducted through distance teaching methodologies to produce effective and efficient managers;
- diploma and degree programmes that include project work with research and exposure to the industry, thus enabling students to obtain knowledge on recent know-how and new technologies;
- certificate and diploma programmes that include industrial training allowing students to expose themselves to industrial practices that are followed in the local Textile and Apparel Industry that cater to international needs;
- programmes of study, that give the student the flexibility to progress at a pace of his/her choice in keeping with the time or financial resources available for study;
- Opportunities for those desirous of gaining knowledge in a specific subject area without enrolling for a programme of study leading to a formal qualification, by offering "stand alone" courses;
- short and extension courses conducted using conventional, face to face teaching methodologies in key areas of importance to the industry;
- a range of challenging learning opportunities within the modular teaching structure of the University allowing students to develop their academic interests and potential through curricula consisting of a set of compulsory and elective courses;
- opportunities for students to develop personal skills required for lifelong learning;
- encouragement to students to develop knowledge, creative ability, innovative thinking and transferable skills that will enable them to meet the needs of the prospective employers, and to contribute effectively in their chosen careers;
- a friendly and supportive departmental environment that encourages enthusiastic learning and satisfactory completion of programmes by students;

- departmental committee structures for effective organisation of teaching, assessment, review and quality assurance.

(Taken from the Department Self-Evaluation Report).

3.2. Learning Outcomes

On successful completion of either the certificate, advanced certificate or diploma or degree, or the post graduate programmes of study, students should have:

- gained knowledge and conceptual understanding of different areas of Textiles and Apparel based on programmes that provide courses in which the depth of study increases progressively from the lower level to the higher levels. (from certificate, advanced certificate, diploma, degree to postgraduate);

- learnt to apply the gained knowledge and know-how in working environment and research;

- developed the ability for critical, self-directed learning; acquired a range of personal and transferable skills, such as, analytical ability, computer literacy, data handling, interpretation and management, oral and written communication, independent thought, and gained experience in applying them to real situations.

A number of separate learning outcomes are listed in the Self-Evaluation Report for the different programmes.

4. FINDINGS OF THE REVIEW TEAM

4.1. Curriculum Design, Content and Review

The main focus of the curriculum is to provide knowledge, understanding and skills development to meet the challenges of the textile and apparel industry. The Department has formulated programmes under two different schemes, namely Industrial Studies and Engineering Technology.

The team is of the view that the programme has been organized so as to make suitable intellectual demands on students as they progress through the curricula. A wide variety of courses are offered with a multi-disciplinary approach, which is of great benefit to those intending to work in the textile and apparel sector. There is provision through the course design to go in-depth into specialist areas through the availability of a range of subjects in each area. The multiple entry-exit model gives for a great degree of versatility. The whole concept of the programme provides a greater possibility of developing self-learning skills than a conventional programme. A major plus point of the programme is its transparent and focused design and delivery due to the course materials and curricula being available beforehand to both students and staff.

The course content is presented in the faculty handbook with other relevant information. The course materials needed for the courses are distributed among the students in the form of books before the commencement of the course. The provision for delivering experimental curricula is commendable.

The Department offers a number of course units which have been designed to enhance critical thinking skills, leadership and management skills, problem solving skills, teaching and communication skills, presentation skills and writing skills. The final year research project helps the students to gain intellectual, analytical and other personal skills while enabling them to develop confidence in preparing for post-graduate studies. A number of innovative aspects were seen in the curriculum, such as the different options for carrying out the final project for those with different abilities, as well as the module on current topics in textiles and clothing, which has been designed to give much needed soft skills development. Employed students are able to choose problems from their work places for the project, which makes it more relevant to real life.

A commendable initiative noted by the team is the introduction of the "Learning to Learn" course, which introduces the student to the requirements of the open and distance learning system and how to get the most out of it.

The team noted that the courses on computer studies are optional to the students. The courses offered are merely computer literacy courses, with no programming involved, and the team was of the view that they were inadequate for courses in engineering technology. It was also noted that the lack of restrictions in offering courses could lead to students offering courses prematurely. In the discussion with the students it was noted that many students from non-science backgrounds found the foundation courses insufficient to lay the foundation to follow more specialist courses. It was also observed that provisions to develop teamwork skills have not been incorporated in the curriculum.

The curriculum was revised within the last 5 to 7 years, and is said to be according to industrial requirements as well as based on student feedback. It must be noted, however, that documentary evidence for industrial feedback was not provided.

No evidence was provided that the curriculum design, development and revision has been carried out by considering the accreditation requirements for the degree programme. It is advisable to consider such requirements during the next major curriculum revision if the programmes are to be considered on par with similar programmes offered nationally and internationally.

Overall, given some drawbacks, the team was of the view that that the Department is maintaining a vibrant approach towards Curriculum Design, Content and Review.

4.2. Teaching, Learning and Assessment Methods

All courses are taught using a combination of printed course materials, supplementary readings and face to face discussions through day schools, laboratory sessions and tutor clinics. The intended learning outcomes of the course and the assessment criteria are given before the commencement of the course in the faculty handbook.

Course materials are developed by course teams comprising members of the academic staff, academic staff of other universities and industry personnel. The team was of the view that a very thorough procedure has been followed in developing the course material. A comprehensive collection of audio visual material obtained from external sources is also used in teaching.

Laboratory classes are conducted in the Department laboratories. However, it should be noted that the Department is greatly hampered in this regard by the presence of largely outdated machines, a significant number of which are not in working order. The fact that only one technical officer is available for the entire range of laboratories is a matter of grave concern.

The method of evaluation adopted by the Department comprises continuous assessment through laboratory work in selected modules, tutorials and assignments and the year end examination. Evidence was produced to the team that the examination question papers at all levels had been moderated by senior academics from other universities and by industry personnel. Final examinations are conducted according to OUSL policies and are even conducted overseas through diplomatic missions for Sri Lankan students working in those countries.

The team noted with satisfaction that the Department is one of few in the Faculty of Engineering who have started offering courses online. All members of the staff have been requested to offer at least one supplementary course online. Since there are often delays in the printing of course manuals, the availability of online materials are a great advantage. However it is noted that most students are reluctant to access online material, assignments or notices due to the lack of computer facilities, inadequate computer literacy and other possible cultural and financial reasons.

The subject review was conducted during the examinations of the Faculty, and it was not possible to observe day schools, tutor clinics or laboratory sessions. Discussions with the students revealed the following:

- A gap of approximately 45 days exists between the handing over of the course materials at registration and the first face to face session with the resource person at the day school. Students found this unsatisfactory. However, it was found that this was due to the inordinately long registration period due to university constraints.
- The duration of the day schools was 1 ½ to 2 hours, during which a large volume was work was covered. The students found these inadequate, especially those students who had to travel long distances. The reason given for this was the lack of classroom facilities (for which the Department was dependent on common resources).
- The number of laboratory sessions for the field-related courses was felt to be inadequate. The team is of the view that a greater laboratory component with emphasis on advanced technology is needed for such a technological course.
- Students who gained enough marks from earlier assessments would absent themselves from later laboratory classes, which may not be conducive to complete assessment of knowledge.
- Many students from non-science backgrounds found the lack of explanation of technical terms a major drawback to understanding the course material.
- In the pattern construction course students were often expected to practise at home, which they found difficult to do without proper guidance. In addition the required skills were not properly evaluated.

A submission date for assignments is set, but there is no date of release of marks for the assessments. Whereas equations for the calculation for eligibility based on continuous assessment and projects were made available to the students, the team was of the view that these equations need to be reviewed, implemented and verified. No rationale was provided

for these equations, and it was found that in certain instances students who fared very well in most assessments were deemed ineligible due to failure in one aspect of the assessment.

The team is of the view that the teaching, learning and assessment for most courses have been designed presuming that most, if not all, students have industrial experience or exposure. However, the present situation seems to be different. In addition, the open learning concept allows for anyone with or without previous or present industrial exposure to enrol for courses. Therefore it is important that courses should cater to students from different backgrounds, and the teaching, learning and assessment should be modified to meet the needs of those without industrial background.

Overall, the team felt that in spite of the disadvantages placed on the Department by the lack of cadre, outdated equipment and restricted facilities, the Department was making a commendable effort to facilitate productive student learning through its teaching and assessments. However, the team also feels that there are a number of shortcomings indicated above which could be creatively overcome by the Department.

4.3. Quality of Students including Student Progress and Achievements

Recruitment and Admission procedure

The Department, in common with others in OUSL, follows the policy to allow any person wishing to do so, to follow any course at foundation level without any pre-qualification. Thus it is recognized that the quality of the students at least at entry level cannot be judged using the same criteria as for conventional universities. Students may enter the programs at different levels depending on their pre-qualifications and proceed to higher levels according to time, ambition, ability and competence.

It has been noted that the vast majority (83%) of the students have passed the GCE (Advanced Level) examinations, while only 7% have only GCE (Ordinary Level) qualifications. Students from any stream of study at secondary school level are free to register for the programs, which means that the students are at varied levels of knowledge in science and mathematics, which are basic to the courses offered by the Department. A number of students with diplomas in the field of textiles enter the degree program, while a few students with degrees in other fields also enter the degree programme for enhancement of career prospects.

The Department in its self-evaluation report states that 65% of the students registered for the year are employed. While noting that this could be an advantage in understanding the course content from an industrial perspective, it should also be noted that it need not necessarily be so.

Progress and completion

Unlike the degree programs offered by the conventional universities, the OUSL distant learning programs have not specified a time limit for the completion of the programs. Thus the completion rates may vary from programme to program, and in one instance a student had taken 25 years to complete her diploma. While acknowledging that this is part and parcel of the open and distance learning system, the team notes with concern the large gaps between the numbers enrolled, numbers eligible to sit for the final examination and the numbers who actually sit for the examinations. It is a positive trend that the eligibility percentage has

improved over the last three years at all levels. However, at higher levels, except at Level 5, the pass rate has declined over the last two years.

It was noted that many students who completed the academic requirements for some levels were unable to complete the programme as they had not completed the required industrial training components. This creates some doubt as to their industrial proficiency. The Department would do well to conduct an analysis on the causes for this phenomenon and evolve means of rectifying it.

Overall, the Department has produced 36 diplomates since 1992 and 12 graduates since 2003. The number of classes obtained has not been documented. While admitting the low rate of completion is an inherent feature of the open and distant learning system, the team also feels that a university needs to focus on producing more graduates and encouraging and facilitating faster completion rates.

4.4. Extent and Use of Student Feedback

Student feed back is obtained by informal discussions and on rare occasions by using questionnaires. Feedback obtained at the Faculty Students Forum and the Faculty Board is discussed at the Departmental staff meeting.

Experimental copies of unedited course material are given to students and further developed subsequently based on feedback from students as well as others.

While questionnaires are distributed for feedback purposes these seem to be more to obtain student background information at the commencement of the course, or in view of problems which crop up from time to time. While acknowledging that the staff are overloaded, partly due to the questionable cadre allocation and due to the nature of the work involved, it is desirable that the eliciting and analysis of feedback be a regular practice. The staff of the Department could look for opportunities to obtain such feedback.

The team were greatly impressed that the feedback obtained through the available fora were discussed in depth and acted upon promptly. A comprehensive list of such actions are given in the self-evaluation report and the team is of the view that the Department demonstrates a positive attitude to receiving and acting on student feedback.

4.5. Postgraduate Studies

At present the Department does not conduct any taught postgraduate courses. However, a Postgraduate Diploma in Technology & a Master of Technology programme is due to commence from academic year 2009, subject to cadre availability. The curricula of these programmes have already been approved by the Faculty and the Senate. The team is of the opinion that the process of developing the curriculum of these courses has been carried out thoroughly.

The Department offers opportunities for research degrees, and has produced one MPhil degree in 1997, the candidate being a member of the academic staff. At present there is one candidate registered part-time for MPhil (since 2001), who has had many years of experience in the apparel industry.

While commending the Department for its commitment to research in spite of the many drawbacks such as work overload, lack of facilities and the absence of a proper research culture, the team noted the following areas of concern:

- The progress review procedure of the university seems to be inadequate. The candidate is required to submit annual reports and there does not seem to be a formalized progress review panel evaluation.
- Guidance and direction, especially in terms of the rules and regulations of the degree program, appeared to be inadequate.
- The duration of the research degree is not clearly defined.

The team is of the view that given the current situation, the Department is not in a position to offer research opportunities to fulltime candidates or to candidates from outside the textile and apparel sectors.

4.6. Peer Observation

The Department does not conduct regular classroom lectures. The team was informed that no formal peer observation of teaching is carried out, at least of the academic staff of the Department. The team was however informed that at present such peer observation is done only for outside resource persons teaching for the first time.

However, the system has an inbuilt mechanism for formative peer review, namely the course team concept. Due to this system all course material is reviewed by other academics and feedback given. This contributes to the development of the academic being reviewed. However, such feedback has not been properly documented. No records were maintained to show that verification of improvements after peer review is being conducted.

The team was however of the view that creative measures could be taken to obtain peer review of teaching, such as at laboratory sessions and day schools. A very structured and focused review procedure should be developed in order to facilitate the peer review of academics, rather than rely solely on subjective evaluations.

4.7. Skills Development

The curriculum of the Department has been developed in such a way as to facilitate the development of technical as well as transferable skills. As stated in the self-evaluation report the curriculum is designed to impart skills through laboratory classes in specific competencies. In practice, however, due to most machines not being usable, the actual development of such technical skills is subject to question.

The final year projects are well designed with a separate module for project identification and literature survey. The projects provide for developing the skills in research planning, conducting surveys, data analysis, report writing and oral presentations. In addition, the compulsory course on current topics in textile and apparels is well designed and gives the student ample opportunities to enhance the skills of information gathering and presentation.

Two comprehensive modules are offered to provide hands on training on workshop equipment to improve overall technical skills. Training standards are also formulated to enhance the training experience. However, since working students are exempted from these

modules, it is not clear to what extent the development of expected skills and competencies in such students are evaluated.

As stated earlier, the opportunities in the curriculum for computing skill development is inadequate, as are the facilities for the same provided by the university. It was noted that the Elementary Computer Laboratory had only 40 computers to be used by the entire student population of the university, and at the time of the review the team was informed that half that number had been out of order for a long period of time.

While courses are offered for the development of English language skills, these courses are optional for the students, and the student subset met by the team was not very comfortable communicating in English.

It is also noted that there are no modules designed specifically to enhance teamwork skills which are of great importance in the apparel industry.

4.8. Academic Guidance and Counselling

Due to the complexity of contemporary society, students require counseling more than ever, to enable them to make appropriate life, education and career choices and acquire the right skills for their psycho-social development of this country and for a successful adjustment to their economic environment. As guidance programs play a central role in student achievement and improvement of the Department, all academic staff are involved in Academic Guidance and Counseling processes at various stages of the educational activities initiating from registration of a prospective student.

At every step, the students are provided with all the necessary guidance in the form of printed documents. It should be noted that the career guidance and counseling programs at this Department needs to be more focused to aim to help students make more informed and better educational and career choices. It was also noted that in some cases, due to lack of staff, students seeking enrolment to the Department are on occasion counseled by staff of other departments who may not be aware of all requirements and details of the Department.

The review team also noted that the counseling provided at the registration period (45-day) is not well focused to cater to the services for students who are enrolling with a background other than physical science disciplines (bio-science, commerce and arts).

In the discussion with the students it was noted that they were very happy with the level of guidance provided by the staff on request. The team noted with appreciation that many staff members went out of the way to provide guidance on requests from the students, even going to the extent of providing personal contact details.

The team further noted that the successful development and implementation of effective guidance and counseling programs at the Departmental level stems from strong guidance and counseling leadership, leadership which provides regular ongoing training, resources, and technical support as well as legislative and policy advocacy at the University level. Further the presence of experienced, professionally trained guidance supervisors across the University is perilously low.

5. CONCLUSIONS

5.1. Curriculum Design, Content and Review

Strengths/Good practices:

- Course teams to develop curriculum.

- Wide variety of subjects providing a multi-disciplinary approach.

- Provision to go in-depth in specialist areas.

- Versatile curriculum with multiple entry and exit points.

- Transparent design and delivery through the provision of course materials, learning outcomes and objectives.

- Innovative schemes for final year projects and other courses lend toward the development of non-technical skills.

Weaknesses:

- Inadequate computer courses for a technological program.

- The content of certain foundation courses are found to be too difficult for those with non-science backgrounds.

- Modules to develop teamwork skills are not developed.

5.2. Teaching learning and assessment

*Strengths/Good practices***:**

- Well prepared course material available to students.

- Students are continuously assessed during a semester.

- Final examination question papers moderated by external examiners

- Online courses are being provided.

Weaknesses:

- The scheduling and conduct of day schools have a number of drawbacks.

- Eligibility criteria are questionable in a number of instances

- The assessment schemes for some modules takes much for granted.

5.3. Quality of students including student progress and achievements

*Strengths/Good practices***:**

- Vast majority have GCE Advanced Level qualifications.

- Eligibility percentage has increased over the last three years.

Weaknesses:

- Significantly low output in terms of degrees and diplomas.

- Students are able to proceed to higher levels without properly structured practical training.

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

*Strengths/Good practices***:**

- Student feed back is obtained by informal discussions and by using questionnaires.
- Facility to meet the lecturers at any time
- Many instances of swift action based on student feedback.

Weaknesses:

- No formal assessment of student feed back
- No regular practice of obtaining formal feedback.

5.5. Postgraduate Studies

*Strengths/Good practices***:**

- Taught course curricula comprehensively developed with industrial assistance.

Weaknesses:

- Inadequate facilities for research.
- Lack of proper guidance regarding administrative regulations and inter-disciplinary aspects.

5.6. Peer Observation

*Strengths/Good practices***:**

- Peer review of course materials.
- Observation of first time visiting lecturers.

Weaknesses:

- No regular peer observation

5.7. Skills Development

*Strengths/Good practices***:**

- Creatively designed modules for developing soft skills.
- Well-structured workshop training programme and final year projects.

Weaknesses:

- Inadequate provision for development of IT skills.
- No provision for the development of teamwork skills.

4.8. Academic Guidance and Counseling

*Strengths/Good practices***:**

- All academic staff members are involved in Academic guidance and Counselling

- Academic staff members go out of their way to respond to requests for guidance from students.

Weaknesses:

- No proper strategy to overcome problems due to inadequate staff for counselling at registration.

- Lack of professional counselling at university level.

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	Satisfactory
Extent and use of student feedback, qualitative and quantitative	Good
Postgraduate studies	Satisfactory
Peer observations	Good
Skills development	Good
Academic guidance and counseling	Satisfactory

The overall judgment is suspended

6. RECOMMENDATIONS

1. The review team recognises the difficulty of the limited staff in the Department providing academic counselling at registration. However, in order to overcome any lapses due to inadequate counselling by members of other departments, it is recommended that a Departmental handbook be prepared and made available.
2. The current day school system seems to be having a number of significant drawbacks. Restructuring the scheduling, duration and mode of delivery at the day schools to be more productive and to attract better participation should be seriously considered.
3. The information technology component is inadequate for an engineering or technology degree program, and should be revised to include computer programming components.
4. Laboratory facilities are woefully inadequate, and the Department cannot be faulted for this. However, avenues should be explored (for example obtaining the help of alumni) to raise funds to upgrade the laboratories.
5. The Department should creatively think of ways to obtain regular student feedback and conduct peer observation, and analyse and take action on the same.

6. Modules to improve teamwork skills as well as activities to enhance social engagement and social harmony should be developed.
7. New foundation courses should be introduced or the existing courses modified to cater to the many students who come from non-science backgrounds.
8. The Department should seriously look into the reasons for low completion rates and high drop out rates, and devise mechanisms to remedy them.
9. The University should look into ways of improving the common amenities to both students and staff.
10. The cadre allocation seems to be unreasonable and should be reconsidered to enable the Department to recruit more staff to both academic staff and technical officer grades.

While acknowledging the practices and restrictions of the open and distance learning principles on which the Open University courses are based, the team formed the impression that the Department had allowed these to become more an obstacle than they should. The Department should think out of the box and look at ways of moving forward in spite of these restrictions.