SUBJECT REVIEW REPORT

DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

FACULTY OF ENGINEERING
UNIVERSITY OF PERADENIYA

4th to 6th May 2011

Review Team :

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1. SUBJECT REVIEW PROCESS

The subject review process of the UGC evaluates the quality of student learning process within a specific subject or discipline in terms of its management and quality assurance aspects at its study program level. The review evaluates the quality of education, focusing on the student learning experience and on student achievement related to both undergraduate and taught postgraduate programs. This report reviews the quality and management of academic programs delivered by the Department of Electrical and Electronic Engineering (DEEE) in the Faculty of Engineering at the University of Peradeniya.

The review was carried out following the guidelines established by the CVCD and the University Grants Commission in the Quality Assurance Handbook for Sri Lankan Universities, published in July 2002.

The review was carried out during 4th to 6th May 2011 by the team of four members, Prof. Kapila Jayasinghe (Dept. of Electronic and Telecommunication Engineering, University of Moratuwa), Prof. Lanka Udawatta (Dept. of Electrical Engineering, University of Moratuwa), Dr. K. Pirapahran (Dept. of Electrical and Information Engineering, University of Ruhuna) and Mr. Ajith. P. Tennekoon (Ceylon Electricity Board).

Review team visited the DEEE on 4th May and had meetings with Professor S.B.S.Weerakoon, the Dean of the Faculty of Engineering, and University of Peradeniya at the Dean's Office where he gave a brief description of the history of the Faculty and its future development trends. Subsequently the review team met the Vice Chancellor Professor S.B.Abayakoon at his office. Vice Chancellor explained briefly the development plan of the University along with the corporate plan.

Head of the Department, Dr. A. Atputharajah made an excellent presentation initiating the evaluation process, which covered all the information pertaining to Staff and Facilities, Curriculum design contents and reviews, Assessment methods, Evaluation procedures, Teaching/Learning process, Postgraduate activities etc. Following the presentation there was a very cordial meeting with the members of the staff where reviewers had an opportunity to discuss different aspects of the quality assurance program.

Subject review process at the DEEE of the University of Peradeniya (UP) was conducted following the guidelines provided in the Quality Assurance Handbook for Sri Lankan Universities and was reviewed at the Departmental level according to the categories listed below as given in the Self Evaluation Report (SER):

1. Curriculum design, content and review,
2. Teaching, learning and assessment methods,
3. Quality of students including student progress and achievements,
4. Extent and use of student feedback (both qualitative and quantitative),
5. Postgraduate studies,
6. Peer observation,
7. Skills development and
8. Academic guidance and counselling.

The agenda of the three-day visit is given in Annex 1.

The information related to the above eight aspects were collected by having discussions with the Dean, Head of the Department, members of the academic (see Annex 2) and non-academic (see Annex 3) staff, a group of 52 undergraduate students, postgraduate students (see Annex 4), members of English language teaching unit and also Director, industrial training and career guidance unit, by observation the teaching process (EE592-Powersystem Control and Analysis and EE329-Product design and Management), by observing the facilities at the DEEE and the Faculty (see Annex 5), by monitoring the undergraduate project presentations and demonstrations and by examining the documents provided by the DEEE.

Each of the eight categories was judged as good/satisfactory/unsatisfactory, noting the strengths, good practices and weaknesses in each of these.

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

University Peradeniya

The University of Peradeniya is the biggest residential University in Sri Lanka with a student population of over 7800. It was inaugurated in Peradeniya in 1942 with its first Vice Chancellor Sir Ivor Jennings who became the Vice Chancellor of University of Cambridge after his term of office here in UP. Today the University has 8 faculties, namely; Agriculture, Allied Health Sciences, Arts, Dental Sciences, Engineering, Medical, Science and Veterinary Medicine and Animal Science. Further the University also has two postgraduate institutes (Postgraduate Institute of Science – PGIS and Postgraduate Institute of Agriculture – PGIA) and the best Information Communication Technology (ICT) Centre in the country.

Faculty of Engineering

In December 1949 the Government requested then University of Ceylon to set up a Faculty of Engineering by 1st July 1950 with the decision that permanent home of the new Faculty was to be in the residential Campus in Peradeniya. Since the necessary infrastructure was not available in Peradeniya, the faculty started its functions in Colombo making use of the laboratory facilities at the Ceylon Technical College, while supplementing them with its own equipment. Infrastructure development of a floor area of about 18,500 square meters in Peardeniya was started in parallel and in 1964, it was moved from Colombo to Peradeniya. Today the Faculty of Engineering has eight Departments. Namely: Civil Engineering, Chemical and Process Engineering, Computer Engineering, Engineering Mathematics, Engineering Management, Electrical and Electronic Engineering, Mechanical Engineering and Production Engineering.

Department of Electrical and Electronic Engineering

Department of Electrical and Electronic Engineering was a founder department along with Civil Engineering and Mechanical Engineering when the Faculty of Engineering was started in 1950. From the time of initiation in 1950 till today, the number of undergraduates absorbed to follow the Electrical and Electronic Engineering (EEE) degree program was increased in several steps to stand presently at 100. The Faculty of Engineering used to conduct the academic program under the old curriculum (year-end examination system) until the intake in 2001. During the early stages under this old curriculum, EEE specialization was done only after two years of common study program. However, as the field of EEE rapidly grew over the last few decades, DEEE decided to absorb the undergraduates specializing in EEE right

after the first year starting from 1998 intake. The last group of undergraduates who followed this interim curriculum graduated in 2004. In compliance with the major university reforms, Faculty of Engineering also changed over to semester system starting from 2001 intake. Since then, 5 groups have graduated under the new semester based curriculum.

3. AIMS AND LEARNING OUTCOMES

The review team focused its attention on the vision and mission of the particular higher education institute and how the specific study program has designed its aims and learning outcomes to match the overall vision and mission of the institute.

Vision and Mission

University of Peradeniya
The vision of the University is to *"Be a center of excellence in higher education with national and international standing"*. Its mission is *"To contribute to the development of a knowledge based society with social sensitivity, ethical rectitude and economic prosperity through education, research dissemination of knowledge and active participation in national policy formulation and development in an efficiently managed, intellectually stimulating, and harmonious University environment"*.

The Faculty of Engineering
The vision of the Faculty of Engineering is *"To be a centre of excellence in engineering education and research in South Asia. Also to be the best student representative of geographical and cultural diversity, academic staff of the highest caliber and excellent learning and research environment will ensure academic excellence and highest professional standard, nationally and internationally"*. Its mission is *"to acquire, promote, develop and disseminate knowledge of engineering sciences and its application to improve the quality of life and, in particular, to equip present and future generation with skills and attitudes to attain competence as professional engineers and to interact with industry and community for sustainable development of humankind"*.

The Department of Electrical and Electronic Engineering
The vision of the EEE degree program is to *"be the premier institution for learning, scholarship and research in Electrical and Electronic Engineering and related fields in Sri Lanka, developing students for leading positions in academia, Government and industry, and become world-renowned in innovative research"*. Its mission is *"to educate students in the fundamental and applicable principles of Electrical, Electronic and Computer Engineering necessary to solve future technologically important problems as well as the application-oriented needs of industry, business, and Government in Sri Lanka by attracting the best students in the country with potential for intellectual development, innovation and leadership by creating a challenging yet friendly and supportive environment that encourages students, faculty and staff"*.

3.1 Aims

The following are the major goals of the EEE Degree program arising out of the mission statements of the University, Faculty and Department:

- To become the best EEE degree program in the country that produces graduates with confidence in handling up to date technology.
- To establish a solid link with local industry by becoming a centre of excellence in applied research and product development.
- To create an advanced laboratory facility that will give EEE undergraduates the best possible practical exposure that they can obtain in a University.
- To produce matured graduates in social and intercultural sense by proper guidance of their careers during their University life.

3.2 Learning Outcomes

To correlate with the mission statements of the University, Faculty and Department, the DEEE conduct programs to produce graduates who would

- have a sound knowledge and understanding of theory, laboratory practice, and design in EEE.
- be able to apply the knowledge to the practice of EEE.
- be capable of managing and carrying out tasks as an individual and as a member of a team.
- be able to present findings and information in the form of reports, drawings and presentations.
- have a high level of intellectual, practical and transferable skills.
- be able to interact effectively with their team members, colleagues, clients and with the society as a whole while recognizing the value of their work and ethical framework.
- be alert to the various aspects of engineering practice in Sri Lanka and elsewhere.
- acquire an ethical and technically sound professional attitude.
- posses the capabilities for providing professional engineering solutions, decision making and management.
- be sensitive to social, environmental, socio-economic and political aspects of engineering practice.

4. FINDINGS OF THE REVIEW TEAM

The findings of the review team during the visit to the Department of Electrical and Electronic Engineering of the University of Peradeniya from 4th to 6th May 2011 are summarized in this section of the report. They are classified under the headings through 4.1 to 4.8.

- Curriculum design, content and review
- Teaching, learning and assessment methods
- Quality of students including student progress and achievement
- Extent and use of student feedback
- Postgraduate studies
- Peer observation
- Skills development, and
- Academic guidance and counselling.

4.1 Curriculum Design, Content and Review

The undergraduate curriculum of the DEEE, University of Peradeniya has been developed in order to produce quality graduates in the general field of electronic and electrical Engineering. The electronic and electrical engineering curriculum puts emphasis on both theory and practical aspects. Moreover, in the design of the content, early part of the curriculum focuses on developing theoretical knowledge and skills whereas later part is more towards the applications and projects. Once the students successfully complicated this programme, they will develop the necessary skills and attitudes in order to apply the knowledge and solve a wide range of problems. What follows are the good practices seen in the Curriculum Design, Content and Review.

- In the undergraduate programme, the DEEE has clearly identified the general programme during the first year and specialization programme in the remaining three years. Moreover, when it comes to the later part it brings the core modules and electives which enhance the course content towards the present needs of undergraduate education of EEE.
- The content of each course has been decided ensuring fundamental scientific principles required for apprehending the subject together with suitable continuous assessment schemes.
- To evaluate curriculum design and the course content, one of the best methods is to observe the undergraduate projects completed by the students. Since it will clearly reflect the knowledge and skills gained through the study programme. According to our judgment, most of the projects completed by the undergraduate students were at a very high level. This shows and proves the emphasis the richness of both theory and practical aspects of the curriculum design and the course content.
- In order to develop the curriculum and course content, DEEE, University of Peradeniya has conducted several workshops and discussions in order to obtain various feedbacks. In fact, they have obtained the feedbacks from the faculty members, industry experts, students, and graduates who passed out from the DEEE, University of Peradeniya. This shows that they have considered all the aspects of curriculum and course content.
- Laboratory classes and experiments introduced by the Department of Electronic and Electrical Engineering are well-designed and well-matched with the theory in the undergraduate curriculum. However, lack of funds for the new equipment and replacement of old equipment is presently a burning issue.
- In the present curriculum, Department of Electronic and Electrical Engineering has introduced all the soft skills which are demanded by the industry and society. It was evidenced during the student presentations and discussions.
- The curriculum of DEEE has already been accredited by the Institution of Engineers Sri Lanka (IESL)

What follows are few weaknesses seen in the Curriculum Design, Content and Review.

- In designing the curriculum, DEEE organized a forum in order to bring the feedbacks from the industry. However, it was difficult to trace the records of minutes and so on. It is recommended keeping all these records for reference.
- It was told during the team visit that few examination papers were reviewed by external examiners. However, there were no evidences to show that the examination papers have

been reviewed by external examiners (internationally or from outside University of Peradeniya). In order to obtain external comments on examination papers, it is recommended to appoint external examiners through the senate and record all the feedbacks.

- From the student's point of view, they requested that more electives should be offered by the department. However, it should be decided by the department taking the staff and other resources into the account.

Taking all these facts into consideration, in conclusion, it is the view of the Review Team that the present status of the "Curriculum design, content and review" of the DEEE can be judged as ***GOOD***.

4.2 Teaching, Learning and Assessment Methods

The DEEE uses several standard teaching, learning and assessment methods. The teaching mainly is carried out through lectures conducted in lecture halls, which were observed by the review team. The lecturing environment seemed to be good with possibilities to use audio-visual aids whenever necessary. The team also visited some lectures conducted by the faculty members of the department and they found to be of sufficient interaction with the students. The department also has launched a web based learning system where, the lecture notes are uploaded to the web prior to the particular lecture so that the students can go through them and come prepared.

The computing facilities seemed to be adequate for all the students to have access to the teaching material published on the web whenever needed. In addition to the main library facilities, students also have access to a smaller collection of books in the department. There is an arrangement for the students to use the laboratories after hours through an approval procedure from the head of the department. Thus, the team concluded that the department has been able to provide good accessibility of laboratories for the students.

The standard assessment methods such as tutorials and assignments, interviews, mini project demonstrations and presentations, mid- and end- semester examinations are used by the department for assessing the performance of the students. The assessment process found to be in proper order and particularly with undergraduate project where a group of students work together, the department has been successful in evaluating the individual performance in a satisfactory manner so that individual performance within the group work is duly assessed.

The following good practices are observed in the Teaching Learning and Assessment methods

- Staff commitment and dedication is commendable. It was evident that staff had to spend extensive amount of time in academic activities, both formal and informal.
- Departmental library is seen as a useful resource for students.
- The arrangement to for students to use the laboratory after hours.
- Moodle system is adopted in the department for teaching and learning.
- Students are assigned work to do on their own as part of course work with deadlines.
- It is commendable that the Department is getting support from the industry to improve physical facilities for student projects.
- Visit by staff to the training places and the subsequent evaluations can be considered effective mechanisms to improve attendance during student training.

On the other hand the following drawbacks also observed by the review team.

- Laboratory facilities and equipment need to be expanded and improved to facilitate a quality engineering education.
- A mechanism needs to be implemented to keep all moderated papers and moderators' comments.

The Team is of the view that the teaching, learning and assessment methods currently in place are adequate to achieve the objectives that the Department had set for itself. Considering the above facts the review team is of the opinion that the overall achievement under this aspect is considered as ***GOOD.***

4.3 Quality of Students, including Student Progress and Achievements

Based on the statistics of university grant commission, engineering is field of specialization where best students of A/L mathematics stream are attracted. Hence Engineering faculty of University of Peradeniya gets the best students for their engineering degree program. Review team noted the best students of the engineering intake to university of Peradeniya qualify to follow the program offered by the Department of Electrical and Electronic Engineering. This fact is evident from the data provided in Table 6.1 of the self evaluation report where students GPA is above 3.25 for batches E/03, E/06, E/07 and E/08 while it is slightly below for batched E/04 and E/05.

Students who are admitted to the DEEE receive a good academic program having lectures, practical classes and project work. Review team observed the delivery of lectures, conduct of practical classes and demonstration of student projects. The lectures were conducted with printed notes and visual aids. Practical classes were conducted with proper instruction sheets. Student's projects were carried out in teams with proper load sharing among students and with good interaction with staff members of the department. Most of the graduates find jobs before or soon after the graduation in reputed institutions. It shows the quality of the students and the demand for them in the job market. Since the DEEE is the most desired department amongst the student in the university, the students from DETE feel the self satisfaction to be a member of this department. Hence review team noted that student's progress within the department is very good.

Review team noted that students achievement are at very high level as these students have managed to receive IESL Gold Award for the Best Undergraduate Project, Best Paper Award from the IET YP Annual Technical Conference.

Based on the observations, review team would like to state its observation and recommendations as the following:

- Maintaining the employment records of the past graduates will contribute to the student guidance which ultimately improves progress rate and achievements.
- The completion/graduation rate has also been excellent in the DEEE with almost no cases of failures or non-completions.

Considering the above facts the review team is of the opinion that the overall achievement under this aspect is considered as ***GOOD***.

4.4 Extent and Use of Student Feedback, Qualitative and Quantitative

There are clear evidences that the student feedback has been obtained in various formal and informal ways in the department. Feedback is obtained using questionnaire at the end of each semester. Then these are summarized and sent to the relevant lecturer for follow up actions. In addition, minor changes are also evident annually in the syllabi based on the student feedbacks by a team of staff members subject to the approval of the Faculty Board and the Senate. Student feedbacks are also addressed during major curriculum changes subject to the approval of the Academic Development and Planning Committee (ADPC), the Faculty Board and the Senate.

Students have stated that there are instances where follow-up actions have been taken by the individual staff members based on their feedback. However, since there are no standard procedures maintained about the follow-up actions in the department based on the students' feedback, the review team suggests having a dynamic mechanism to ensure the follow-up actions.

It is interesting to note that students have direct number dialling facility and email to contact the staff members to discuss matters of concern. It is one of the good practices observed in this Department.

In addition to above, various activities have been organized by the department to enhance the student-staff and staff-industry interactions. There were clear evidences of Field trips, IEEE and IET society activities, Social activities, Industry day, Exhibitions and Local/International conferences conducted in the past to improve the staff-student interaction which is one form of obtaining the informal feedback from students.

Based on the observation, it is the view of the review team that the present status of the extent and use of student feedback (qualitative and quantitative) adopted by the members of the staff of the department is judged as ***GOOD***.

4.5 Postgraduate Studies

The Department of Electronic and Electrical Engineering, University of Peradeniya is conducting both research based and taught course (with a research component) based postgraduate programmes. They offer the following five programmes:

1. The post The Postgraduate Diploma in Engineering (PG.Dip.)
2. The Degree of Master of the Science of Engineering (M.Sc. Eng.)
3. The Degree of Master of Science (M.Sc.)
4. The Degree of Master of Philosophy (M.Phil)
5. The Degree of Doctor of Philosophy (Ph.D.)

In 2001, Department of Electronic and Electrical Engineering has started its postgraduate programme with a major taught course component. The curriculum is well-designed and it provides a rich foundation for the postgraduate students, especially covering both theoretical and practical aspects of general Electronic and Electrical Engineering. Academic staff with diverse backgrounds and experience is an asset to all four programmes. Moreover, laboratory facilities can provide a rewarding environment to the students. Application procedure,

selection criteria, curriculum, fields of specialization, and other details can be accessed to the prospective candidates.

However, the completion rate of the taught course programmes is not up to the expected level. In fact, the completion rate of the students of taught courses is below 10% when it comes to the overall completion rate. This is not an acceptable level as far as the overall quality of the postgraduate programme is concerned. Therefore, it is recommended to introduce a progress review and monitoring mechanism in order to bring them to the regular stream and increase the completion rate.

Furthermore, it is noted that the research students are having difficulties in accessing latest technical papers, especially the latest international journals and international conference papers. In fact, this is one of the imperative factors of any successful research project. It is also noted that the lack of effective coordination between the faculty library and students has resulted further difficulties in accessing desired literature for the research projects. Thus, it is recommended to introduce a proper mechanism in order to improve the accessibility of required literature for the research projects, especially the latest research articles.

The review team would like to make the following observations and recommendations

- Improve the coordination between faculty library and postgraduate students to enhance the access of the available research materials through inter-library loan facilities.
- Academic staff should work towards developing research proposals to obtain funds thereby enabling them to attract more full-time students as well as to support the present students.
- DEEE should enhance the effectiveness of the progress monitoring of the research students so that completion rate can be increased.

In conclusion, it is the view of the Review Team that the present status of the postgraduate studies of the department of Electronic and Electrical Engineering can be judged as ***SATISFACTORY***.

4.6 Peer Observation

Peer observations for almost every staff member in the department have been carried out. It should be commended that a separate Quality Assurance Cell has been established in the faculty to look in to these quality maintenance activities as well as to prepare guidelines and a common questionnaire for the peer observation activities. On the peer review form, it is better to have a column to describe about the follow-up actions from the peer once the reviewer and the peer have discussed on the comments of reviewer.

Also it is a good practice that during the academic staff development programme for newly recruited staff members, conducted by the Staff Development Centre, the staff members are made to see their own teaching on recorded video that provides them an opportunity for the self judgment of their teaching.

Even though, the practice of moderation of question papers is carried out, second marking of the answer scripts have not been carried out. The review panel suggests implementing an appropriate mechanism to ensure this procedure. It is suggested to appoint external moderators in addition to the internal moderators for the exam papers as well as to send marked exam papers for external examiners' comments. Although, it is difficult to adopt the

comments of external moderators and examiners due to the time limitations in the semester system, their comments may help to improve the quality of the question papers and marking answer scripts in the subsequent attempts.

It is the view of the review team that the present status of the peer observation adopted by the members of the staff of the department is judged as ***GOOD***.

4.7 Skills Development

The activities carried out by the Department of Electrical and Electronic Engineering for skill development has several facets. Review team noted that they commence the skill development from the first year onward. During the orientation program communication skills, problem solving skills and computer application skills are developed. During the general program workshop skills, drawing skills analytical skills and communication skills are developed. Further apart from the skills development through the regular program, department has facilitated students to improve their skills through active participation in student clubs, societies and organization. Industrial training helps students to interact with industry and leads them to develop their management, leadership and entrepreneurship skills. In addition, non-technical courses are also offered to improve the knowledge in personal development, economics, finance, management and entrepreneurship. Due to the facilities existing in the university, many students seem to get involved in non-academic extracurricular activities and improve their other skills such as sports, aesthetic activities and etc.
Students are encouraged to participate in social activities to improve their leadership and managerial skills.

Review team noted that department has taken steps to develop skills in following areas:

- Balanced knowledge between theory and practice
- Managerial
- Entrepreneurship
- Intellectual & Communication
- Leadership & Social responsibility
- Group working

The Team views the achievements of the Department on this regard are commendable. Considering the above facts the review team is of the opinion that the overall achievement under this aspect is considered as ***GOOD.***

4.8 Academic Guidance and Counseling

Faculty of Engineering provides a Student Hand Book to all students when they get admitted. The Hand Book is updated annually therefore, up to date information is available. A senior student counsellor and number of counsellors have been appointed for the Faculty of Engineering to handle the non-academic student matter. In addition, two professional counsellors are appointed for the University to provide professional counselling for the needy students. Further, every student is assigned an academic advisor to discuss the matters related to academic activities. Academic advisors help the students in selecting elective modules and balancing their work load. Moreover, a senior academic is appointed as director, industrial training and career guidance, to direct the student for industrial training and career development.

Review team would like to state its observation and recommendations as the following:

- The students contact the respective teachers over the e-mail regarding academic activities. It is noted as a good practice to improve the staff student relationship and the teaching learning experience.
- Appointment of all staff members as academic advisors and assigning each of them an equal number of students may help to improve the student advisory set up.
- The university provides accommodation for most the students within the university premises. This helps the students to have easy access to facilities within the university.
- Some of the student counsellors have obtained the professional training for counselling. It is the uniqueness of this university and helps many students to get proper counselling.
- Students get the help from teachers of the English language unit when they write industrial training reports and undergraduate project reports.

Considering the above facts the review team is of the opinion that the overall achievement under this aspect is considered as ***GOOD.***

5. CONCLUSIONS

Curriculum Design, Contents and Review:

The DEEE has maintained a positive approach in Curriculum Design, Content and Review from the inception of the Department following an approach comprising defining the aims and learning outcomes, taking into account the opinion of all relevant stakeholders. Moreover, new specialization modules had been introduced demonstrating the dynamism of its nature. DEEE has provided balanced curricula at all levels of study programs with an open structure permitting the choice of specialization within the broad area of EEE. Regular curriculum revisions have been made in the past and there is a systematic plan laid down indicating as to how the DEEE would look into the future in this regard. Further, IESL accreditation has already obtained to ensure the quality of the programme. Attention should be paid to the study program philosophy of postgraduate and also the possibility of looking into the feedback of Alumni.

Judgment: **Good.**

Teaching, Learning and Assessment Methods:

The course material in general is of good quality in terms of content and structure, and falling in line with other universities. The method of evaluation adopted by the Department comprises continuous assessment through laboratory work in selected modules, tutorials and assignments, and the mid- and end-semester examination. The staff commitment in teaching and evaluation is commendable. The record keeping of Question papers/Model answers are almost comprehensive but moderation records are not complete. Even though some of equipment in certain laboratories (of basic level courses) is outdated DEEE is using them to their fullest potential. However, recently developed laboratories could do better to utilise their potential focusing more on industry oriented models and activities.

Judgment**: Good.**

Quality of Students, including Student Progress and Achievement:

Best students of the faculty of Engineering are attracted to DEEE. Almost all the graduates have found rewarding employment in both public and private sectors. Undergraduate projects have been awarded many nation awards that ensure the quality of the graduates.

Judgment**: Good.**

Extent and Use of Student Feedback:

The collection of feedback information and their compilation by the DEEE on evaluation of Teacher performance is well developed. However, Practical sessions and Field visits evaluations are not properly carried out. A more accountable way of analysing the feedback and using such information in all teaching/learning activities should be implemented.

Judgment: **Good.**

Postgraduate Studies:

The Department of Electronic and Electrical Engineering, University of Peradeniya is conducting both research based and taught course (with a research component) based postgraduate programmes. However, the completion rate of the taught course programmes is not up to the expected level. It is identified that DEEE did not have an effective progress monitoring mechanism which is the main reason for the low completion rate.

Judgment: **Satisfactory.**

Peer Observation:

Peer observations for almost every staff member in the department have been carried out. However, there is no system to monitor the follow-up actions taken by the individual staff members. In addition, even though, the practice of moderation of question papers is carried out, second marking of the answer scripts have not been carried out.

Judgment: **Good.**

Skills Development:

Engineering and transferable skills development is properly addressed in the teaching/learning process of DEEE. Due to the facilities existing in the university, many students seem to get involved in non-academic extracurricular activities and improve their other skills. Students are also encouraged to participate in social activities to improve their leadership and managerial skills.

Judgment: **Good.**

Academic Guidance and Counseling:

The mechanisms that are in place for academic guidance and counselling appear to be very effective. They vary from very generic mechanisms at Institute level to appointment of individual staff members to students. In addition, some of the student counsellors have obtained the professional training for counselling. However, the role of the career guidance unit is not known to many students.

Judgment: **Good.**

Based on the observations made during the visit, the eight aspects are judged as follows:

Aspect Reviewed	Judgement
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, Qualitative and Quantitative	Good
Postgraduate Studies	Satisfactory
Peer Observation	Good
Skills Development	Good
Academic Guidance and Counselling	Good

6. RECOMMENDATIONS

The review Team makes the following recommendations to improve the quality of the programme.

- DEEE should enhance the effectiveness of the progress monitoring of the research students (postgraduate) so that completion rate can be increased.
- Some of the physical facilities available in the laboratories of undergraduate programme are not up-to-date. Moreover, recently established laboratories need more equipment to perform quality research and consultancy to the industry.
- Action to ensure higher level of involvement of the staff in postgraduate programs, knowledge generation and industry related research projects is recommended.
- Academic staff should work towards developing research proposals to obtain funds thereby enabling them to attract more full-time students as well as to support the present students.
- Forming a formal alumni group and obtaining its feedback in every aspect may help to improve the features of curriculum design, job opportunities, student progress and recognition etc.
- A mechanism needs to be implemented to keep all moderated papers and moderators' comments.
- It is suggested to appoint external moderators in addition to the internal moderators for the exam papers as well as to send marked exam papers for external examiners' comments.

7. ANNEXES

Annex 1. AGENDA FOR THE SUBJECT REVIEW VISIT

Day 1 - 4th May 2011

Time	Description
07.45 - 08.00	Travelling from Guest house to the Department of Electrical and Electronic Engineering
08.00 - 08.20	Discuss the agenda for the rest of the activities at the Meeting table, 2nd floor, new building of the Department of Electrical and Electronic Engineering
08.20 - 08.45	Meeting of Review Panel and QAA Council Representatives with Dean, Faculty of Engineering, Faculty QA Unit and Head of the Department and senior staff members.
08.45 - 09.00	Travelling from Dean's office to the Vice Chancellor's office.
09.00 - 09.30	Meeting with the Vice Chancellor, University QA Unit and Head of the Department.
09.30 - 10.10	Observing the University facilities while travelling back to the Faculty (Main Library, Health centre, Halls of accommodations, open air theater used for students activities, Religious places, IT Centre, Student center (WUS), Gymnasium, Swimming pool, Play grounds, etc.
10.10 - 10.45	Briefing about the Quality Assurance and Accreditation by Prof Colin Peiris all staff members from the Mechanical and Electrical Department *(Tea).*
10.45 - 12.00	Department Presentation on the Self Evaluation Report and discussion at the DEEE Seminar room (3rd floor of the new building).
12.00 - 13.00	*Lunch* at the Senior Common Room of the Faculty.
13.00 - 15.00	Observing Departmental Facilities. Reference section, Project area, Elementary Laboratory, MIC Fabrication Laboratory, Optical fiber laboratory, Microwave Laboratory, Communication laboratory, Power Electronic and Industrial Application laboratory, Electrical Machines and Drives laboratory, Discussion area, Electrical Machines laboratory, ROBOCON Laboratory, Robotic and Automation Laboratory, Power System Laboratory, Mini workshop area, High Voltage laboratory, New building ground floor, Electronic Instrumentation and Digital Laboratory, SCADA system laboratory, DIMO Innovative centre, Allocated section for biomedical engineering, Seminar room, Computer simulation laboratory, Postgraduate research laboratory.
15.00 - 16.00	Meeting with Department Academic Staff at the DEEE Seminar room (*Tea*).
16.00 - 17.00	Meeting with Undergraduate Students at the DEEE Seminar room.
17.00 - 17.30	Meeting with Postgraduate Students at the Meeting table, 2nd floor, new building of the Department of Electrical and Electronic Engineering.
17.30 - 18.30	Brief Meeting of Reviewers

Day 2 - 5th May 2011

Time	Description
08.00 - 08.30	Private meeting of the Review Panel with the QAA Council Representatives at the Meeting table, 2nd floor, new building of the Department of Electrical and Electronic Engineering.
08.30 - 10.00	Observing Other Facilities (Engineering Library, Engineering Design Centre, Engineering workshop, Applied thermo laboratory, Mechanical Engineering Machine Laboratory, Engineering Drawing Office, Materials laboratory, Survey Laboratory, Computer Centre, Electronic workshop, English Language Teaching Unit).
10.00 - 11.00	Observing Documents at the Head office of the Department (*Tea*) with few senior academic staff members.
11.00 - 11.30	Observing Teaching- Lecture.
11.30 - 12.00	Observing Teaching- Lecture.
12.00 - 13.00	*Lunch* at the Department meeting room.
13.00 - 13.30	Meeting with the Director, Industrial Training and Carrier Guidance unit at the ITCGU Office.
13.30 - 15.00	Observing Teaching - Practical Class at the Electrical and Electronic Engineering Laboratory.
15.00 - 16.00	Meeting with Technical Staff and Other Non - Academic Staff at the DEEE meeting room (*Tea*).
16.00 - 17.00	Observing Students' Presentations.
17.00 - 18.00	Observing students project demonstration at the Electrical and Electronic Engineering Laboratory.
18.00 - 18.30	Brief Meeting of Reviewers

Day 3 – 6th May 2011

Time	Description
08.00 - 08.30	Private meeting of the Review Panel with the QAA Council Representatives at the Meeting table, 2nd floor, new building of the Department of Electrical and Electronic Engineering.
08.30 - 09.30	Observing Teaching - Practical Class at the Electrical and Electronic Engineering Laboratory.
09.30 - 10.00	Meeting with English Language Teaching Unit staff members.
10.00 - 11.00	Meeting Student Counselors/Academic Advisors/ Personal Tutors at the DEEE meeting room (*Tea*).
11.00 - 11.45	Reviewers Private Discussion at the Meeting table, 2nd floor, new building of the Department of Electrical and Electronic Engineering.
11.45 - 12.30	Meeting with Head and Staff for Reporting at the DEEE meeting room.
12.30 - 13.30	*Lunch* at the PGIA guest house.
13.30 - 17.00	Report Writing

Annex 2. MEMBER OF ACADEMIC STAFF MET DURING THE VISIT

Name with Designation	Academic Qualifications	Area of Teaching/ Expertise
Dr. A. Atputharajah Head of the DEEE	B.Sc. Eng. *(Peradeniya)*, Ph.D. *(UMIST, UK)*	Power, Energy Systems and High Voltage Engineering
Prof. E.M.N. Ekanayake Senior Professor	B.Sc.Eng. *Ceylon*, M.Sc. *(Lond.)*, Ph.D. *(McMaster)*	Communications and Information Engineering
Prof. K.M. Liyanage Professor	B.Sc.Eng. *(Peradeniya)*, M.Eng., Dr.Eng.*(Tokyo)*	Communications and Information Engineering
Prof. M.A.R.M. Fernando Associate Professor	B.Sc. Eng. *(Peradeniya)*, Tech. Lic. *(KTH)*, Ph.D. *(Chalmers*)	Power, Energy Systems and High Voltage Engineering
Dr. A.U.A.W. Gunawardena Senior Lecturer (Grade I)	B.Sc.Eng. *(Peradeniya)*, M.Eng. Sc. *(UNSW)*, Ph.D. *(UQ)*	Communications and Information Engineering
Dr. S.G. Abeyratne Senior Lecturer (Grade I)	B.Sc.Eng. *(Peradeniya)*, M.Sc.(Eng.), Ph.D. (*Gifu)*	Power, Energy Systems and High Voltage Engineering

Dr. J.V. Wijayakulasooriya Senior Lecturer (Grade II)	B.Sc. Eng. *(Peradeniya),* Ph.D.*(UK)*	Electronics and Instrumentation Engineering
Dr. K.R.M.N. Ratnayake Senior Lecturer (Grade II)	B.Sc.Eng. *(Peradeniya), M.Eng.*, Ph.D. *(Gifu)*	Electronics and Instrumentation Engineering
Dr. K.D.R. Jagath Kumara Senior Lecturer (Grade II)	B.Sc.Eng. (*Peradeniya), M.Sc. (UNSW), Ph.D. (Uni. of South Australia)*	Communications and Information Engineering
Dr. D.N. Uduwawala Senior Lecturer (Grade II)	B.Sc.Eng. *(Peradeniya),* Ph.D. (*KTH)*	Communications and Information Engineering
Dr. R.M.R.D.B. Ranaweera Lecturer	B.Sc.Eng. *(Peradeniya),* M.Sc. (*Perdue)*Ph.D. *(Perdue)*	Bio Medical Engineering
Dr. H.M.V.R. Herath Temporary Senior Lecturer	B.Sc.Eng .*(Peradeniya), MScEng. (Miami), PhD (*Paderborn, Germany*)*	Communications and Information Engineering

Annex 3. MEMBER OF NON-ACADEMIC STAFF MET DURING THE VISIT

Name	Designation
Mr. S.B.Wimalasundara	Senior Technical Officer
Mr. B.W. Rajapaksha	Technical Officer
Mr. W.D. Kularatne	Senior Technical Officer
Mr. R.L. Dissanayake	Technical Officer
Mr. P.M.N. Jayarathne	Senior Technical Officer
Mr. A.N. Athukorala	Technical Officer
Mrs. R.M.L.R.K.Rathnayake	Clerk
Mr. M.D.M. Wijesooriya	Lab Attendant
Mr.G.H.T. Bandara	Lab Attendant
Mr.S.A.U.Galagedera	Lab Attendant
Mr.S.B.Perera	Lab Attendant
Mr.R.M.P.S.Kumara	Laborer

Annex 4. LIST OF POSTGRADUATE STUDENTS MET DURING THE VISIT

Name	Programme
Mr. S.Arulprasanth	M.Sc.Eng
Mr. C.L.Wisumperuma	M.Sc.Eng
Mr. M.A.A.P.Bandara	M.Sc.Eng
Mr. M.U.M.D.B. Manathunga	M.Sc.Eng
Mr. T.Jeyadarsan	M.Sc.Eng
Mr. W.N.M.Soysa	M.Phi
Mr.M.A.M.Manaz	M.Phi
Mr. N. Narampanawa	M.Phi

Annex 5. LIST OF VISITED FACILITIES

Reference section,
Project area
Elementary Laboratory
MIC Fabrication Laboratory
Optical fiber laboratory
Communication laboratory
Power Electronic and Industrial Application laboratory
Electrical Machines laboratory
ROBOCON Laboratory
Robotic and Automation Laboratory
Power System Laboratory
DIMO Innovative centre
Allocated section for biomedical engineering
Mini workshop area
High Voltage laboratory
Electronic Instrumentation and Digital Laboratory
SCADA system laboratory
Seminar room
Computer simulation laboratory
Postgraduate research laboratory
Engineering Library
Applied thermo laboratory
Mechanical Engineering Machine Laboratory
Engineering Drawing Office
Computer Centre
Electronic workshop
English Language Teaching Unit