SUBJECT REVIEW REPORT

DEPARTMENT OF ELECTRICAL AND INFORMATION ENGINEERING

FACULTY OF ENGINEERING
UNIVERSITY OF RUHUNA

29th to 31st October 2008

Review Team :

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ality of education within a specific subject or discipline. This review evaluates the quality of education within the specific disciplines of Electrical, Electronic, Telecommunications and Information Technology being offered by the Department of Electrical and Information Engineering (DEIE), Faculty of Engineering of the University of Ruhuna (UOR), Sri Lanka. The review focused on the Self Evaluation Report (SER) prepared by the DEIE. Based on the SER, the team evaluated the quality of the B.Sc. Engineering degree programme in Electrical and Information Engineering (EIE) using the criteria set out by the Quality Assurance Council (QAC) of the Ministry of Higher Education.

The self-evaluation report consisted of eleven sections, i.e., introduction including aims, learning outcomes; students, staff and facilities; 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 observations; skills development; academic counselling and conclusions.

The quality of education within the disciplines was evaluated in the light of the aims and learning outcomes given in the SER submitted by the department.

The review focused on the following eight aspects of education:

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

The evaluation of the above eight aspects of the program were done by obtaining the information from the following sources:

- The self-evaluation report submitted by the Department
- Meeting with the Dean, Head/DEIE, academic, technical and non-academic staff members of the DEIE, Head/Department of Inter-disciplinary Studies (DIS), Director/Engineering Education Centre (EEC), Career Guidance Representative, academic advisors, students counsellors, office bearers of the Electrical and Information Engineering Society (EIES), Warden of the female hostel, graduates and undergraduate students.
- Observation of teaching and laboratory sessions
- Observation of relevant documents (module sheets, lecture notes, marked tutorials, question papers, model answers and marking schemes, comments of moderators, answer scripts, project reports, examination guidelines for undergraduate projects, industrial training reports and daily diaries, student evaluation sheets, peer evaluation reports, minutes of departmental meetings, curriculum revision documents etc.)
- Observation of department and other facilities (computer resource centre, lecture rooms, seminar room, laboratories, drawing rooms, library, medical centre, canteen, hostel, etc.)

Each subject review aspect of education was judged by making one of the three levels namely; good, satisfactory and unsatisfactory. For this purpose, strengths, good practices and weaknesses in relation to the each aspect were considered. An overall judgment was made from the three options, confidence, limited confidence and no confidence, by taking into account the status of the judgments given for all the eight aspects of the academic programme.

29th, 30th and 31st October 2008.
annexure 1.

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

The University of Ruhuna was established with four faculties in August 1978 in the Matara District in the Southern Province of Sri Lanka. It celebrated its 30th anniversary in the year 2008.

Presently, the University of Ruhuna is one of the leading universities in Sri Lanka with seven faculties, Agriculture, Engineering, Fisheries and Marine Science and Technology, Humanities and Social Sciences, Management and Finance, Medicine and Science. To date, it has produced around 10,000 graduates and over 100 postgraduates. Currently around 100 postgraduate students are pursuing Masters and Doctoral programmes at the university in various disciplines.

The Faculty of Engineering, which was declared open in January 2000, is located in Hapugala in Galle, the capital city of the Southern Province. It is surrounded by a landscaped, pleasant and quiet environment away from congested city boundaries. It is the third Engineering Faculty in Sri Lanka and has four Departments, Civil and Environmental Engineering (CEE), Electrical and Information Engineering (EIE), Mechanical and Manufacturing Engineering (MME) and Interdisciplinary Studies (IS). The Department of IS is a service department to the degree awarding departments (CEE, EIE, MME) offering modules of mathematics, management and aesthetic areas by giving a broader perspective on engineering education. The Faculty of Engineering has a challenge to produce graduates to meet the ever-changing technical and professional requirements.

As an integrated part of the Faculty of Engineering, the Department of Electrical and Information Engineering (DEIE), was established at its inception in July 1999. The degree program is designed to give a broad knowledge in areas of Power and Energy Systems, Electronics, Telecommunications and Software Engineering.

The Department, from its first intake in 2001, admitted 35 undergraduate students to specialized field. Until the year 2006, it has admitted a similar number every year, except in the year 2005 when it admitted 69 students from two batches in order to clear the delays and harmonize with the other Faculties of Engineering. Up to now, six batches of students have graduated, and are employed in reputed private sector institutions and in the government sector. From 2007 the DEIE has doubled its intake to around 70. The DEIE is also in the process of developing a taught postgraduate degree programme.

3. AIMS AND THE LEARNING OUTCOMES

The DEIE provides its students an opportunity to specialise in a combination of Electrical Engineering and Information Technology.

Vision: To be a centre of excellence in education and research in the areas of Electrical, Electronic, Telecommunications and Information Engineering.

Mission: To produce globally recognized diligent graduates who are endowed with technical, innovative, analytical, articulate, intellectual, leadership and entrepreneurship skills while having enriched qualities of dedication, adaptability, and responsibility as well as possessing a passion for self learning and striving for challenges.

depth and breadth of knowledge in the broad area of Electrical and Information Engineering (EIE).

- To provide the student with the skills to adapt to the rapidly changing nature of these fields in terms of technology.
- To offer programmes which are of high quality, current and responsive to the needs of students to achieve their goals and lead productive lives in a global society.
- To maintain and enhance efficient programme review processes to implement changes needed to improve the curriculum.
- To improve students critical and applied thinking skills along with proficiency in English Language and IT.
- To promote and enhance partnership with industry and the community to respond to the technological and economic development of the country while improving the living standards of the people.
- To obtain national and international recognition to the Department.
- To Improve social harmony among students, staff and the community.
- To create systematic policies and mechanisms which improve the functionality and stability of the Department.

3.2. Learning Outcomes

An undergraduate upon completion of the programme offered by the department will have;

- A profound knowledge on the core concepts of Electrical, Electronic, Telecommunications and Information Engineering and allied disciplines.
- An independent working ability and strive for challenges to complete a task with minimal guidance and maximum autonomy.
- A life-long self learning and the conceptual skills to update him/her self with the ever changing technologies in Electrical and Information Engineering.
- The capability to plan, adapt and rise along a challenging career path in a rapidly changing industrial environment.
- The ability to innovate and create novel product and system designs.
- Having qualities of leadership, dedication, adaptability and responsibility.
- Having managerial and entrepreneurship skills along with good communication skills to hold responsible positions at the highest level.

4. FINDINGS OF THE REVIEW TEAM

4.1 Curriculum Design, Content and Review

- The Faculty of Engineering, University of Ruhuna established the semester system curriculum from its first intake in December 1999. The curriculum has been developed, in consultation and assistance from academia and professionals, to include all aspects of the semester system, and the continuous assessment fundamentals.
- The objective of the curriculum, as stated by the DEIE, is to produce globally recognized diligent graduates who are endowed with technical, innovative, analytical, intellectual leadership and entrepreneurship skills while having enriched qualities of dedication, adaptability and responsibility as well as possessing a passion for self learning and striving for challenges.

to be broad based to cover the wider job market for its in the Electrical, Electronic, Telecommunication and es under one stream.

- Having offered the initial curriculum for five years, based on feedback from the academia and alumni at a Workshop, the department has identified the following drawbacks which have been addressed in the revision of 2005.
  - Incorrect sequence of some modules
  - Inappropriate interdepartmental modules
  - Incorrect distribution of modules in different major areas
  - Shortcomings in meeting accreditation requirements
  - Ineffective assessment methods
  - Lack of optional subjects to specialise in a specific discipline within the Electrical and Information Engineering stream.
- Thus a major curriculum revision has been carried out in the year 2005 with consultation and assistance of academia, professionals from industry, alumni and students. The list of modules for the DEIE students in the revised curriculum is given in Annexure 2.
- It is noted that the process of curriculum revision has been satisfactorily documented.
- The curriculum introduces new elective modules to incorporate the emerging technologies in ICT, Nanotechnology and Biomedical Engineering.
- It is to be noted that the introduction of highly specialized modules in an undergraduate programme could sometimes be counterproductive as they lead to students leaving out desirable modules to select these specialized modules.
- The curriculum includes an undergraduate project during semester 7, and a research project has been introduced into semester 8 to improve the innovative and self-learning skills of the students. The revised curriculum was introduced in the year 2006 to the 8th intake of students to the faculty.
- This curriculum is more flexible and enables students to select elective modules in the 6th, 7th and 8th semesters to specialize based on their identified career paths within the Electrical and Information Engineering stream.
- However the degree of flexibility allowed may lead to students making unwise decisions in the selection of modules. This should be addressed by setting down clear guidelines on the selection of electives in these semesters.

4.2 Teaching, Learning and Assessment Methods

Teaching and Learning Methods

- Students are provided with module sheets containing course outlines, name of lecturer, credit rating, pre-requisites, course objectives, learning outcomes, brief syllabus and method of assessments as well as recommended reading.
- One credit is defined as one hour lecture session or a three hour laboratory session per week for the period of 15 weeks duration of a semester.
- The department disseminates knowledge to undergraduates, through lectures, tutorials and laboratory sessions. In addition, students may be requested to carry out a mini-project or literature-review on a specific topic under the guidance of the lecturer to promote their innovative and self learning skills.
- The minimum credit requirements of different subject areas for meeting international accreditation requirements have not been adequately considered in the curriculum design.
- The major obstacle to the evolution of DEIE is the shortage of qualified academic staff and the difficulty to attract visiting lecturers from Colombo, because of its remote location and unattractive remuneration.

le in the Moodle based e-learning system which can be ternet.
in teaching by around 50% of the academic staff, and handouts are provided to students.

- Although all lecture rooms and lecture theatres are very well equipped with audio visual equipment, some academic staff members do not make use of them to their advantage. Use of Audio visual facilities to supplement the blackboard is encouraged.

- Absence of equipment in the Power Systems and High Voltage area requires students to travel to other Universities to fulfil their laboratory needs. Also, inadequate laboratory equipment in the computer and information engineering laboratory.
- The Computer Resources Centre of the department and the common computer centre of the faculty have 20 and 130 working computers respectively. This is considered inadequate for 195 EIE students out of 700 engineering students.
- Students are encouraged to be interactive during the classes by raising questions, participating in group discussions and making presentations, with a view to establish a student cantered learning environment.
- However it was noted that students were interactive in the classroom only when prompted.
- Instruction sheets for laboratory sessions are issued in advance to get the student prepared for the laboratory session. Students complete their practical session under guidance and write a report within the laboratory.
- The medium of instruction is English for all academic work.
- Students are required to complete an undergraduate project in their final year under the supervision of a member of academic staff. Here the objective of the department is to provide a blend of theoretical and application skills while promoting creative, innovative and group working skills. Some projects are jointly supervised with experts from industry.
- Students are also encouraged to gather knowledge from recommended text books and references as a part of improving the skills of self learning.
- Students are encouraged to meet the respective lecturers during the student contact hours to discuss any problems.
- Hostel facilities are provided for about 70% of the students both on campus and in the vicinity administered by the faculty. However it was observed that the hostels were grossly overcrowded and that the environment was not conducive to learning. It was also observed that a new hostel is under construction.

Assessment Methods

- Performance of each student is evaluated by continuous assessment and end of semester examinations. The continuous assessment marks are given based on the student performance in the laboratory assessed through reports, assignments, class attendance and mid-semester evaluations.
- The continuous assessment component of a module generally carries 40 ï 50% of the total marks (typically 10% for in-class assessments, 20% for laboratory assessments and 20% for mid-semester assessment). Students must obtain a minimum mark for continuous assessment (usually 40% - 50% of the continuous assessment marks) as stated in the module outline sheet in order to be eligible to sit for the end of semester examination. However it was noted that there is no requirement for a minimum mark at the end of semester examination to pass the module.

ns are designed to test the studentsô ability to perform t has been learnt during the Semester. Examination s such as multiple choice questions, short notes, essays, numerical problems and result interpretation.

- The marks range for each grade is relatively open in the new curriculum, being decided by a departmental board of examiners. However, there is no typical mark range given for each grade or a guidance on mapping indicated. However, alphabet grades are mapped to Grading System as given in Annexure 3.
- The grades for the general elective modules are not counted towards the Semester Grade Point Average (SGPA).
- Examination papers are moderated by internal moderators to ensure questions are clear, relevant and coverage is appropriate. It is noted that there are no external examiners to evaluate the process in a broader perspective.
- Students are allowed to check their mid-semester answer scripts and other continuous assessment material. Re-scrutiny is permitted for the end of semester examination results to check for numerical errors.
- Supplementary evaluation/s (or repeat examination/s) are held for semesters 1 and 2 to enable weak students to proceed to the third semester with their original batch of students.
- An Overall GPA (OGPA) is calculated from the SGPA incorporating a weighting factor. Based on the OGPA, a student is awarded a class of honours at the completion of all the graduation requirements within four academic years (Annexure 4).

4.3 Quality of Students including Student Progress and Achievements

- Around 70 students of the 200 who get admitted to the Faculty, are selected to the Electrical and Information Engineering (EIE) stream based on studentsô preference and performance during the first two semesters which are common to all students. EIE is the most preferred stream from high-achievers in the first two semesters every year.
- The Department has secured sponsorship for the following gold medals
  - Å Best student from DEIE
  - Å Best undergraduate project student from DEIE .
- The following is the distribution of class honours among 197 graduands since inception.
  - Å First Classes 15 %
  - Å Second Class Upper Division 43%
  - Å Second Class Lower Division 31%
- In recent years around 5 student project papers have been presented per year, among the 20 papers in the IET Younger Member Session annual conference.
- The following have been awarded to the undergraduates for their project work.
  - Å Best student project award from IESL Younger Member Session ï year 2004
  - Å Best student project award from IET Younger Member Session ï year 2006
  - Å Best student project - Silver Award ï TECHNO 2007
  - Å Best student project (electronics and telecom. category) award from IET Younger Member Session ï year 2008
- IESL award for best UG project (Electrical Eng. discipline) ï year 2008
- DEIE has been successful in producing high quality engineers who are able to compete in the job market.
- Out of first six batches of undergraduate students (numbering 199) up to date in the EIE stream, all but two has successfully completed the course.
- To date, those graduating have found employment within three months of graduation.
- The DEIE has been able to absorb only one of its graduates into an academic position due to the attractive remuneration packages offered by industry.

back

ect feedback from students. Every staff member displays their contact hours in their offices and students are encouraged to meet them to discuss any matters related to their studies.

- Batch representatives are free to meet individual staff members or Head of the Department to discuss any matter concerning their batch.
- Students from DEIE provide feedback on their lecturers, using a standard questionnaire, for each module at the end of every semester. The feedback forms are distributed and collected by clerical staff members in the absence of the lecturer. Responses are analysed by a panel including the Head of DEIE and suggestions are given to the lecturer for corrective action.
- It is noted that there are no regular meetings between the academic staff and the students/student representatives.

4.5 Postgraduate Studies

- The DEIE is in the process of initiating a Masters programme in Applied Engineering with optional modules based on the studentsô specialization of interest. It is noted that the proposed title is too broad. Further the choice of a title before consultation with academia and industry seems premature. The DEIE should consider whether it would be more feasible to offer the Masterôs programme jointly with the Department of Mechanical and Manufacturing Engineering.
- The DEIE has offered a certificate course in Personal Computer Management and Maintenance (PCMM) to the Southern Provincial Council (SPC) employees on the request of SPC.
- Despite the heavy workload of the academic staff, they get involved in research activities when time permits. However it is noticed that no postgraduate research students are present in the department.

4.6 Peer Observations

- DEIE operates a peer observation system for the identification, development and dissemination of good teaching, learning practices and assessment of its academic staff.
- Each staff member selects a colleague for the observation of his/her teaching. The selected colleague observes the teaching of his associate and makes comments on preparation, method of teaching, delivery, lecture materials, relationship and interaction with the students by filling a standard form.
- The observations are communicated to the Head of the Department, and if necessary, the Head arranges a discussion with the lecturer and the peer.
- They meet and discuss the observations made during the lecture, course content, teaching methodologies, learning and assessment methods and new developments for the module.
- The good practices developed by the colleagues are made available to other staff members for implementation. Unfortunately, no record has been kept of these good practices for future use.
- It was noted that in some of the peer observations, the same suggestion for improvement has been made in consecutive years, suggesting that remedial action had not been made based on the earlier suggestion.

nary Studies (DIS) plays a key role by developing the communication skills in students.

- In order to improve the practical communication skills, DEIE has incorporated a presentation component in some of the modules such as Energy and Environment, Software Projects and Undergraduate Project.
- It was observed during the discussions with student groups that the communication skills of students have been greatly improved through an effective communications skills development component in the orientation programme
- The Undergraduate Project also develops the innovative, creative and analytical skills while improving group working ability.
- Industrial Training, the Undergraduate Project as well as some Software Projects help students to interact with industry and lead them to develop their application, management, intellectual, leadership and entrepreneurship skills.
- About 10% of the students undergoing industrial training are visited by academic staff members during their training period. It was noted that although a post of Director Industrial Training exists in the faculty, it has not been filled in recent times. Thus the supervision of industrial training has suffered.
- General elective subjects offered by DIS give the opportunity to improve the knowledge of students in personal development, humanities and social sciences, economics, finance, management and entrepreneurship.
- Possibility of leaving out modules from one of the categories in general electives leads to an unbalanced choice.
- The elective modules of the revised curriculum also develop skills in some of the areas of Photography, Graphics, Painting, Music and Meditation .
- The Electrical and Information Engineering Society (EIES) arranges Guest Lecturers on Career Guidance from the industry.
- Undergraduate projects in collaboration with the industry enable the students to interact with professional engineers.

4.8 Academic Guidance and Counseling

- Academic Advisors provide students with the necessary information with regard to academic programmes offered by the DEIE through the student handbook of the Faculty. It is noted that the department does not have a separate departmental handbook.
- A module sheet is also made available to students at the beginning of each semester for each Module.
- During the formative year (first two semesters) each student is assigned an academic staff member from the Faculty as his/her academic advisor. When they get admitted to the field of specialization from their third semester, an academic staff member from the Department of specialization takes over from the first advisor.
- The approval of the academic advisor is necessary for module registration. All formal letters to the administration, including excuse letters for absence, need to be authorised by the academic advisor. This process also ensures that the academic advisor is fully aware of the studentsô progress.
- In addition to the academic advisors, the Faculty of Engineering has a group of student counsellors appointed by the Vice-Chancellor. Each Department in the Faculty has a representative in this group. This gives students easy access to the counsellors to discuss their problems.

or is employed by the University, resident at Matara, to
to the students who require special attention when
lors of the Faculty.

- The EEC plays a major role of identifying appropriate industrial training places and placing students for training based on their interest. It also coordinates the intensive English programme and awareness programme to newly admitted students.
- It was noted that although there is a Career Guidance Representative of the of the Career Guidance Units of UOR in the Faculty of Engineering, there is no official role assigned other than communicating the events of the main unit to students. This is found to be ineffective as the organised activities of the main unit are usually not very relevant to Engineering.
- It was noted that a calling day had been organised at the IESL as a job fair by the Career Guidance Representative together with final year students.

5. CONCLUSIONS

5.1 Curriculum Design, Content and Review

Strengths/Good Practices

- A broad based curriculum to cover the wider job market for its graduates by including modules in the Electrical, Electronic, Telecommunication and Information Engineering disciplines under one stream.
- Revision of the curriculum based on feedback from academia, professionals from industry, alumni and students
- Introduction of new elective modules to incorporate the emerging technologies in ICT, Nanotechnology and Biomedical Engineering
- Introduction of a research based project in addition to the undergraduate project
- A more flexible curriculum which enable students to select elective modules in the 6th, 7th and 8th semesters to specialize based on their identified career paths

Weaknesses

- Inadequate consideration of the minimum credit requirements of different subject areas for meeting international accreditation requirements in the recent curriculum design.
- Possibility of students leaving out desirable modules to select specialized modules
- Possibility of students making unwise decisions in the selection of modules, due to the overly flexible choice in the final semesters.

5.2 Teaching, Learning and Assessment Methods

Strengths/Good Practices

- Provision of course module sheets at commencement of the semester
- Usage of modern technology in the dissemination of knowledge
- Availability of Teaching material in the Moodle based e-learning system
- Availability of audiovisual equipment in all classrooms and the use of these by about 50% of the academic staff
- Evaluation of performance by continuous assessment and end of semester examinations

mid-semester answer scripts and other continuous

nester examination results for numerical errors

- Provision of hostel facilities to about 70% of the students, both on campus and in the vicinity, administered by the faculty.
- Construction of a new hostel.

- ***Weaknesses***
- Shortage of qualified academic staff and the difficulty to attract visiting lecturers
- Absence of equipment in the Power Systems and High Voltage area, requiring students to travel to other Universities to fulfil their laboratory needs.
- Inadequate laboratory equipment in the computer and information engineering laboratory.
- Inadequate computer facilities for students
- Lack of use of available audiovisual equipment by about 50% of academic staff.
- Absence of requirement for a minimum mark at the end of semester examination to pass the module.
- Absence of a typical mark range or other defined guideline for mapping marks to alphabetic grades.
- Gross overcrowding of hostels making the environment not conducive to learning.

5.3 Quality of Students including Student Progress and Achievement

Strengths/Good Practices

- Most preferred stream from high-achievers in the first two semesters
- Receipt of many achievement awards for final year projects from the IESL and IET
- Sponsorship of two gold medals
- Employment of graduates within three months of graduation
- High demand from industry proven from the fact that the faculty is unable to attract good graduates to their staff
- Pursuance of postgraduate studies by a fair number of graduates
- Very high rate of success of graduation

Weaknesses

- Low first preference for the Engineering Faculty in Ruhuna among prospective students

5.4 Extent and Use of Student Feedback

Strengths/Good Practices

- Availability academic staff and display of contact hours
- Availability of student representatives in each batch

Weaknesses

- Non scheduling of regular meetings between the academic staff and batch representatives/students
- Non transparency of corrective action taken on student feedback

Å Proposal to initiate a taught postgraduate programme

Weaknesses

- Unavailability of a taught postgraduate programme
- Absence of consultation with academia and industry on the identification of focus areas
- Absence of research students in the department

5.6 Peer Observations

Strengths/Good Practices

- Acceptance and carrying out of regular peer observation
- Sharing of good practices

Weaknesses

- Corrective action of peer feedback was sometimes not evident
- Absence of documentation of good practices to ensure continuity

5.7 Skill Development

Strengths/Good Practices

- Effective communication component during the orientation programme
- Arranging of Guest Lecturers from industry
- Availability of aesthetic modules from Humanities and Social Sciences, such as Photography, Graphics, Painting, Music and Meditation to broaden the outlook of engineering students
- Availability of industry funding for some final year projects
- Organisation of a seminar for students by NAITA prior to the commencement of industrial training

Weaknesses

- Absence of a comprehensive industrial training guideline
- Possibility of leaving out modules from one of the categories in general electives
- Absence of a calendar of activities for the EIE Society

5.8 Academic Counseling

Strengths/Good Practices

- Availability of various levels of academic guidance and counselling to students from the point of entry into the faculty
- Availability of module sheets at the commencement of each module
- Availability of academic staff for consultation not only during office hours but in the evening due to their residence on campus
- Organising of a calling day at the IESL as a job fair jointly by the career guidance representative and the students
- High appreciation of the efforts of the academic staff by students

etween the academic staff and the students

- Absence of a departmental handbook
- Absence of a regular careers day organised by the department/faculty
- Absence of a unit at the Faculty to deal with career guidance issues related to Engineering

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

Aspect Reviewed	Judgment Given
Curriculum Design, Content and Review	Satisfactory
Teaching, Learning and Assessment Methods	Good
Quality of Students including Student Progress and Achievement	Good
Extent and Use of Student Feedback	Good
Postgraduate Studies	Satisfactory
Peer Observations	Good
Skill Development	Good
Academic Counseling	Good

The overall judgment is suspended

6. RECOMMENDATIONS

1. Curriculum Design, Content and Review

- To consider revising the curriculum to include the minimum credit requirements of different subject areas for meeting international accreditation requirements. This may need a faculty wide discussion.
- To set down clear guidelines on the selection of electives in 6th, 7th and 8th semesters. These guidelines should also look after the requirements set out by international accreditation bodies.
- To set up a department-industry consultative board (DICB) to aid industry feedback for future curriculum revisions
- Set up a mechanism to obtain regular alumni feedback regarding the curriculum

2. Teaching, Learning and Assessment Methods

- To seek funding to purchase adequate laboratory equipment
- To increase the computers available to undergraduate students
- To improve the remuneration package of academic staff through increased consultancy, postgraduate teaching and lobbying the UGC for increased salaries and other incentives
- To encourage all academic staff to make use of the available audio visual equipment to supplement their teaching
- To set up guidelines for mapping examination marks with alphabet grades

lent Progress and Achievement

gramme among advanced level students, such as open

ng mass media

4. Extent and Use of Student Feedback

- To schedule regular meeting between academic staff and batch representatives/ students
- To display corrective action taken on student feedback on a separate notice board or through the e-learning system
- To obtain student feedback on teaching of modules during the first half of the semester through the e-learning system.

5. Postgraduate Studies

- To study the feasibility of offering a Masterôs programme jointly with the Department of Mechanical and Manufacturing Engineering
- To initiate a session with industry and academia for the proposed postgraduate taught programme for identification of focus areas and for feedback
- To promote academic staff research through postgraduate research students

6. Peer Observations

- To amend the peer review process to include a discussion session between the pair to identify corrective actions before submission to head
- To document good practices of academic staff to ensure continuity

7. Skill Development

- To develop a comprehensive industrial training guide for each discipline within the EIE stream
- To fill the vacancy of Director Industrial Training as soon as possible and to explore the feasibility of visiting the majority of students at their workplaces during their training
- To prepare a calendar for the EIE Society annually to ensure the continuity of activities

8. Academic Counseling

- To organize careers days and open days on a regular basis
- To re-designate the career guidance representative as a career guidance advisor to the faculty, who will also be responsible for organising relevant career guidance activities within the engineering faculty

VIEW VISIT

29-10-2008, Wednesday

Time	Activity	Venue
08.00 - 08.30	Meeting with QAA Council representatives	Board Room
08.30 - 09.00	Meeting with the Dean and Head of Department (HOD)	Deanôs Office
09.00 - 9.30	Discussion with HOD to finalize the agenda for review	DEIE-SMR
9.30 - 10.00	Tea with academic staff members	DEIE-SMR
10.00 ï 12.15	HODôs presentation on the self evaluation report and Discussion with HOD and academic staff members	DEIE-ELR
12.15 - 13.30	Lunch	Guest House
13.30 - 14.30	Observation of common facilities (computer centre, library, seminar room, lecture theatres, drawing rooms) of the faculty.	
14.30 - 15.30	Observation of department facilities (laboratories, computer resource centre, lecture rooms).	DEIE
15.30 - 16.15	Meeting with academic staff of department without HOD	DEIE-ELR
16.15 - 16.30	Tea	DEIE-SMR
16.30 - 17.30	Meeting with undergraduate students (3rd, 5th and 7th semester)	DEIE-ELR
17.30 - 18.00	Meeting with undergraduate students (1st semester students, who follow common core modules)	DEIE-ELR
18.00 onwards	Meeting of reviewers	DEIE-SMR

30-10-2008, Thursday

Time	Activity	Venue
08.30 - 09.00	Observation of laboratory session 1 (for EE3304 at electric machines and power electronics lab)	DEIE
09.00 - 09.30	Observation of laboratory session 2 (for EE3306 at electronic and measurement lab)	DEIE
09.30 -10.00	Observation of teaching (subject: EE5315)	LR1
10.00 ï 12.30	Observation of documents (working with tea)	DEIE-SMR
12.30 - 13.30	Lunch	Guest House
13.30 -14.00	Observation of laboratory session 3 (session for EE7318 at communication and systems engineering lab)	DEIE
14.00 -14.30	Observation of computer network facility at server room	DEIE
14.30 - 15.00	Observation of teaching (subject: EE5314)	DEIE-ELR
15.00 ï 15.45	Observation of past final-year undergraduate projectôs results and reports, industrial training reports/daily diaries	DEIE-ELR2
15.45 - 16.30	Meeting with technical staff and other non-academic staff (working with tea)	DEIE-ELR
16.30 ï 17.00	Meeting with student counsellors and academic advisors	DEIE-ELR
17.00 - 17.30	Meeting with graduates of DEIE	DEIE-ELR
17.30 onwards	Meeting of reviewers	DEIE-SMR

	Activity	Venue
	onal documents	DEIE-SMR
09.00 - 09.30	Meeting with Electrical and Information Engineering Society (EIES) office bearers	DEIE-SMR
09.30 ï 10.00	Observation of student facilities (canteen, medical centre, student hostel and standby generator)	
10.00 -10.30	Meeting with HOD (Department of Inter-Disciplinary Studies), Director (EEC) and Career Guidance Advisor (Working with tea)	DEIE-SMR
10.30 - 11.00	Observation of teaching (subject: EE3208)	LR2
11.00 - 11.30	Reviewers private discussion	DEIE-SMR
11.30 - 12.30	Feedback meeting (Review team, HOD and academic staff)	DEIE-ELR
12.30 - 13.30	Lunch	Guest House
13.30 - 16.30	Report writing	DEIE-SMR

Note:
DEIE = Department of Electrical and Information Engineering
DEIE-SMR =DEIEôs Staff Meeting Room at ground floor
DEIE-ELR= DEIEôs Lecture Room at 1st floor
DEIE-ELR2= DEIEôs Lecture Room at 2nd floor
LR1=Lecture Room No. 1 at 1st floor of lecture theatre building
LR2=Lecture Room No. 2 at 1st floor of lecture theatre building

FERED TO DEIE STUDENTS IN THE 2005

Semester 1 (18 Total Credits)

CE 1301 Fundamentals of Civil Engineering
ME 1301 Introduction to Materials Science and Manufacturing Engineering
ME1202 Engineering Drawing
EE1301 Introduction to Electrical Engineering
IS 1401 Mathematical Fundamentals for Engineers
IS 1302 Communication for Engineers

Semester 2 (18 Total Credits)

CE 2302	Mechanics of Materials
CE 2203	Fundamentals of Fluid Mechanics
ME 2203	Thermodynamics
ME 2204	Engineering Mechanics
EE 2302	Fundamentals of Computer and Software Engineering
EE 2203	Introduction to Electronic Engineering
IS 2403	Linear Algebra and Differential Equations

Semester 3:

Core Modules (16 credits)

EE3304	Electrical Machines
EE3305	Engineering Electromagnetism
EE3306	Analog Electronics
EE3207	Signals and Systems
EE3208	Object Oriented Programming
IS 3304	Numerical Methods

General Elective Modules

IS 3305	Society and the Engineer
IS 3306	Basic Economics
IS 3115	Photography
IS 3117	Appreciation of Music
IS 3118	Effective Verbal and Non-verbal Communication
IS 3222	Graphics Design

Semester 4:

Core Modules (17 credits)

EE4309 Power Systems
EE4310 Communication Theory
EE4311 Data Structures and Algorithms
EE4312 Digital Electronics
EE4213 Electrical and Electronic Measurements

IS 4307	Probability and Statistics

General Elective Modules

IS 4308	Technology and the Society
IS 4209	Organizational Behaviour
IS 4311	Financial Management
IS 4116	Introduction to Painting
IS 4119	Accelerated Learning

Semester 5:

Core Modules (17 credits)

EE5314 Power Electronics
EE5315 Digital Communications and Computer Networking
EE5316 Computer Architecture and Operating systems
EE5317 Instrumentation and Systems Engineering
EE5218 Energy and Environment
IS 5310 Complex Analysis and Mathematical Methods

Technical Elective Modules

EE5227 Internet Technologies
EE5228 Advanced Electronics

General Elective Module

IS 5312 Industrial Management

Semester 6:

Core Modules (19 credits)

EE6319 Control Theory
EE6320 Electrical Machines and drives
EE6321 Microprocessor based Systems Design
EE6322 Communication Systems
EE6223 Digital Signal Processing
EE6224 Software Project
IS 6313 Mathematical Modelling

Technical Elective Modules

EE6229 Intelligent Systems Engineering
EE6230 High Voltage Engineering
EE6231 Microelectronics
EE6232 Photonic Devices
EE6233 Computer Graphics

General Elective Module

IS 6214 Entrepreneurship and Project Management

Industrial Training I

Semester 7:

Core Module (5 credits)

EE7525 Undergraduate Project

Technical Elective Modules

EE7234 Advanced Data Communication
EE7235 Advanced Power Electronics
EE7236 Building Service Engineering
EE7237 Data Management Systems
EE7238 Microwave Communications
EE7239 Image Processing and Computer Vision
EE7340 Advanced power systems
EE7341 Optimization
EE7342 Network Programming

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Semester 8:

Core Module (2 credits)

EE8226 Research Project

Technical Elective Modules

EE8245 Design and Management of Networks
EE8246 High Performance Computing
EE8247 Wireless and Mobile Communications
EE8248 Biomedical Engineering
EE8249 Energy System Planning
EE8250 Engineering Automation
EE8351 Advanced Electrical Drives
EE8352 Compiler Theory

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Grade	Grade Point	Notes
A+	4.0	1
A	4.0	
A-	3.7	
B+	3.3	
B	3.0	
B-	2.7	
C+	2.3	
C	2.0	2
C-	1.5	3
F	0.0	4
N	-	5
W	-	6

Notes:

1. Grade A+ signifies superior performance. It may be taken into consideration by the board of examiners in considering borderline cases for Pass/ Honours.
2. Grade C or above is the normal requirement to pass a module and earn credit for it.
3. Grade C- is a conditional pass grade and is counted in the calculation of the Semester Grade Point Average (SGPA). C- grades will become pass grades and the student can earn credit only if he/she has achieved a SGPA of 2.00 or above and has, in that semester, with no more than two grades at the level of C- or below. A student may improve a grade C- to a grade C by repeating the module or attempting the supplementary evaluation, if applicable.
4. Grade F signifies failure in the module. In order to complete the module a student must repeat the module or attempt the supplementary evaluation, if applicable. The grade is counted in the calculation of the Semester Grade Point Average.
5. Grade N signifies Academic Concession which enables the student to repeat the module or attempt the supplementary evaluation, if applicable, as the first attempt. The grade is not counted in the calculation of the Grade Point Average.
6. Grade W signifies Results Withheld. The grade is not counted in the calculation of the Semester Grade Point Average.

REMENTS

A student should satisfy the following requirements to be awarded the degree of Bachelor of the Science of Engineering (B.Sc. Eng.):

i. A minimum total of 144 credits excluding credits for industrial training, but including a minimum of 14 credits from the list of general elective modules and a minimum of 130 credits that comprises of all the mandatory core modules and a number of technical elective modules chosen from the list offered by his/her specialisation course.
ii. Completion of the developmental programme, industrial training and any other mandatory requirements prescribed by the Faculty Board to the satisfaction of the Dean.
iii. A minimum Overall Grade Point Average (OGPA) of 2.00.
iv. A residence requirement of four academic years as a duly registered full time student of the University.

The calculation of Cumulative Grade Point Average (CGPA) is based on the summation of final grade points earned for each core, technical elective and GPA-optional general elective module, using only the highest grade for repeated modules, weighted according to the credits assigned and the module level as given below.

Level 1 - 2	Weight of 0.05
Level 3 - 8	Weight of 0.15

The Overall Grade Point Average (OGPA) is the CGPA calculated at the end of the studentôs study programme in the Faculty, considering all the core modules and, from the technical elective and GPA-optional general elective modules, ranked in descending order of the grade, only those that are required to satisfy the criteria stipulated in above sections i and ii.
A student will not qualify for the award of the B.Sc. Eng. degree if the graduation requirements are not satisfied within eight academic years from the time of admission to the Common Core Course except with the consent of the Senate on the recommendation of the Faculty.

Award of Class Honours

A student awarded the B.Sc.Eng. degree shall be deemed to be eligible for the award of the degree of B.Sc. Eng. with Honours on satisfying the following additional requirements.

i. Completion of all programme requirements, to the satisfaction of the Dean, within a period of four academic years from the commencement of the common core course
ii. A residence requirement of four academic years as a duly registered full time student of the University.
iii. An Overall Grade Point Average (OGPA) not less than that stipulated below for the respective Class Honours.

OGPA	*Honours Awarded*
OGPA ≥ 3.70	First Class Honours
3.30 ≤ OGPA < 3.70	Second Class Honours Upper Division
2.70 ≤ OGPA < 3.30	Second Class Honours Lower Division