SUBJECT REVIEW REPORT

DEPARTMENT OF MANAGEMENT OF TECHNOLOGY

FACULTY OF ENGINEERING
UNIVERSITY OF MORATUWA

10th to 12th December 2007

Review Team :
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CONTENTS

1. SUBJECT REVIEW PROCESS

Higher education is a 'public good' and is of crucial importance to health, wealth and well being of the society and the economy. Universities must conscientiously exercise their responsibility for quality and standards. University accountability for quality and standards is a key factor in promoting and safeguarding public confidence in Sri Lankan higher education.

Subject review evaluates the quality of education within a specific subject or discipline. It is focused on the quality of student learning experience and on student achievement and is designed to evaluate the quality of both undergraduate and postgraduate programmes.

Subject review process is introduced by the committee of Vice-Chancellors and Directors (CVCD) and the University Grants Commission (UGC). The Quality Assessment and Accreditation Council (QAAC) of the UGC is now conducting subject reviews and institutional reviews in Sri Lankan universities. Prof. Colin Peiris, Quality Assurance Specialist of the QAAC by a letter dated 20th November 2007 notified that the following team has been appointed to perform the subject review of the Department of Management of Technology, Faculty of Engineering, University Of Moratuwa from 10th to 12th December 2007.

- Prof. Lalith Munsinghe, University of Kelaniya,
- Prof R.S.Gunatunga, University of Sri Jayawardenapura
- Dr. K. Pirapaharan, Head / University of Ruhuna.

Key features of the subject review process are preparation of a Self Evaluation Report (SER) by the department on the discipline they teach and the evaluation of the student learning experience and on student achievement in the subject according to the aims and learning outcomes as stated in SER by the subject review team (Review Team).

SER of the Department of Management of Technology (DMOT), University of Moratuwa prepared in October 2007 was submitted to the members of the Review Team with the letter dated 20th November 2007, requesting the Team to perform the subject review. It contained 18 pages information relevant to undergraduate and postgraduate programmes and 22 pages of relevant appendices.

The Team evaluated the quality of education in the Dept. of Management of Technology according to the aims and learning outcomes as claimed in their SER. The purpose of the visit was to consider and observe the evidences provided by the department.

At 8:30 am on the 10th December 2007 the Team arrived at the university and met the QA Specialist of IRQUE (Improving Relevance and Quality of Undergraduate Education) project for half-an-hour to be familiarized with the subject review process. At 9:00 am the Team including QA specialist, was invited for a welcome meeting by the Dean of the Faculty of Engineering for which Head, DMOT and Director, Quality Assurance Cell, Faculty of Engineering were also present followed by the meeting with the Vice-Chancellor, the Deputy Vice-Chancellor and the Head/DMOT. Thereafter, The Team met the Head and the academic staff members of the department to finalize the agenda for the review process. During the morning session Head/DMOT gave a presentation which comprehensively covered the progress made by the department on all aspects included in the SER in the

presence of all members of the academic staff of the department. The review process was thereafter progressed by the Team according to the agenda (annexure-1).

The Review Team held meetings with the following groups and individuals.

- Head of the DMOT
- Academic staff members of the DMOT
- Non-academic staff members of the DMOT
- Academic supportive staff members of the DMOT
- Director/University Industry Interaction Cell
- Undergraduate students
- Postgraduate students
- Academic advisor and Coordinators

The Team visited the following places of the department for observation.

- Lecture halls
- Main Library
- Computer centres in the main library
- *Expographic* book shop in the university

The Team went through the following documents.

1. Faculty handbook 2007
2. Department Handbook for postgraduate studies 2006/2008
3. Copies of lecture notes / handouts
4. Copies of examination papers
5. MBA Dissertation
6. MBA project – Student-Supervisor meeting record
7. Calendar for undergraduate and postgraduate programme 2007 / 2008
8. Students feedback and its analysis
9. Question papers with the comments of the moderator
10. Marking schemes
11. Detailed mark sheets and mark return sheets duly filled with marks and grades along with the statistical analysis
12. Peer review report for lecturers
13. Minutes of the department academic staff meeting
14. Minutes of the department industry consultative committee meetings.
15. Operating procedures / guidelines of activities relevant to postgraduate programmes.
16. Document on academic accountability and workload model.

The Review Team at the end of the 3-day-visit made judgments on each of the eight aspects namely (i) curriculum design, content and review (ii) teaching, learning and assessment methods (iii) quality of students including student progress and achievement (iv) extent and use of student feedback, qualitative and quantitative (v) postgraduate studies (vi) peer observation (vii) skills development and (viii) academic guidance and counseling. On this day stated only whether each of these eight aspects is good or satisfactory or unsatisfactory.

A comprehensive subject review draft report is submitted by the Team to the Department through QAAC within one month duration after the review visit. This report clearly highlights the strengths and good practices found and describes any weaknesses identified giving evidence to support the judgments. If any review aspect is found to be unsatisfactory, action should be taken by the department concerned to remedy the problem identified within six months and report accordingly to the QAAC. Finally the review report will be published and a certificate will be issued.

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

In 1960, the Institute of Practical Technology (IPT) was founded at Katubedda with aid from the Canadian Government in a fifty-acre block of land overlooking the Bolgoda Lake. With the objective of expanding the engineering education of the country, the Ceylon College of Technology (CCT) was begun in 1966 utilizing the resources of the IPT with the assistance of United Nations Development Programme through UNESCO. The engineering degree and technician programmes of CCT designed to produce an engineer or technician with practical training as an integral part of their study. Under the provisions of the University Act, No.1 of 1972, CCT became the Katubedda Campus of the University of Ceylon. The Katugedda Campus began with one Faculty that of Engineering and Architecture in 1972. When Ceylon subsequently became a Republic in 1972, the name changed to Katubedda Campus of the University of Sri Lanka. With the implementation of Universities Act No.16 of 1978, the Katubedda campus of the University of Sri Lanka acquired the status of an independent University with its present corporate name University of Moratuwa, Sri Lanka, with three Faculties of studies namely (i) the Faculty of Engineering, (ii) the Faculty of Architecture and Town & Country planning, and (iii) the Faculty of Physical and Applied Sciences. In 1981, the Faculty of Physical & Applied Sciences was merged with the Faculty of Engineering. To sustain the rapid expansion of Information Technology Industry in the country, the Faculty of Information Technology was established in 2001 as a third Faculty of the University.

Faculty of Engineering is the largest faculty among the three faculties of the University of Moratuwa comprising over 200 academic staffs and around 3500 undergraduate and postgraduate students. It has 12 departments namely (i) Chemical and Process Engineering, (ii) Civil Engineering, (iii) Computer Science Engineering, (iv) Earth Resources Engineering, (v) Electrical Engineering, (vi) Electronic and Telecommunication Engineering (vii) Materials Engineering, (viii) Mechanical Engineering, (ix) Textile & Clothing Technology, (x) Transport & Logistics Management, (xi) Management Technology, and (xii) Mathematics. The first ten departments are offering undergraduate programmes while last two departments are service departments offering the undergraduate modules to other ten departments according to their requirement. The Faculty of Engineering is offering nine fields of specialization in B.Sc. Engineering degree and one Bachelor of Design in Fashion Design and Product Development, B.Des (FD & PD).

The Department of Management of Technology of University of Moratuwa was established in 1998, in the Faculty of Engineering, in order to meet the Technology Management education and training needs of Sri Lanka. The department's activities are multi-disciplinary and it offers several Management and Technology Management subjects for B.Sc. Engineering & B.Sc. Transport & Logistic Management degree programmes. In addition to offering management subjects for the entire engineering faculty, the department offers a postgraduate course leading to Master of Business Administration (MBA) in Management of

Technology and Postgraduate Diploma in Business Administration specialized in Management of Technology.

Apart from these postgraduate courses the department offers M.Sc., M.Phil., and Ph.D. degrees by research. Specialized staff for these programmes is drawn from other departments in the faculty, other universities and industry.

The department also conducts a number of Short-Courses for the industry and is willing to undertake tailor made short-term training programmes on requests by the industry.

To assure the highest quality of its programmes the department maintains close collaborations with Foreign Universities, Professional Institutes and Industry in conducting the degree programmes and short courses.

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.

The Vision of the University of Moratuwa is to be a center of excellence of higher learning, research and related activities with emphasis on national relevance, international recognition, innovation and creativity in engineering, architecture and other professional disciplines.

The Mission of the University of Moratuwa is to be an internationally recognized center of excellence in higher learning, research, consultancy and other professional activities in engineering, architecture and allied professional fields by creating an environment conducive to nurturing the inquiring mind and developing skills for a diversity of challenges and thus to be a leader in contributing to sustainable scientific, technological, social and economic development of Sri Lanka.

The vision and mission statements of the Department of Management of Technology were also observed by the team.

The Vision of the Department of Management of Technology is to see that Sri Lanka reaches regional best practiced levels of performance in relation to Science and Technology / Industrial Development within the first decade of this century.

The Mission of the Department of Management of Technology is to educate and train all relevant sectors of the community to manage the country's technology and the industry base to a level required to successfully compete in the world markets.

3.1 Aims

The DMOT aims to develop the managerial capabilities of the graduates of Faculty of Engineering, so that they can perform well in their professional environment and develop technology managers required for the present industrial society.

- In this context it aims to provide Management subject modules to enrich the undergraduates with both theoretical and practical knowledge in the sphere of Management, irrespective of their specialized engineering fields. Therefore the output of the department would be more holistic whilst enabling to produce managerial oriented engineers to the industry.

- Postgraduate degree programmes to provide advanced knowledge on technology management in order to develop professionals for managing technology based organizations and to generate new knowledge in technology management.

In addition to the above, following supplementary aims are achieved:

- To ensure intellectual and friendly environment for both students and staff.

- To create more interaction between students and staff by means of lecture participation, researches and other extended activities.

- To provide opportunities to students in enhancing their competence, oral and written communication and technological skills in order to pursue their prospective careers.

- To promote healthy rapport with the industry for the sake of mutual benefits.

- To make awareness about the importance of non-technical perspectives within the profession of engineering.

3.2 Learning Outcomes

➢ B.Sc. Degree Programme

The Department of Management of Technology does not offer a specialized degree programme for undergraduates. Therefore, there are no undergraduates, attached to the department. But it serves to all undergraduates of the Engineering Faculty offering subjects on Management and Technology. Indeed the role of the department is like a Service Department. Subjects are offered by the department for all levels of the degree programme. Students should follow 8 credits of management subject modules in order to complete their respective degree programmes.

The learning outcomes of the subject modules offered by DMOT are as follows:

- Understanding basic theories and concepts in Management & Technology Management.

- Appreciation of management practices within the social context of engineering profession.

- Problem solving skills necessary to tackle new challenges throughout their careers.

- Capability of working in a group or independent project work.

- Good oral and written presentation skills.

- Facilitate managerial skills in order to be a successful entrepreneur.

- Have the ability to develop critical self-directed learning (CSDL).

➢ **Postgraduate Programmes**

Apart from undergraduate teaching, the department pays much attention towards the postgraduate programmes. It caters several postgraduate programmes aiming variety of target groups. Therefore a significant number of postgraduate students are attached to the department.

Learning outcomes of the MBA in Management of Technology and Postgraduate Diploma are as follows:

- Skills in how to exploit technology to create business opportunities and acquire technology based competitive advantages
- Expertise in integrating technology strategy with business strategy.
- Expertise in managing technological innovations and technology transfer.
- Skills and techniques in managing operational activities of technology based organizations.
- Skills to be an effective leader and manager in modern organizations.

4. FINDINGS OF THE REVIEW TEAM

The findings of the review team during the visit to the Department of Management of Technology of the University of Moratuwa from 10th to 12th December 2007 are summarized in this section of the report. They will be classified according to the eight aspects that the quality assurance process concentrates on.

4.1 Curriculum Design, Content and Review

The curriculum was initially developed in 1998, realizing the industry need of having managerial oriented background for the engineering profession. Prior to designing of the curriculum, the department had in-depth discussions with both the academia and professionals in the industry in order to meet their expectations.

The base for the curriculum is a blend of Management and Technology related subjects. It is revolving around the core subjects of Economics, Marketing, Accounting, Business Management, Human Resource Management, Operations Management and Technology Management. Most of the subjects which are offered by the department are non-technical in nature. Therefore, it expands the horizons of the undergraduates in a more comprehensive way.

In year 2000, with the structural change of the academic term into academic semesters, the curriculum was also modified accordingly. Students can choose wide variety of options from management subjects depending on the requirement of their discipline. Two comprehensive

modules are offered in level-3, so that engineering students in the faculty can acquire basic management knowledge. In level-4 engineering students are offered in-depth modules which provide the opportunity to enhance the knowledge depending on their special interests. However, it was observed that some level 3 and 4 modules start at a level and some students find it difficult to grasp the content.

Time to time DMOT has identified special set of new modules to cater the requirement of degrees offered by other departments. Also the review team has observed that the DMOT is constantly making improvements in the curriculum to meet the emerging needs of the industry. In addition, once in two years the department organises a series of meetings and discussions with the industry and academia to revise the curriculum.

The DMOT also has the good practice of having Department - Industry Consultative Board (DICB) meetings twice a year to identify new challenges and issues in the sphere of MOT. Apart from that, constructive suggestions are being made from Faculty - Industry Consultative Board (FICB) meeting held once a year.

However, the team observed that the contents of Management Skill Development module need to be improved to cover all the relevant aspects of management skills.

Strengths and Good Practices:

- Regular feedback is obtained from DICB, FICB and Alumni
- Curriculum is being reviewed on a regular basis.

Weaknesses

- Lack of foundation courses in some of the modules.

Considering all the facts given in the SER, observations and evidence, it is the view of the Review Team that the Curriculum Design, Content and Review can be judged as ***good.***

4.2 Teaching, Learning and Assessment Methods

Knowledge is disseminated mainly through lectures where the medium of instruction is English. All lectures are conducted using advanced audio visual aids while providing handouts and other relevant reading material in advance.

Prior to the commencement of course modules, students are provided with course outlines, prerequisites, course objectives, learning outcomes, syllabus, method of assessments and recommended readings.

Lecturers always encouraged student participation by raising questions. This was evident while observing lectures during the visit. Participation in group discussions and students' presentations are also used to promote their learning.

In addition to lectures, students are encouraged to read more on subjects. Those books and references are often available in the university library or in the Internet. Adequate internet access facilities are available for all students.

Each lecturer has allocated 2 hours per week to enable students to discuss their problems and the time schedule is displayed in the department's notice board though many students are not aware of this arrangement.

Summative and formative assessment methods are being used to evaluate the students' performance. The summative component should be not less than 30% and not more than 60% of the total marks. In addition, students are required to achieve a minimum of 40% of the summative component to be eligible to sit for the semester examination. A minimum requirement of 20% should be obtained from the written component of the end-of-semester examination in order to obtain a grade of D (conditional pass) or above for a course module. This is a University requirement applicable for all modules. Semester results are given to students in writing.

The continuous assessments are are given in the modes of assignment reports, case study presentations, quizzes, mid-terms tests etc.

The end of the semester examination assesses students' knowledge transferred through various methods. Examinations are designed to test students' ability to perform under time limitation without referring to their lecture notes or any other material. Examination questions take different forms such as, short notes, essays, numerical problems, results interpretation and multiple-choice questions.

Examination papers are moderated by internal moderators pre-assigned in the beginning of the semester to ensure questions are clear, relevant and adequately covered. Moderators are requested to submit their comments in the provided format. The answer scripts are marked anonymously according to the marking scheme prepared by the examiner and the answer scripts/marks are moderated by the same moderator for the module. The marks are displayed on the notice board and the students are given an opportunity to apply for re-correction within a specified time period.

Depending on the credits earned by the student for each module, an overall Grade Point Average (GPA) is calculated. Student is awarded a class based on their overall GPA at the completion of all the graduation requirements within five academic years.

The continuous assessments are evenly distributed during the semester in order to balance the workload of the students. This is done by preparing a student workload sheet prior to the commencement of the semester. Hence the assignments are scheduled in such a way to evenly distribute the workload throughout the semester.
However, some students complained that the number of slides and the text per slide were too much in certain instances.

Strengths and Good Practices:

- Various methods of dissemination used to suit the requirements of modules.
- Special effort made to make sessions interactive.
- Opportunities to develop soft skills.
- Methodical approach to balance the workload throughout semester.
- Allocation of students contact hours.
- Availability of a comprehensive checklist for moderators

- Providing an opportunity for re-correction of continuous assessment and end-semester results.

Weaknesses

- Too much text in some power-point presentations
- Too many slids in certain instances.

Considering all the facts given in the SER, observations and evidence, it is the view of the Review Team that the Teaching, Learning and Assessment Method can be judged as ***good.***

4.3 Quality of Students Including Student Progress and Achievements

Since the students of Faculty of Engineering only offer a few modules from DMOT, it is difficult to directly relate the quality, progress and achievement of students to the department under review.

Quality of the output is evident, through the academic achievements they acquire on the completion of the degree programme. Academic performance of the undergraduates can be evaluated by the distinctions or honours secured by them. But in the case of DMOT, since the undergraduates are not directly attached to the department, it is difficult to measure their academic performance. However, by going through the final results obtained by them in the end semester examination, DMOT makes efforts to evaluate the quality of its students. The analysis (annexure 2) is done for each module offered by DMOT during the years 2005 and 2006.

Strengths and Good Practices:

- Opportunity to attract the best students from A/L examination
- Continuous monitoring of the student performance in each module**.**

Considering all the facts given in the SER, observations and evidence, it is the view of the Review Team that the Quality of Students Including Student Progress and Achievement can be judged as ***good.***

4.4 Extent and Use of Student Feedback, Qualitative and Quantitative

The student feedback is very vital in maintaining the quality of the programme and revising course curriculum. DMOT uses direct and indirect methods to obtain student feedback.

Students who receive the services of DMOT are asked to formally evaluate their lecturers using a standard questionnaire, at the end of every semester. This questionnaire provides information on clarity of explanation, communication/discussion with students, quality of lecture material, use of audio and visual aids, quality and the number of exercises and assignments given and methods of evaluating, etc. (annexure 3)

Individual lecturers distribute their questionnaires to obtain feedback from students. Students' feedback is analyzed by a panel including Head/DMOT with other senior academic staff and the lecturer responsible for the course module. The lecturer may be advised to improve the quality of teaching based on the results of the analysis done. Since the above mechanism will

only benefit the subsequent batch of students, an effective mechanism to rectify the real-time student problem is also important. This shortcoming is also revealed at the discussion with the students. In addition, students are also concerned about the implementation of suggestions they make informally.

Strength and Good Practices:

- Student feedback is analyzed and corrective actions taken.

Weaknesses

- Lack of a formal mechanism to identify real-time problems.

It is the view of the Review Team that the extent and use of student feed back by the members of the staff of the department can be judged as ***satisfactory.***

4.5 Postgraduate Studies

In addition to the undergraduate level teaching, the DMOT pays considerable attention in offering postgraduate programmes to the students who come from the industry as professionals, practitioners, researchers etc. In order to cater to the industry needs DMOT offers a variety of appropriate programmes and tailor made short courses.

Division of postgraduate studies headed by the Director Postgraduate Studies in the Faculty of Engineering handles administration duties of PG degrees. Introduction of new PG courses or subjects, admission of students, assessments, examinations, appointment of examiners and moderators and other matters, related to PG studies, originated from the respective departments are scrutinized by the Higher Degrees Committee (HDC) of the Faculty chaired by the Director PGS, approved by the Faculty and the UOM Senate. Entry qualifications of the PG students are governed by the University by-laws. Division of postgraduate studies stipulates guidelines to research students and supervisors.

Each PG taught course is coordinated by the course coordinator of the specific programme, who is a senior academic of respective department. Research degrees are monitored by the research coordinator of the department who is a member of the HDC representing the department.

Apart from the formal degree programmes, the DMOT offers systematic development programmes to upgrade knowledge and skills of the professionals.

- **Research Degree**

DMOT is offering following research degree programmes in the area of technology management.

i. M. Sc. (One year full time)
ii. M. Phil. (two years full time or four years part-time)
iii. Ph. D. (three years full time or six years part- time)

However, the subject review is really focused on the undergraduate programmes and the taught postgraduate programmes. Therefore the review Team has not paid much attention on the research postgraduate programmes.

- **MBA & PG Diploma in Management of Technology**

In recognizing the vital role played by Management of Technology and the demand for the professionals in technology management in the present industrialized society, the department offers a Masters of Business Administration (MBA) in Management of Technology and a Postgraduate Diploma in Business Administration specialized in Management of Technology.

MBA in Management of Technology is a Six Semester (two-year) degree programme. The curriculum consists of a common core of management, technology management modules, several elective modules and a compulsory research project. Course modules are shown in (annexure 4).

Postgraduate Diploma in Business Administration specialized in Management of Technology is a Four Semester programme. The curriculum consist a common core of management, technology management modules and several elective modules.

About 45 students are admitted annually for the MBA / PG Diploma in Management of Technology. Students follow course modules during the first four semesters on part time basis. First year work is assessed by the end semester examinations. During last two semesters students carry out an independent research in areas related to Management of Technology.

The students select a research topic suggested by a staff member or an industry related problem at their place of employment. Normally an internal supervisor and an industrial co-supervisor guide the student. At the end of the research project a dissertation is submitted and an oral examination is held to evaluate the student project. The assessment committee consisting of internal and external examiners is appointed for the assessment.

Students who are successful in both components are awarded an MBA degree in Management of Technology. PG diploma is awarded to those who pass only the written examinations, based on first four semester taught modules.

Completion of the degree within stipulated time frame is at a satisfactory level in postgraduate programmes of the DMOT. That lies around 40%. However, the DMOT has identified that the inadequate planning of research project work as the key reason for not completing the programme within the stipulated time period and taken effective measures to rectify it. Withdrawals of the students registered for the postgraduate degrees lies around 5%.

Discussions with the postgraduate students authenticate that they were very appreciative of the measures taken by the department to improve the completion rate within the stipulated time. Also the postgraduate students have expressed that most of the industries were not aware of the benefits of allowing their employees to follow this MBA programme. If the industry is aware of the benefits it would be more flexible of providing sponsorship, leave and flexible work schedule to follow the programme. The reputation of the MBA programme from DMOT has earned to complete it within the stipulated time period is considered as a major advantage by the students since it enables them to schedule their work plans well in advance.

Additionally most of the senior lectures supervise MBA theses of students and have published extensively in local and international Journals and conference proceedings.

Strengths and Good Practices:

- Availability of well recognized MBA programme.
- Selection of location to suit the requirement of resource persons and students.
- A good blend of resource people from academia and industry.
- Relatively high completion rate.
- Reputation for maintaining the time schedule of the programme.

Weaknesses

- In-sufficient awareness of the benefits of the programme among the industry.

Considering all the facts given in the SER, observations and evidence, it is the view of the Review Team that the present status of the postgraduate studies of the department can be judged as ***good.***

4.6 Peer Observations

The department operates a formal peer observation system for the identification, development and dissemination of good teaching and learning *practices* and assessment. Each staff member selects another staff member for the observation of his/her teaching. The selected member observes the others teaching (usually once a semester) and makes comments on preparation, method of teaching, delivery, lecture material, relationship and interaction with the students by filling a standard form (annexure 5).

- They meet privately to discuss observations made during the lecture. They also meet to discuss course content, teaching methodologies, learning and assessment methods and new developments of the subject.

- The observations are communicated to the Head of the department. Head of the department arranges a discussion with the lecturer and the peer if necessary.

- The matters are discussed in general at the departmental meetings. The good practices developed by the colleagues are informed and incorporation of such practice into others' teaching and alleviation of weaknesses is encouraged.

The observed documents confirmed that the DMOT has adhered to the above procedures. It has also enabled the academic staff to identify and rectify each others' strengths and weaknesses.

All the academic staff members of the Department meet at least once in two months. Special departmental meetings are held depending on the needs. Both academic and administrative matters are discussed at theses meetings.

Strengths and Good Practices

- Availability of a well defined peer evaluation procedure

Considering all the facts given in the SER, observations and evidence, 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 Skill Development

Courses which are offered by the DMOT are structured in a way to provide opportunities for students to develop a variety of skills in addition to subject-specific knowledge. In designing the curriculum much consideration has been given to this component. It is clearly reflected by the learning outcomes of the department.

DMOT adopts a mechanism for continuous evaluation and assessment of students' assignments, project reports and guiding them to improve their writing skills. Also students have ample opportunities for development of presentation skills through various activities such as individual and group presentations, group discussions, oral examinations etc. Further, students use modern audio-video equipment for their presentations in order to improve the quality of their presentations.

DMOT provides the students opportunities to work in group task projects which enable them to acquire team work skills, leadership skills and organizing capabilities.

Department also offers a module Management Skills Development for the undergraduate at level 4, to enhance the soft skills of the students.

Strengths and Good Practices:

- Varity of modules to cater to the specific needs of degrees offered by different departments.
- Presence of special measures within modules to develop soft-skills.

Considering all the facts given in the SER, observations and evidence, it is the view of the Review Team that the present status of the skill development adopted by the members of the staff of the department is judged as ***good***.

4.8 Academic Guidance and Counseling

Students are provided with necessary information with regard to academic programme offered by the DMOT through the website. Also the office of the Director of Undergraduate Studies of the Faculty of Engineering provides guidelines, performance criteria and registration procedures to students. The student performance records are also available at this office for their perusal. This enables the students to plan the academic activities accordingly.

The DMOT has appointe level coordinators for each level to guide the students on management subject selection and other related academic issues.

The students are given a course outline at the beginning of each semester for each subject. This gives the course objective, the learning outcome, subject coordinator, lecturers, module

content, evaluation criteria and a list of references. However, it is desirable if the learning outcomes are provided for each topic of the module.

The students are strongly encouraged to discuss subject matters with the respective subject coordinator or the lecturers. Each lecturer has allocated a two hour timeslot per week for this purpose. However some students were not aware of this arrangement therefore it is suggested to include the time slot in the course outline sheet.

Since the department does not offer a separate degree programme, it is unable to play a major role in academic guidance and counselling.

Strengths and Good Practices:

- Availability of a specific timeslot with the respective staff members in to discuss about the subject related matters.

Considering all the facts given in the SER, observations and evidence, it is the view of the Review Team that the present status of the academic guidance and counseling adopted by the members of the academic staff of the department can be judged as ***good.***

5. CONCLUSIONS

The Review Team appreciates the excellent working arrangement made by the department during the review visit. The staff members understand about the review process and provided all necessary documents to assist the review. Whenever the Review Team needed additional information or documents the Head of the Department and the academic staff provided the same. The academic supportive and non-academic staff too facilitated the review process with the common objective towards the development of the department. The Team is grateful to all the categories of staff in the department for the support given during their visit.

The strengths, Good Practices and Weaknesses of the DMOT are identified under the specific titles as follow:

<u>Curriculum Design, Content and Review:</u>

Strengths and Good Practices:

- Regular feedback is obtained from DICB, FICB and Alumni
- Curriculum is being reviewed at a regular basis

Weaknesses

- Lack of foundation courses for some of the modules

<u>Teaching, Learning and Assessment Methods:</u>

Strengths and Good Practices:

- Various methods of dissemination of delivery to suit the requirements of modules.
- Special efforts made to make the sessions interactive.
- Providing opportunities to develop soft skills.
- Methodical approach to balance the workload throughout semester.
- Allocation of students contact hours.

- Availability of a comprehensive checklist for moderators
- Providing an opportunity for re-correction of continuous assessment and end-semester results.

Weakness
- Too much text in some power-point presentations

Quality of Students, Including Student Progress and Achievements:

Strengths and Good Practices:
- Opportunity to attract the best students from A/L examination
- Continuous monitoring of the student performance in each module**.**

Extent and use of Student Feedback, Qualitative and Quantitative:

Strengths and Good Practices:
- Student feedbacks from evaluation questionnaires are analyzed and corrective action taken.

Weaknesses
- Lack of a formal mechanism to identify real-time problems.

Postgraduate Studies:

Strengths and Good Practices:
- Availability of well recognized MBA programme.
- Selection of location to suit the requirements of resource persons and students.
- A good blend of resource people from academia and industry.
- Relatively high completion rates.
- Reputation for maintaining the time schedule of the programme.

Weaknesses
- In-sufficient awareness of the benefits of the programme among the industry.

Peer Observations:

Strengths and Good Practices:
- Availability of well defined peer evaluation procedure

Skills Development:

Strengths and Good Practices:
- Varity of modules to cater to the specific needs of different departments.
- Presence of special measures within modules to develop soft-skills.

Academic Guidance and Counseling:

Strengths and Good Practices:

- Availability of specific timeslot with the respective staff members in order to discuss about the subject related matters.

The judgment given for the eight aspects of the subject review are summarized below.

Aspect Reviewed	Judgment Given
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	Satisfactory
Postgraduate Studies	Good
Peer Observations	Good
Skill Development	Good
Academic Guidance and Counseling	Good

The overall judgment is suspended

6. RECOMMENDATIONS

The Review Team would like to make the following recommendations in order to improve the quality of the programme in the DMOT.

- Introduction of foundation programmes during the second level for the modules where it is required.
- The module outline should be further improved by including learning outcomes for each module, comprehensive description of evaluation method, breakdown of the total time among individual topics, reading list under each topic, and relationship of learning outcome of each module with the overall learning out come of the degree programme.
- Incorporate all the relevant aspects of management skills in the curriculum.
- Redesign some power-point presentations to reduce the text contents.
- Providing an opinion box for students to make their suggestions.
- Organize student-staff forums at each level at least once a semester to obtain a feedback of student grievances and suggestions.
- Introduce a mechanism to obtain students views while the courses are conducting and feed those information to relevant channels
- Launch awareness programmes of the benefits of the MBA in MOT among the top management of industries.

7. ANNEXES

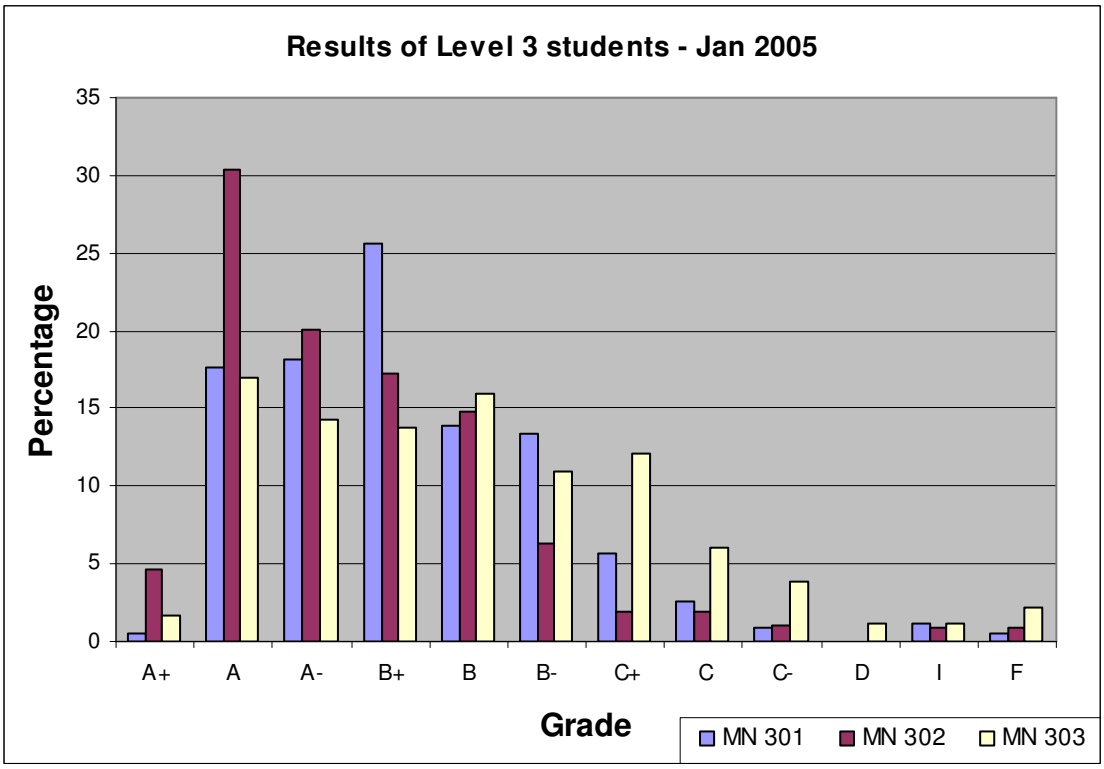
Annex 1. AGENDA FOR THE REVIEW VISIT

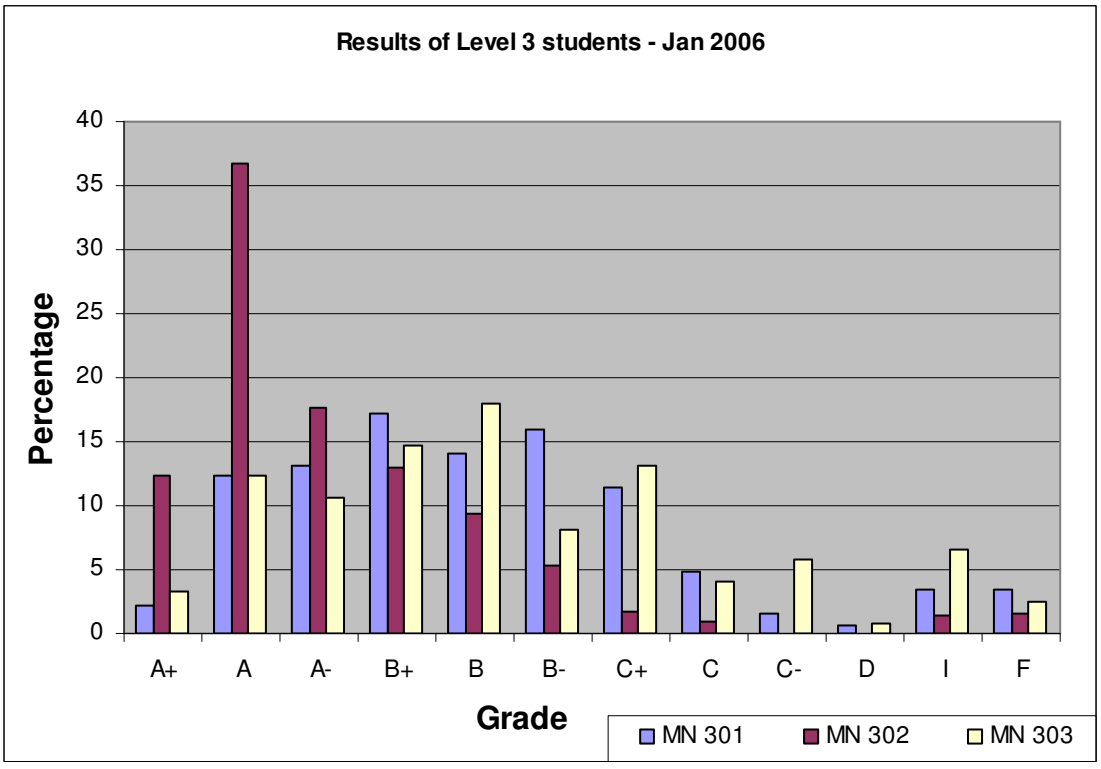
Day 1 : Monday 10th December 2007		
	Activity	**Venue**
08.30 – 09.00	Private Meeting of Review Panel with QAA Council Representatives	DMOT – BR
09.00 – 09.30	Welcome to DMOT, Finalize proposed Agenda for the visit	DMOT – BR
09.30 – 10.00	Faculty QA Cell , Dean of the Faculty of Engineering	Deans Office
10:00 – 10:30	Meeting(s) with the Vice Chancellor	VCs Office
10.30 – 11.30	Observing Lectures (Small Business Mgt. & Entrepreneurship)	Lecture Hall
	Discussion with Undergraduate Students	Lecture Hall
11:30 - 12.30	Department Presentation on the Self Evaluation Report Discussion	DMOT –BR
12.30 – 13.30	Lunch	Staff Lodge
13.30 – 14.00	Observing Departmental Facilities (working Tea)	DMOT
14.00 – 15.30	Observing Other Facilities	Library,UNIC,QAA
15.30 – 16.30	Meeting with Departmental Academic Staff	DMOT –BR
16.30 – 17.30	Brief Meeting of Reviewers	DMOT –BR

Day 2 : Tuesday 11th December 2007.		
	Activity	**Venue**
09.00 -10.00	Observing Documents (Working Tea)	DMOT
10.00 – 10.30	Observing Lectures - Engineering Economics	Lecture Hall
10.30 – 11.00	Observing Lectures - Technology Management	Lecture Hall
11.00 - 12.00	Meeting with Instructors and Non-Academic Staff	DMOT
12.00 – 12.30	Meeting with Post Graduate Students	DMOT
12.30 – 13.30	Lunch (with Post Graduate Students and Non-academic Staff Members)	Staff Lodge
13.30 – 14.30	Presentation by Post Graduate Students	DMOT –BR
14.30 – 15.00	Tea	DMOT –BR
15.00 - 16.30	Academic Advisors and level Coordinators	DMOT –BR

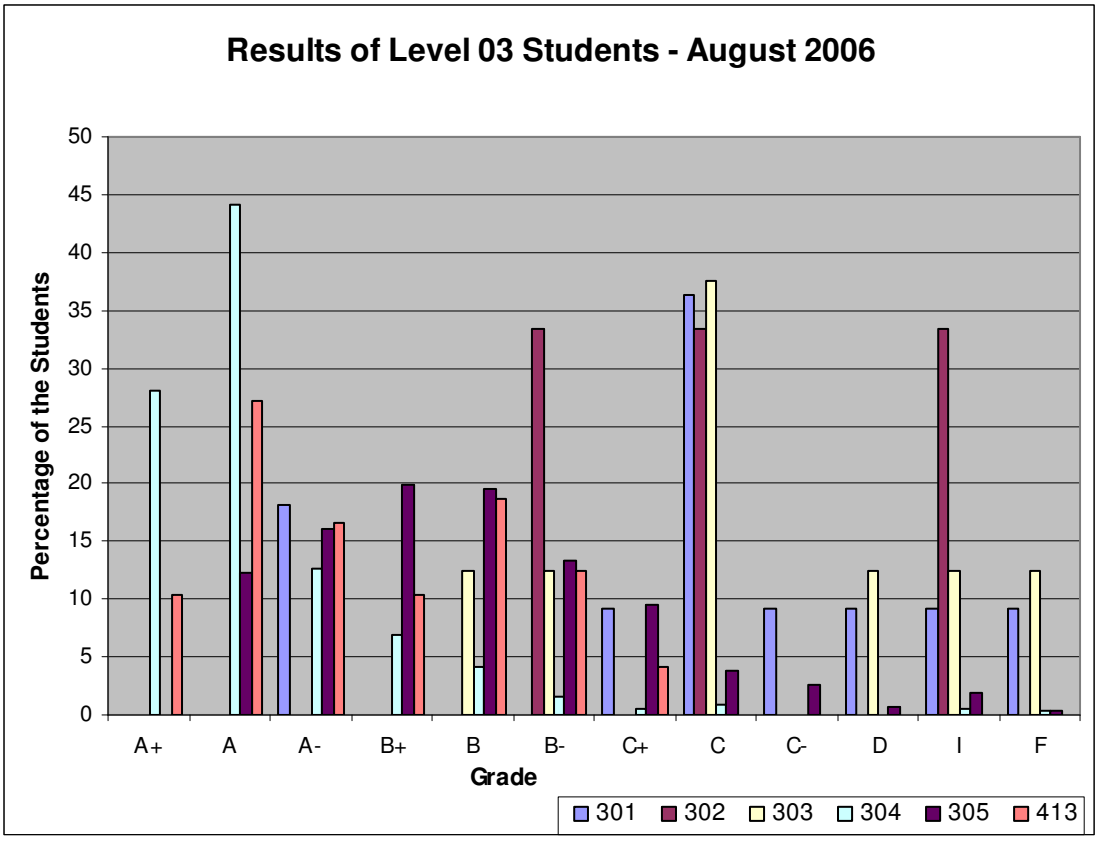
Day 3 : 12th December 2007		
	Activity	**Venue**
10:00 - 10:30	Tea	DMOT – BR
10.30 – 11.00	Observing Lectures (Management Skills Development)	Lecture Hall
11.00 – 11.30	Discussion with Undergraduate Students	Lecture Hall
11.30 – 12.00	Reviewers' Private Discussion	DMOT – BR
12.00 – 13.00	Lunch	Staff Lodge
13.00 – 14.00	Meeting with Head and Staff for Reporting	DMOT – BR
14.00 – 17.00	Report Writing (working Tea)	DMOT –BR
17:00 – 17:15	End of Sessions and Expression of Appreciation	DMOT –BR

Annex 2

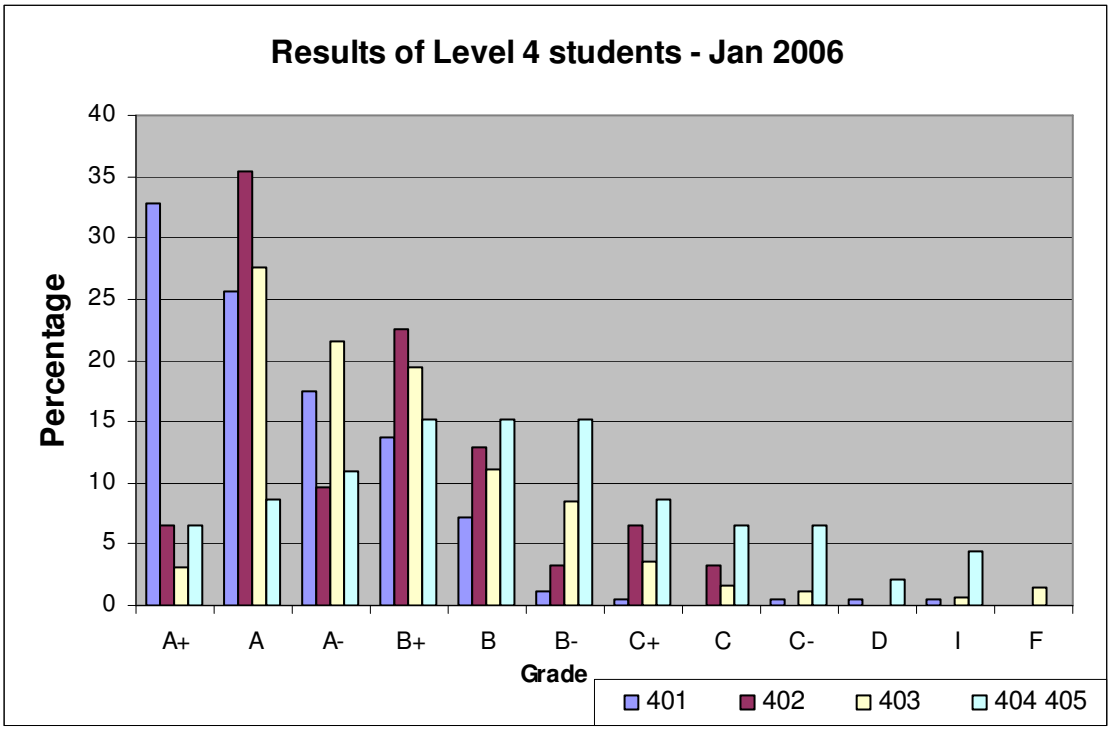


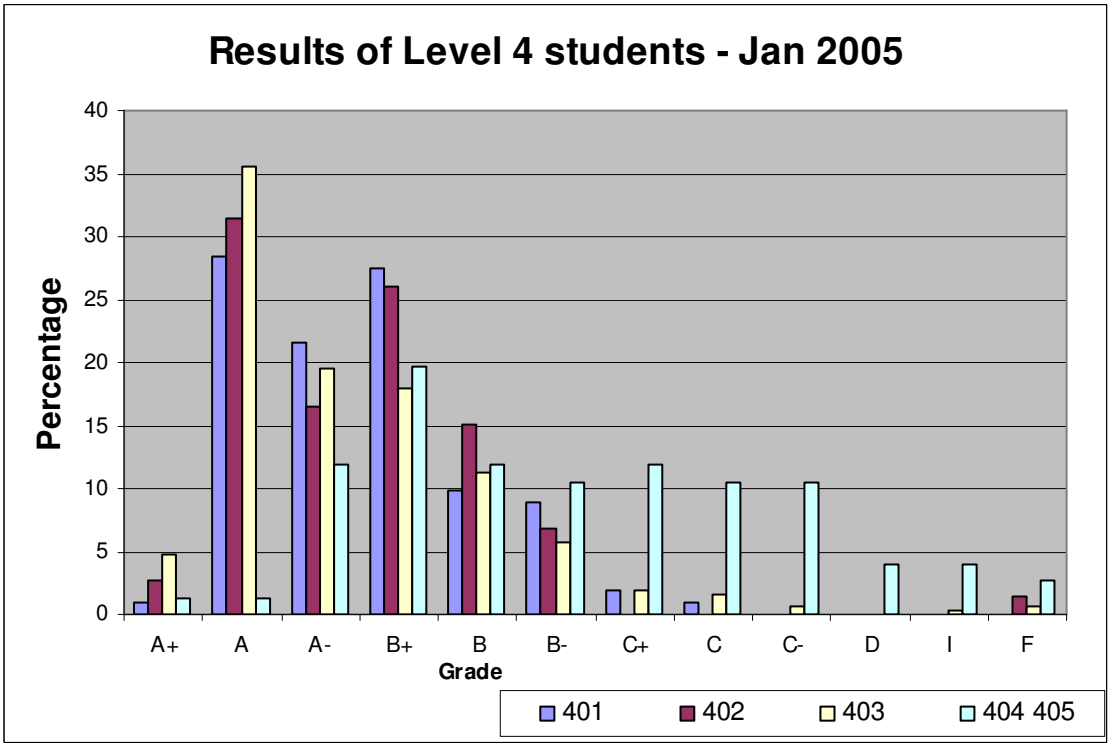


MN 301 - Organizational Management
MN 302 - Financial Management & Accounting
MN 303 - Elements of Economics & Technology

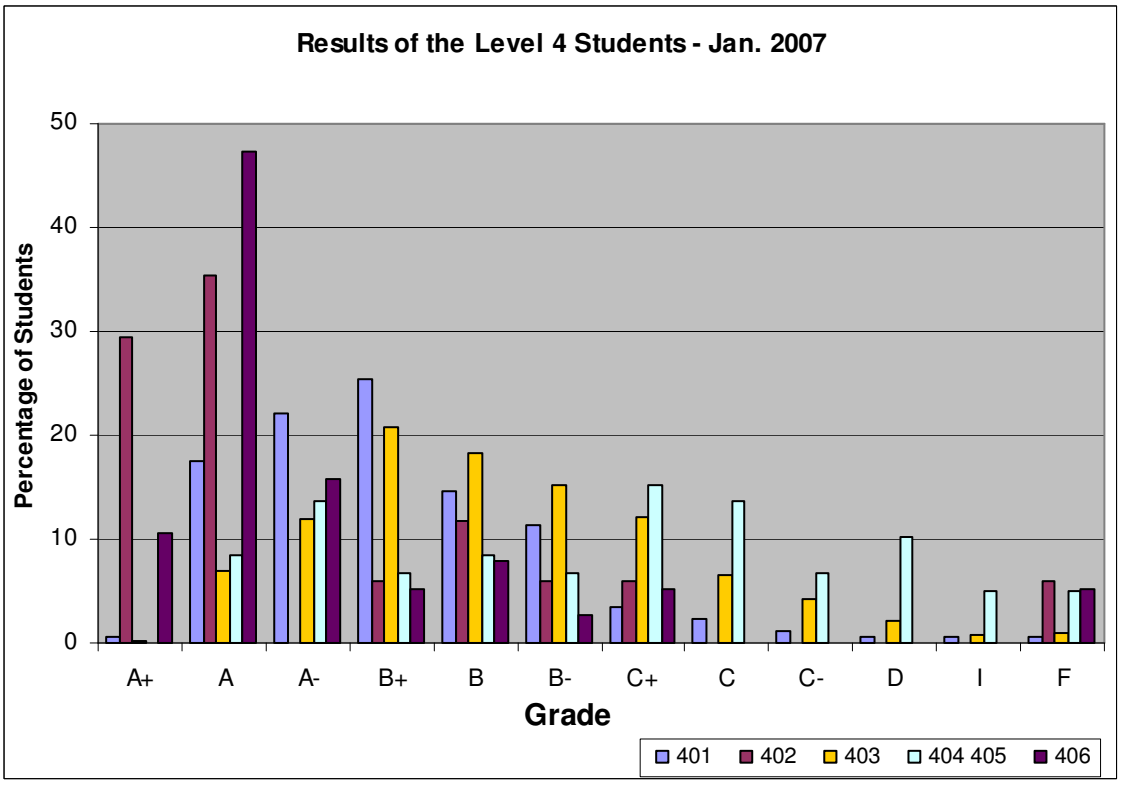


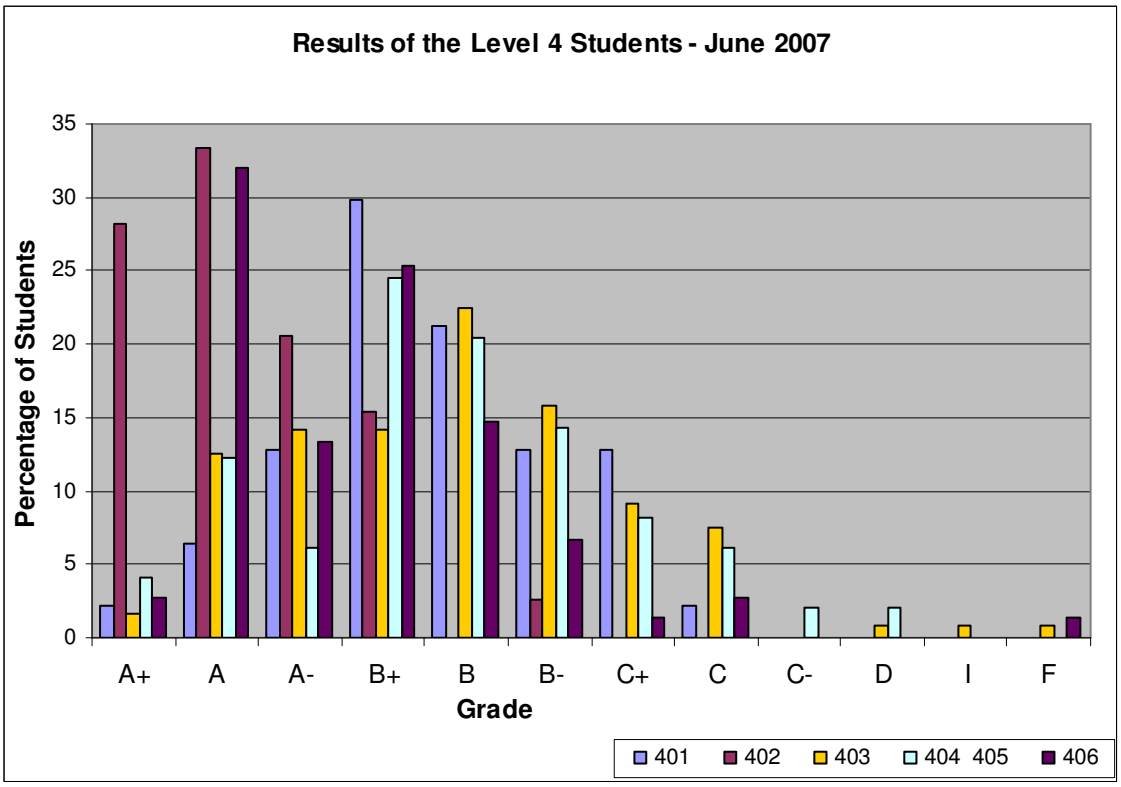
MN 301 - Organizational Management
MN 302 - Financial Management & Accounting
MN 303 - Elements of Economics & Technology
MN 304 - Business Economics & Financial Accounting
MN 305 - Industrial Management & Marketing
MN 413 - Consumer & Industrial Marketing





MN 401 - Industrial Relations & Marketing
MN402 - Engineering Economics
MN403 - Human Resource Management
MN 404 405 - Technology Management/Technology Management & Applications


Results of the Level 4 Students - Jan. 2007
Percentage of Students
50
40
30
20
10
0
A+
A
A-
B+
B
B-
C+
C
C-
D
I
F
Grade
401
402
403
404 405
406


Results of the Level 4 Students - June 2007
Percentage of Students
35
30
25
20
15
10
5
0
A+
A
A-
B+
B
B-
C+
C
C-
D
I
F
Grade
401
402
403
404 405
406

Annex 3. STUDENT EVALUATION FORM

FACULITY OF ENGINEERING

UNIVERSITY OF MOROTUWA

STUDENT FEEDBACK FORM

Lecture: Module Date
Course: Academic Year & Science

Please answer only the question that is relevant and ( ) the answer closest to your response.
Please be honest, your feedback is anonymous.

	Strongly Agree	Agree	Do not Know	Disagree	Strongly Disagree
Enthusiasm:					
Lectures were interesting	☐	☐	☐	☐	☐
Lectures displayed confidence	☐	☐	☐	☐	☐
Lectures motivated me to do my best	☐	☐	☐	☐	☐
Organization:					
Lectures were well structured	☐	☐	☐	☐	☐
Lectures explained hoe each topic fitted in	☐	☐	☐	☐	☐
Lectures gave a preliminary overview of each lecture	☐	☐	☐	☐	☐
Report/Interaction of Lecturer:					
Friendly, easy to talk to	☐	☐	☐	☐	☐
Offered to help student with problems	☐	☐	☐	☐	☐
Asked question from the class	☐	☐	☐	☐	☐
Encouraged question and comments	☐	☐	☐	☐	☐
Praised student for good ideas	☐	☐	☐	☐	☐
Tolerant of other viewpoints	☐	☐	☐	☐	☐
Task Orientation:					
Syllabus was substantially conversed in the class	☐	☐	☐	☐	☐
Number of worked example was adequate	☐	☐	☐	☐	☐
Practical application were discussed where possible	☐	☐	☐	☐	☐
Practicals enhanced my knowledge on the subject	☐	☐	☐	☐	☐
I had sufficient time to take down notes	☐	☐	☐	☐	☐
Handouts were useful	☐	☐	☐	☐	☐
Recommended useful text books (s)	☐	☐	☐	☐	☐
Recommended useful website (s)	☐	☐	☐	☐	☐
Assessments accurately measured my ability	☐	☐	☐	☐	☐
Feedback on assessments was helpful	☐	☐	☐	☐	☐
Lecture advice regarding exam was helpful	☐	☐	☐	☐	☐
Clarity:					
Blackboard/whiteboard presentation were clear	☐	☐	☐	☐	☐
Visual presentation were clear	☐	☐	☐	☐	☐
Lecture was sufficiently audible	☐	☐	☐	☐	☐
Lecture explained subject material well	☐	☐	☐	☐	☐

Please answer only the question that are relevant and ( ) the answer closest to your response. Please be honest, your feedback is anonymous

	Very High	High	Average	Law	Very Law
Learning Experience offered By this module:					
Level to which course objective are realized	☐	☐	☐	☐	☐
Level to which course outcomes are achieved	☐	☐	☐	☐	☐
Enhancement of engineering/ profession approach	☐	☐	☐	☐	☐
Value of overall learning experience	☐	☐	☐	☐	☐

Handouts:
Amount of material:

1. Too much
2. Could be reduced
3. Adequate
4. Slightly inadequate
5. Too little/practically nothing

Speed of Lectures
The speed of lecture was:

1. Very Fast
2. Fast
3. Just right
4. Slow
5. Very slow

Difficulty:
Compared to other modules of this semester, this Module is:

1. Very difficult
2. Difficult
3. Average
4. Easy
5. Very easy

Workload:
The workload on this modules is:

1. Very high
2. High
3. Average
4. Low
5. Very low

Class Test:
In the last assessment for this module, I obtained:

1. Less than 30%
2. 30 - 49%
3. 50 – 70%
4. over 70%

Learning Opportunity:
Considering your experience with the module, and disregarding your need for it meet degree Requirements, would you still have taken this module?

Yes ☐

No ☐

Any other comments:

Annex 4. MODULES OFFERED IN MBA

Module Code	Module Name	No. of Credits
Semester I		
MN 5201	Organizational Behavior and Management	3
MN 5202	Analysis for Managerial Decision Making	3
MN 5203	Communication and Presentation Skills*	1.5
MN 5209	Technology Management: Principles and Strategies	3
Semester II		
MN 5204	Teamwork & Negotiation Skills*	1.5
MN 5205	Economics for Business	3
MN 5206	Marketing Management	3
MN 5210	Operations Management	3
Semester III		
MN 5207	Accounting and Financial Management	3
MN 5208	Strategic Management	3
MN 5211	International Technology Transfer	3
MN 5212	Management of Innovation and R & D	3
Semester IV		
MN 6201	Skills for Research Project **	2
MN 5213	Social Shaping of Technology	3
MN 5214	Human Resource Management	3
MN 5215	Supply Chain Management	3
MN 5216	IT and E Business	3
MN 5217	Business Process Re-Engineering	3
Semester V		
MN 6202	Research Project - Phase I**	2
MN 5218	Technology Entrepreneurship and Commercialisation	3
MN 5219	Project Management	3
MN 5220	Enterprise Resource Planning	3
MN 5221	Quality Management and Standardization	3
MN 5222	Technology Policy	3
Semester VI		
MN 6202	Research Project - Phase II**	10

Annex 5. MODERATION OF EXAMINATION PAPERS

CHECKLIST AND REPORT FOR MODERATION OF EXAMINATION PAPERS

Department : Management of Technology

Course : B.Sc. Engineering

Examination : Level 4 – Semester 1 2006/2007

Module Code and Title: MN 404 Technology Management

MN 405 Technology Management & Application

Item	Yes	NO (Please specify the problem and make your comments)
Examination Paper		
1. Is the time allocated for the examination as same what is stated in the module outline?		
2. Do the questions reflect the Learning Outcomes adequately?		
3. Is the presentation and layout of the examination paper in the Faculty approved Guidelines?		
4. Does the cover page provide clear instructions to the candidates?		
5. Are the additional materials listed (charts, tables etc.) included in the question paper and reoffered to in the relevant questions?		
6. Are the questions of a standard appropriate to the level being assessed?		
7. Are the questions clear and unambiguous?		
8. Are the mark allocations for questions appropriate?		
9. Is numbering of pages and questions correct?		
10. Are all figures, tables and equations included and correctly numbered?		
11. Are figures, tables, equations clear and correct?		

Item	Yes	NO (Please specify the problem and make your comments)
Model Answers		
12. Are the answers accurate including calculations?		
13. Are the salient points described (or listed) for the answers to descriptive questions?		
14. Are the marks for parts and subparts of the questions indicated in the answers?		

General comments on the examination paper and model answers:

Moderator's Name and Signature:
Date:

Follow – up Action by Examiner

Examiner's Name and Signature:
Date:

Once completed this form is considered to be a *Quality Record.* Head of Department should file it to be used as evidence for *Programme /Subject Review.*

Prepared by EFQAC