UNIVERSITI TEKNOLOGI MARA

UNIVERSITI TEKNOLOGI MARA
FAKULTI KEJURUTERAAN MEKANIKAL
40450 SHAH ALAM
SELANGOR

PERMOHONAN ANUGERAH INOVASI PERKHIDMATAN AWAM (AIPA) BAGI TAHUN 2007

MENINGKATKAN JAMINAN KUALITI MODAL INSAN PELAJAR IPTA DI PERINGKAT GLOBAL MENERUSI PENGIKTIRAFAN ANTARABANGSA

16 APRIL 2007

Lampiran C

BORANG PERMOHONAN
ANUGERAH INOVASI PERKHIDMATAN AWAM (AIPA)

1. **Maklumat Agensi:**

Nama Agensi: FAKULTI KEJURUTERAAN MEKANIKAL
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No. Telefon: 0355435159 **No. Faks :** 0355435160

2. **Tajuk Projek Inovasi:**

MENINGKATKAN JAMINAN KUALITI MODAL INSAN PELAJAR IPTA DI PERINGKAT GLOBAL MENERUSI PENGIKTIRAFAN ANTARABANGSA

3. **Nama Pegawai Bertanggungjawab Untuk Dihubungi:**

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Jawatan : TIMBALAN DEKAN

Telefon: 0355435150 **No. Faks :** 0355435160

Emel: muhammadayub@salam.uitm.edu.my

4. **Pengesahan Ketua Agensi:**

Saya mengesahkan bahawa hasil inovasi ini adalah yang pertama kali diperkenalkan di dalam Perkhidmatan Awam.

Tandatangan Ketua Agensi

PROF MADYA IR DR HJ ABDUL RAHMAN OMAR
Dekan
Fakulti Kejuruteraan Mekanikal
Universiti Teknologi MARA
40450 Shah Alam
Selangor Darul Ehsan

Cop Agensi

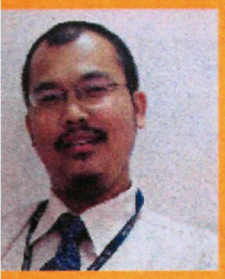
Nama : PROF. MADYA DR IR ABDUL RAHMAN OMAR

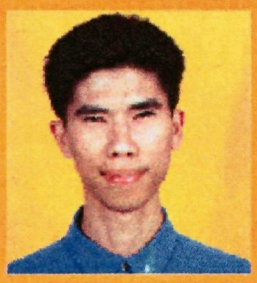
Jawatan : DEKAN **Tarikh :** 16 APRIL 2007

MANAGEMENT TEAM

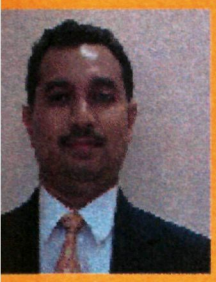








UNIVERSITI TEKNOLOGI MARA

ISO 9001:2000 Cert. No. 404071

VISI FKM

Menerajui bidang Kejuruteraan Mekanikal ke arah kecemerlangan global pendidikan dan penyelidikan yang bertaraf dunia.

MISI FKM

Melahirkan graduan dengan asas Kejuruteraan Mekanikal yang mantap, berkemahiran analitikal, berkepimpinan, berdaya saing, kreatif, inovatif dan beretika profesional.

PIAGAM PELANGGAN

Menyediakan kemudahan yang kondusif untuk pembelajaran yang berkesan.

Menghasilkan graduan yang bermutu dan memenuhi keperluan pasaran global.

Menyediakan kurikulum yang mantap dan terkini dengan penyampaian yang berkesan.

Mengadakan jalinan / networking dengan alumni, industri dan IPT di dalam dan luar negara.

Memberikan perkhidmatan yang mesra dan cekap.

DASAR KUALITI

Fakulti Kejuruteraan Mekanikal beriltizam untuk menyediakan program pendidikan dan penyelidikan yang unggul serta perkhidmatan yang profesional, cekap dan cemerlang melalui penerapan budaya kualiti bagi memenuhi kepuasan pelanggan berteraskan penambahbaikan secara berterusan dan penyelidikan

UNIVERSITI TEKNOLOGI MARA

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SINGKATAN

FKM	Fakulti Kejuruteraan Mekanikal
UiTM	Universiti Teknologi MARA
RMK-9	Rancangan Malaysia Ke-9
EAC	Engineering Accreditation Council
IMECHE UK	Institute of Mechanical Engineers United Kingdom
IPTA	Institut Pengajian Tinggi Awam
MARA	Majlis Amanah Rakyat
YAB	Yang Amat Berhormat
OBE	Outcome Based Education
AJK	Ahli Jawatankuasa
DCM	Daimler Chrysler Malaysia
BEM	Board of Engineers Malaysia
ATA	Amanah Tugasan
NUS	National University of Singapore
MS	Muka Surat

PERMOHONAN ANUGERAH INOVASI ERKHIDMATAN AWAM (AIPA) BAGI TAHUN 2007

FAKULTI KEJURUTERAAN MEKANIKAL

UNIVERSITI TEKNOLOGI MARA
40450 SHAH ALAM
SELANGOR

16 APRIL 2007

KANDUNGAN **MUKA SURAT**

MENINGKATKAN JAMINAN KUALITI MODAL INSAN PELAJAR IPTA DI PERINGKAT GLOBAL MENERUSI PENGIKTIRAFAN ANTARABANGSA

1.0 MAKLUMAT ORGANISASI

1.1 SEJARAH DAN LATARBELAKANG

Jabatan Kejuruteraan Mekanikal di bawah Kajian Kejuruteraan pertama kalinya telah ditubuhkan pada tahun 1968. Berikutan dengan pembubaran Kajian Kejuruteraan pada tahun 1996, Fakulti Kejuruteraan Mekanikal UiTM ditubuhkan. Kajian kejuruteraan atau nama barunya Fakulti Kejuruteraan Mekanikal UiTM adalah diantara Fakulti Kejuruteraan yang tertua di Malaysia.

Bermula di bangunan lama kejuruteraan, kini FKM UiTM telah berpindah di Bangunan baru dan moden iaitu di Bangunan Sains dan Teknologi Komplek pada tahun 2003. FKM UiTM dilengkapi dengan 25 makmal, 35 ruang kuliah, 102 staf, 3 dewan kuliah dan mempunyai pelbagai kemudahan pelajar. Fakulti Kejuruteraan Mekanikal menawarkan program-program berikut :

- Sarjana Doktor Falsafah EM790
- Sarjana Kejuruteraan Mekanikal EM780
- Sarjana Pengurusan Kejuruteraan EM781
- Sarjana Muda (Kepujian) Kejuruteraan Mekanikal EM220
- Sarjana Muda (Kepujian) Kejuruteraan Mekanikal (Pembuatan) EM221
- Diploma Kejuruteraan Mekanikal EM110
- Diploma Kejuruteraan Mekanikal (Perkilangan) EM111
- Diploma Kejuruteraan Mekanikal (Automotif) EM112
- Diploma Kejuruteraan Aeroangkasa EM113

Walaupun bermula dengan hanya tujuh (7) orang pelajar dalam Program Diploma Lanjutan Kejuruteraan Mekanikal di Fakulti Kejuruteraan Mekanikal, tetapi sehingga kini jumlah enrolmen pelajar Diploma adalah 1,525 pelajar, Ijazah Sarjana Muda 1200 pelajar, Ijazah Sarjana 41 orang dan Ijazah Doktor Falasafah 7 orang.

1.2 STRUKTUR ORGANISASI

Fakulti Kejuruteraan Mekanikal diterajui oleh Dekan dan dibantu oleh Timbalan Dekan (Kualiti dan Penyelidikan), Timbalan Dekan (Sumber dan Pelajar), Ketua Pusat Pengajian, Ketua Program, Penolong Pendaftar dan lain-lain lagi seperti yang terdapat dalam Carta Organisasi FKM dalam **LAMPIRAN A.** Penerangan perincian struktur organisasi (*organization profile*) disertakan dalam **LAMPIRAN B (ms B1-B7) dan LAMPIRAN C (ms C1-C6)**

1.3 VISI DAN MISI UiTM

Visi UiTM adalah menjadikan UiTM sebuah universiti unggul yang berteraskan kesarjanaan dan kecemerlangan akademik bagi menerajui dinamisme bumiputera dalam semua bidang. Manakala Misi UiTM mempertingkatkan keilmuan dan kepakaran bumiputera dalam semua bidang menerusi penyampaian program profesional, penyelidikan serta penglibatan khidmat masyarakat yang berlandaskan pada nilai - nilai murni dan etika profesional . Falsafah UiTM adalah kepercayaan bahawa individu mampu berusaha untuk mencapai kecemerlangan melalui pemindahan ilmu serta penerapan nilai -nilai murni bagi melahirkan graduan profesional yang berperanan membangunkan diri, ilmu, masyarakat dan negara. Visi, Misi dan Falsafah UiTM tersebut tetap merupakan sasaran kejayaan UiTM bagi tempoh RMK-9 yang mahu merealisasikan pencapaian UiTM sebagai universiti bertaraf dunia dalam pengertian universal: cemerlang dalam pengajaran, pembelajaran dan juga penyelidikan.

Untuk mencapai visi dan misi FKM UiTM sebagai sebuah fakulti yang menerajui bidang Kejuruteraan Mekanikal ke arah kecemerlangan global berteraskan pendidikan dan penyelidikan menjelang 2020, , tiga agenda penting telah dilaksanakan

- Mendapat Jaminan Kualiti IS09001:2000 daripada *Lloyd's Register Quality Assurance* dalam semua aspek pengurusan pengajaran and pembelajaran di fakulti.

- Mendapat pengiktirafan *Engineering Accreditation Council* (EAC) daripada *Board Of Engineer (BEM) Malaysia.* untuk program Sarjana Muda (Kepujian) Kejuruteraan Mekanikal.
- Mendapat pengiktirafan antarabangsa *Institute of Mechanical Engineers United Kingdom* (*ImechE UK*) untuk program Sarjana Muda (Kepujian) Kejuruteraan Mekanikal.

Kecemerlangan pengajaran dan pembelajaran di Fakulti Kejuruteraan Mekanikal telah terbukti dengan penerimaan anugerah-anugerah di peringkat kebangsaan dan antarabangsa. Fakulti juga mempunyai staf-staf yang diiktiraf sebagai ahli panel badan profesional. Oleh itu, Fakulti Kejuruteraan Mekanikal akan sentiasa berusaha dengan gigih untuk melahirkan graduan dengan asas Kejuruteraan Mekanikal yang mantap, berkemahiran analitikal, berkepimpinan, berdaya saing, kreatif, inovatif dan beretika.

1.4 CABARAN

Perkembangan persekitaran dalaman dan luaran secara tidak langsung memberikan cabaran dan persaingan kepada sistem pengurusan FKM UiTM. Seperti yang dijelaskan di atas, satu cabaran utama dalaman FKM UiTM yang dikenal pasti ialah keupayaan mengimbangi antara peningkatan kemasukan pelajar dengan hasrat menjamin kualiti perkhidmatan pendidikan tinggi berterusan di samping berdepan dengan kekangan peruntukan kewangan yang terhad. Secara khusus, antara cabaran yang dihadapi FKM UiTM ialah dari aspek pengambilan pelajar, kemudahan pelajar, perolehan kakitangan yang berkaliber, penyediaan ruang pengajaran dan pembelajaran serta penginapan yang cukup dan kondusif, integrasi sistem pengkomputeran dan komunikasi antara kampus, selain memastikan program akademik yang berdaya saing dan relevan untuk bumiputera meningkatkan status ekonomi mereka.

1.5 MENANGANI ISU KECEKAPAN OPERASI

Isu kecekapan operasi dijangka merupakan satu cabaran dalaman kerana penglibatan bilangan tenaga kerja dan pelajar yang ramai. Contohnya proses pengambilan pelajar menjadi kritikal dalam RMK-9 UiTM ini kerana ia merupakan proses penentuan pencapaian enrolmen 200,000 orang pelajar keseluruhannya. Jika proses pengambilan ini tidak cekap, nescaya bilangan pelajar yang mengikuti bidang – bidang yang telah disasarkan tidak akan mencapai tahap yang dihasratkan. Begitu juga dengan proses pembelajaran dan pengajaran. Jika ia tidak berjalan dengan lancar, graduan yang dilahirkan tentunya tidak akan dapat memenuhi kehendak pasaran kerja. Oleh itu, RMKe-9 UiTM akan menyediakan sebahagian peruntukan untuk melatih meningkatkan kompetensi kakitangan akademik dan juga bukan akademik bagi menjamin kecekapan pelbagai operasi yang kritikal bagi proses teras universiti [1].

1.6 MENANGANI PERSAINGAN DI PERINGKAT GLOBAL

Dalam dunia tanpa sempadan, graduan FKM UiTM perlu bersaing dengan graduan dari dalam dan luar negara. Disebabkan peningkatan ekonomi negara yang begitu pesat, ramai penduduk Malaysia mampu menghantar anak-anak mereka menuntut di universiti swasta dalam negara dan universiti di luar negara. Ini meningkatkan persaingan kepada graduan FKM UiTM di pasaran guna tenaga. Majikan akan mengambil graduan yang terbaik dan meletakkan tanggungjawab sosial, sentimen bangsa dan agama di tempat kedua [2]. Oleh itu, UiTM perlu mengeluarkan graduan yang berdaya saing melalui sistem meritokrasi dalam semua aktiviti. Di samping itu, pelajar-pelajar FKM UiTM perlu dilengkapkan bukan sahaja dengan *hard skills* iaitu kemahiran dalam bidang pengkhususan pengajian tetapi juga dengan *soft skills* seperti kemahiran berkomunikasi dengan pelanggan dan rakan sejawat. Justeru itu, kurikulum program perlu disemak secara berterusan dengan mengambil kira kehendak industri dan jaminan kualiti di peringkat global.

2.0 TUMPUAN PENILAIAN PERTAMA: KEASLIAN IDEA DAN KREATIVITI

2.1 PENGIKTIRAFAN ANTARABANGSA OLEH INSTITUTION OF MECHANICAL ENGINEERS UNITED KINGDOM (*ImechE UK*).

Jaminan kualiti modal insan pelajar IPTA di peringkat global merupakan sesuatu yang baru di Malaysia. Sebelum pengiktirafan antarabangsa secara formal diperolehi, universiti mestilah mengguna pelbagai kaedah untuk memastikan kualiti program institusi menepati kehendak petanda aras antarabangsa. Dengan pendemokrasian pendidikan dan globalisasi pesat, satu pendekatan seragam dan sistematik jaminan kualiti IPTA perlu dibangunkan. Justeru, pengalaman Fakulti Kejuruteraan Mekanikal, Universiti Teknologi MARA untuk mendapat pengiktiktirafan antarabangsa akan dikongsi bersama di dalam laporan ini dan sudah pasti ini akan meningkatkan keyakinan pihak awam kepada kelestarian kualiti pendidikan tinggi.

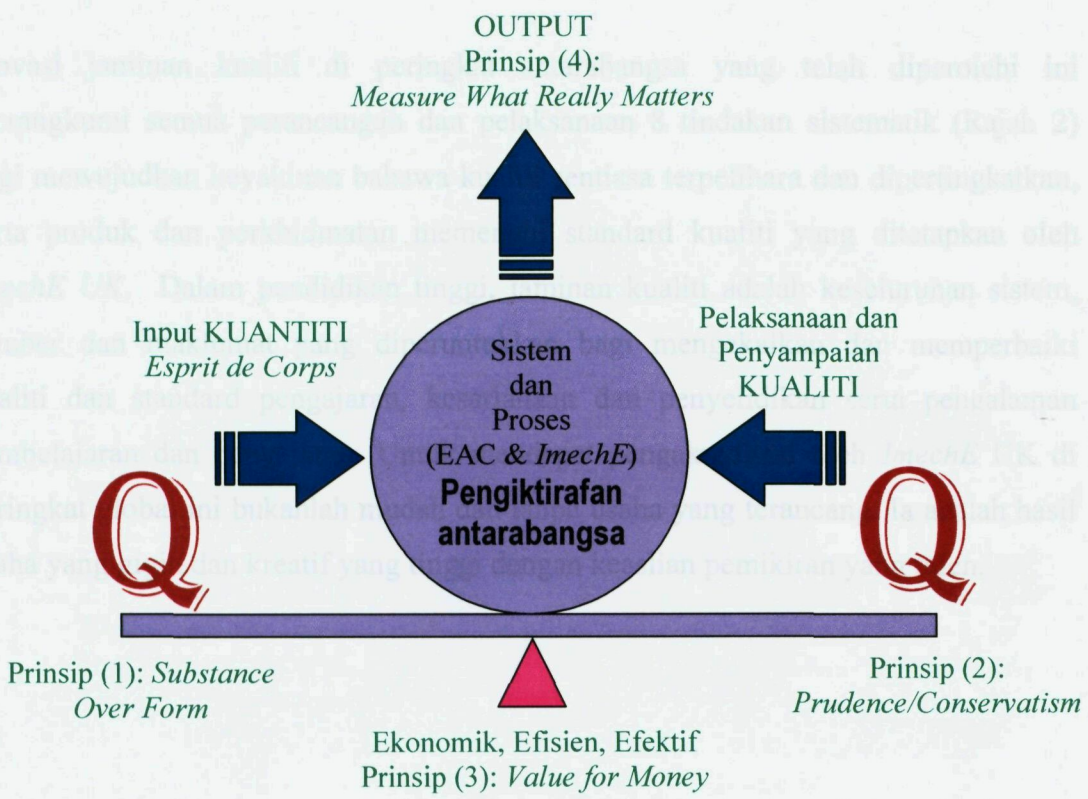
Universiti secara tradisinya telah pun menggunakan beberapa mekanisme menjamin kualiti program yang ditawarkan. Penggunaan pemeriksa luar, pertukaran ahli akademik antara institusi, penglibatan badan profesional dalam mengakreditasi sesuatu ijazah, penilaian keserakanan di peringkat kebangsaan dan antarabangsa bagi pelantikan staf dan kenaikan pangkat serta pengagihan geran penyelidikan melalui penilaian yang kompetitif telah memberi kesan yang ketara dalam pertukaran maklumat dan pengekalan piawai akademik yang tinggi. Bagaimanapun, mekanisme berkesan dalam suatu sistem elit tidak lagi memadai dalam pendidikan massa. Pendemokrasian pendidikan tinggi telah menyaksikan perkembangan pesat jumlah pelajar dan bilangan institusi pengajian tinggi. Peningkatan pengantarabangsaan pasaran buruh, mobiliti ahli akademik, penyelidik, pelajar dan program pendidikan yang berdaya saing di peringkat antarabangsa mewujudkan keperluan bagi menilai persetaraan kelayakan, standard dan kredit [3].

FKM UiTM perlu mengorak langkah menuju ke arah pemantapan dan pemerkasaan pembangunan insan secara bersepadu dan menyeluruh dengan mengambil kira kemakmuran negara dan kehendak pasaran kerja. Pembangunan modal insan merupakan satu perkara yang telah digariskan sebagai satu daripada agenda utama

negara dalam Rancangan Malaysia ke-9 (RMK9) seperti yang telah dinyatakan oleh YAB Perdana Menteri. Ini secara tidak langsung berkait rapat dengan isu kualiti produk IPT hingga dikatakan mengakibatkan pertambahan bilangan graduan yang tidak mempunyai pekerjaan. Antara kelemahan graduan yang diperkatakan termasuklah tidak berketerampilan dan tidak memiliki kemahiran khususnya kemahiran insaniah seperti mana yang dituntut oleh majikan di samping pasaran kerja yang kompetitif [2].

Cabaran persekitaran dalaman dan luaran secara tidak langsung memberikan persaingan kepada sistem pengurusan FKM UiTM. Selain daripada itu, hasrat kerajaan untuk membangunkan modal insan, UiTM mensasarkan enrolmen pelajar sepenuh masa seramai 200,000 orang pelajar pada tahun 2015. Satu cabaran utama dalam Fakulti Kejuruteraan Mekanikal yang dikenalpasti ialah keupayaan mengimbangi peningkatan kemasukan pelajar yang ramai dengan hasrat menjamin kualiti perkhidmatan pendidikan tinggi berterusan disamping berdepan dengan peruntukan kewangan yang terhad. Secara khususnya antara cabaran yang dihadapi oleh Fakulti Kejuruteraan Mekanikal adalah dari segi pengambilan pelajar, perolehan kakitangan yang berkaliber, penyediaan ruang pengajaran dan pembelajaran, selain memastikan program akademik yang berdaya saing dan releven untuk Bumiputera meningkatkan status ekonomi mereka. Model imbangan Qualiti-Quantiti berasaskan 5E (Esprit de Corps, Etika, Ekonomik, Efisien dan Efektif) , Model Q-Q 5E UiTM seperti Rajah 1, telah digunapakai oleh pengurusan FKM UiTM untuk mencapai hasrat jumlah enrolmen pelajar ini.

Selaras dengan era globalisasi, jaminan kualiti modal insan pelajar dilihat amat kritikal untuk membolehkan Fakulti Kejuruteraan Mekanikal (FKM), UiTM melonjak ke peringkat global dan bersaingan dalam arena antarabangsa. Matlamat UiTM untuk menghasilkan graduan Bumiputera diperingkat global hanya akan dicapai sekiranya mutu pendidikan di UiTM diiktiraf oleh masyarakat antarabangsa. Dengan pengiktirafan global ini modal insan pelajar UiTM akan mempunyai jaminan kualiti diperingkat antarabangsa dan memberikan kesan positif kepada industri dalam dan luar negara terhadap kualiti pelajar-pelajar UiTM.



RAJAH 1 : Model Imbangan Q-Q 5E UiTM [1]

Oleh itu pihak pengurusan FKM UiTM telah pun mendapat pengiktirafan *Insitution of Mechanical Engineers (IMechE)* United Kingdom untuk program Sarjana Muda (Kepujian) Kejuruteraan Mekanikal. Pengiktirafan ini adalah idea dan inovasi yang telah diperolehi pada tahun 2006. Pengiktirafan antarabangsa ini juga akan mempastikan kuantiti jumlah graduan yang besar FKM UiTM mempunyai jaminan kualiti di peringkat global.

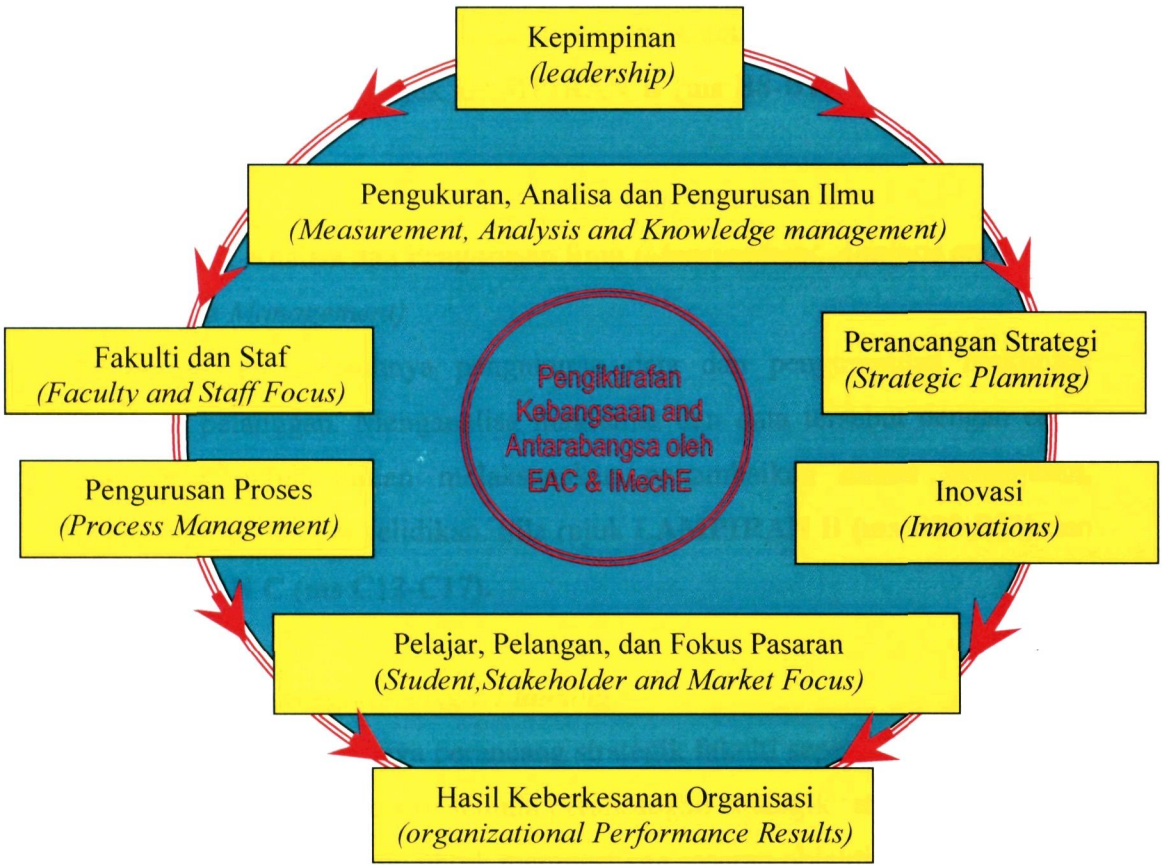
Pengiktirafan ini dapat membantu peningkatan mutu pendidikan dengan memantapkan sistem pengajaran dan pembelajaran sejajar dengan kaedah pelaksanaan revolusi pendidikan seperti mana saranan YAB Perdana Menteri. Di samping itu pengiktirafan jaminan kualiti diperingkat nasional daripada *Engineering Acreaditation Council* (EAC) Malaysia juga telah diperolehi. Dengan pengiktirafan *ImechE UK* dan EAC Malaysia ini, FKM UiTM sudah pasti berupaya untuk

melaksanakan tanggungjawab sebagai penjana sumber manusia atau modal insan yang bukan sahaja berpengetahuan tetapi juga memiliki semua ciri insan kamil.

Inovasi jaminan kualiti di peringkat antarabangsa yang telah diperolehi ini merangkumi semua perancangan dan pelaksanaan 8 tindakan sistematik (Rajah 2) bagi mewujudkan keyakinan bahawa kualiti sentiasa terpelihara dan dipertingkatkan, serta produk dan perkhidmatan memenuhi standard kualiti yang ditetapkan oleh *ImechE UK*. Dalam pendidikan tinggi, jaminan kualiti adalah keseluruhan sistem, sumber dan maklumat yang diperuntukkan bagi mengekalkan dan memperbaiki kualiti dan standard pengajaran, kesarjanaan dan penyelidikan serta pengalaman pembelajaran dan pengajaran. Untuk mendapat pengakreditasi oleh *ImechE* UK di peringkat global ini bukanlah mudah dan tanpa usaha yang terancang. Ia adalah hasil usaha yang gigih dan kreatif yang tinggi dengan keaslian pemikiran yang tulen.

3.0 TUMPUAN PENILAIAN KEDUA: HASIL INOVASI (OUTPUT)

3.1 KRITERIA PENILAIAN 2 : TAHAP PELAKSANAAN



Rajah 2: Pelaksanaan secara penuh dan bersepadu innovasi untuk mendapat pengiktirafan antarabangsa.

Untuk mendapat pengiktirafan *ImechE UK* ini perlaksanaan secara penuh dan bersepadu inovasi untuk mendapat jaminan kualiti pendidikan di FKM telah dilaksanakan. Lapan aspek pelaksanaan telah dilaksanakan seperti yang di tunjukkan di Rajah 2. Jadual terperinci lapan aspek pelaksanaan tersebut disertakan dalam (*Management Review Report*) **LAMPIRAN B (ms B8-B58).** Penerangan terperinci tindakan terhadap pelaksanaan inovasi (*responses addressing all the innovation*

outputs) di sertakan dalam **LAMPIRAN C**. Ringkasan terhadap perlaksanaan yang dilakukan adalah didalam aspek seperti berikut :

i. Kepimpinan *(leadership)*

Melaksanakan sepenuhnya kepimpinan berasaskan kepada visi dan misi fakulti, nilai-nilai teras (core values) fakulti, komunikasi yang berkesan, dan etika pengurusan. Sila rujuk **LAMPIRAN B (ms B8-B19)** dan **LAMPIRAN C (ms C6-C11).**

ii. Pengukuran, Analisa dan Pengurusan Ilmu *(Measurement, Analysis and Knowledge Management)*

Melaksanakan sepenuhnya pengukuran data dan pengumpulan maklumat daripada pelanggan. Menganalisa maklumat dan data tersebut dengan cepat dan tepat untuk tujuan melaksanakan penambaikan dalam pengajaran, pembelajaran dan penyelidikan. Sila rujuk **LAMPIRAN B (ms B20-B23)** dan **LAMPIRAN C (ms C12-C17).**

iii. Perancangan Strategi *(Strategic Planning)*

Melaksanakan sepenuhnya perancang strategik fakulti seperti yang ditetapkan. Fakulti telahpun menyemak semula perancangan strategik tersebut sebanyak 3 kali dalam masa 10 tahun untuk mempastikan sasaran objektif strategi tersebut tercapai. Sila rujuk **LAMPIRAN B (ms B24-B31)** dan **LAMPIRAN C (ms C18-C30).**

iv. Tumpuan kepada Fakulti dan Staf *(Faculty and Staff Focus)*

Melaksanakan sepenuhnya peluang untuk kenaikan pangkat, latihan dan imbuhan keewangan berasaskan perkhidmatan yang terbaik. Mengenal pasti staf yang perpotensi untuk terus digilap bakat mereka supaya dapat memberi khidmat yang cemerlang. Memberi motivasi kepada staf supaya terus berusaha gigih untuk memajukan fakulti. Menyediakan persekitaran fakulti seperti ruang kuliah, peralatan makmal dan kemudahan computer untuk merangsang pengajaran dan pembelajaran yang berkesan. Sila rujuk **LAMPIRAN B (ms B32-B38)** dan **LAMPIRAN C (ms C31-C40).**

v. Hasil Keberkesan Organisasi *(Organizational Performance Results)*

Melaksanakan sepenuhnya hasil keberkesan organisasi adalah yang terbaik dalam aspek pengambilan pelajar berasaskan meritrokrasi, keputusan pembelajaran pelajar yang cermerlang, kepuasan industri terhadap graduan fakulti dan perbelanjaan fakulti yang berhemah. Sila rujuk **LAMPIRAN B (ms B39-B42)** dan **LAMPIRAN C (ms C40-C49).**

vi. Pengurusan Proses *(Process Management)*

Melaksanakan sepenuhnya pengurusan proses pembelajaran supaya memenuhi spesifikasi untuk menjadi universiti bertaraf dunia, Untuk itu pengurusan kualiti ISO 9001:20000 telah dilaksanakan secara sepenuhnya oleh fakulti. Fakulti Kejuruteraan Mekanikal juga berusaha untuk memberikan yang terbaik kepada para pelajar. Tiga perkara penting yang ditekankan didalam pengurusan proses pembelajaran adalah *curriculum, instruction* dan *assessment*. Sila rujuk **LAMPIRAN B (ms B43-B47)** dan **LAMPIRAN C (ms C50-C56).**

vii. Pelajar, Pelangan, dan Fokus Pasaran (*Student,Stakeholder and Market Focus)*

Melaksanakan sepenuhnya keutamaan terhadap pelajar, pelangan, dan fokus pasaran. Ini adalah kerana para pelajar dan pelangan adalah aset utama bagi Fakulti Kejuruteraan Mekanikal. Manakala produk yang dihasilkan oleh fakulti ini difokuskan untuk memenuhi kehendak pasaran semasa. Bagi memenuhi kehendak tersebut, fakulti menganjurkan seminar " Hala Tuju" , bagi mendapatkan pendapat, kehendak dan jangkaan kedua-dua pihak diatasan. Di samping itu, ahli jawatankuasa ISO fakulti juga membuat *survey* keatas para pelajar dan pelangan serta kakitangan untuk memperbaiki sistem yang sedia ada. Sila rujuk **LAMPIRAN B (ms B48-B54)** dan **LAMPIRAN C (ms C57-C63).**

viii. Inovasi *(Innovations)*

Melaksanankan sepenuhnya perkara yang diperlukan untuk mendapatkan pengiktiran *ImechE UK* dan EAC Malaysia. Ini termasuklah membuat beberapa penambahbaikan dengan menubuhkan unit penerbitan, *Unit for Research Development and Commercialization*, pembelajaran menerusi sistem *Outcome Based Education OBE*, program mentor-mentee untuk pensyarah, penubuhan *student laison committee* penubuhan *Student chapter* dalam *ImechE UK* dan IEM Malaysia, *student internship program* dan lain-lain lagi. Sila rujuk **LAMPIRAN B (ms B55-B58)** dan **LAMPIRAN C (ms C64-C74).**

3.2 KRITERIA PENILAIAN 3 : REPLICABILITY

Jaminan kualiti yang dilaksanakan oleh FKM UiTM ini boleh dilaksanakan secara terus oleh mana-mana fakulti kejuruteraan di universiti lain di Malaysia. Jaminan kualiti diperingkat antarabangsa ini boleh diperolehi dari *ImechE UK*, *Washington Accord* atau mana-mana badan antarabangsa. FKM UiTM boleh menjadi contoh kepada Institut Pengajian Tinggi Awam yang lain dengan menggunakan strategi dan pendekatan yang sama untuk lebih mantapkan dan memajukan objektif dan peranannya dalam industri pendidikan.

Pelaksanaan jaminan kualiti adalah tanggungjawab universiti dan merupakan bahagian penting proses jaminan kualiti kerana ia menjana laporan analisis dan pangkalan data yang boleh digunakan dalam penilaian hasil lulusan universiti. Jaminan kualiti oleh pihak antarabangsa menggunakan kriteria dan standard yang dipersetujui bersama oleh komuniti akademik, profesion dan pihak berkepentingan untuk menilai kepatuhan kepada standard yang ditetapkan untuk pendidikan tinggi di seluruh dunia. Penilaian kualiti anatarabangsa ini memperaku dan mengesah maklumat terhasil daripada proses penilaian kualiti dalaman seperti EAC Malaysia. Ia merupakan aktiviti penilaian keserakanan bertujuan menambah baik kualiti program yang ditawarkan oleh universiti di Malaysia. Oleh itu, kaedah jaminan kualiti yang dilaksanakan oleh FKM UiTM ini boleh dilaksanakan secara terus di mana-mana fakulti kejuruteraan di universiti lain di Malaysia dan ianya adalah *replicability* dengan mudah.

4.0 TUMPUAN PENILAIAN KETIGA : IMPAK (OUTCOME)

Terdapat beberapa impak terhadap kecekapan dan signifikan pengiktirafan antarabangsa innovasi tersebut seperti yang disertakan dalam *Balanced Scorecard* **LAMPIRAN D.** Impak kepada perkhidmatan awam melalui inovasi pengiktirafan antarabangsa tersebut boleh diringkaskan seperti berikut :

4.1 KRITERIA PENILAIAN 4 : EFISIEN

i. Penjimatan masa

Peratusan pelajar yang bergraduat dalam tempoh yang ditetapkan selama 4 tahun adalah tinggi seterusnya para graduan dapat meneruskan ke alam perkerjaan dengan cepat. Ini kerana peratus kegagalan pelajar yang semakin menurun dan pelajar akan dapat bergraduat dalam masa minima seperti yang ditunjukkan dalam Rajah 5.1.2 di **Lampiran C (ms 42)**. Pensyarah dapat memberi syarahan dengan lebih berkesan dan menjimatkan masa melalui kemudahan pembelajaran dan pengajaran seperti alat bantu mengajar seperti computer, *LCD* dan kemudahan dewan. Mempercepat proses pembangunan negara untuk maju dengan menghasilkan lebih ramai graduan yang berkebolehan dalam berbagai bidang terutamanya dalam pasaran antarabangsa.

ii. Penjimatan kos

Dengan penjimatan masa tersebut, kos penginapan, pengajian dapat dijimatkan untuk setiap pelajar dan seterusnya kos operasi fakulti kejuruteraan mekanikal juga dapat dijimatkan. Tuntutan kepada jaminan kualiti modal insan bertaraf global juga menuntut ketelusan perbelanjaan FKM dalam menjalankan aktiviti pembelajaran dan aktiviti sosial lain yang sama pentingnya dan ini juga secara tidak langsung telah dapat menjimatkan kos operasi FKM UiTM. Oleh itu secara umumnya, kos pengurusan operasi dalam perkhidmatan awan terutamanya dalam bidang pendidikan dapat dijimatkan melalui operasi yang terbaik.

iii. **Peningkatan Produktiviti.**

Melalui pengiktirafan antarabangsa ini, keyakinan pihak awam dapat ditingkatkan dengan pelaksanaan semakan semula akademik berlandaskan pengawasan ketat, telus dan kriteria yang standard. Prosedur yang digunakan memudahkan maklumat yang dilaporkan adalah secara objektif dan telus. Oleh itu, pengiktirafan jaminan kualiti modal insan di peringkat antarabangsa ini akan mempastikan imej perkhidmatan awam dapat ditingkatan dengan menghasilkan pelajar yang berkualiti. Produktiviti juga sudah pasti dapat dipertingkatkan kerana pelajar ini juga merupakan sebahagian bakal tenaga kerja untuk membangunkan dan menerajui kepimpinan dalam perkhidmatan awam pada masa akan datang.

iv. **Mudah digunakan**

Pelaksanaan pelan tindakan *ImechE UK* dapat memudahkan sistem pembelajaran dan pengajaran mengikut kaedah yang lebih mudah dan tertib berdasarkan kepada prosedur yang telah ditetapkan oleh pihak penilai. Prosedur yang telah ditetapkan didokumentasikan untuk tujuan rujukan dan kegunaan samada untuk tenaga akademik, pentabdiran mahupun pelajar sendiri. Semua borang-borang/dokumen yang berkaitan telah dipiawaikan dan pembaikan dari semasa ke semasa boleh dilakukan melalui penilaian semula dari masa ke semasa.

4.2 KRITERIA PENILAIAN 5 : SIGNIFIKAN

Inovasi yang telah dibuat dengan mendapat pengiktirafan *ImechE UK* telah memberi signifikan dan impak yang besar kepada keberkesan dan kecekapan terhadap jaminan kualiti pendidikan di FKM, UiTM. Sebahagian daripada signifikan dan impak tersebut di gambarkan di dalam **LAMPIRAN E.** Antara impak yang diperolehi setelah pelaksanaan pelan tindakan *ImechE UK* adalah seperti berikut :

i. Pembangunan *softskill* pelajar yang lebih tersusun dan berkesan

a. Penubuhan *Student Laison Committe*

Student Laison Committe ini terdiri daripada 3 wakil pengurusan fakulti dan AJK-AJK persatuan pelajar FKM UiTM. Mesyuarat

Student Laison Committe diadakan pada setiap bulan. Dengan tertubuhannya *Student Laison Committe* komunikasi yang lebih berkesan diantara pihak pengurusan fakulti dan pelajar dapat diadakan.

b. Aktiviti pelajar

Program-program aktiviti pelajar seperti lawatan-lawatan ke industri, program seminar, menyertai pertanding bahas, *car racing* di litar lumba pasir Gudang Johor dan lain-lain aktiviti adalah amat signifikan kepada pelajar, dan diperlukan untuk mendapat pengiktirafan oleh *ImechE UK.* Sila rujuk **Lampiran E (ms E23-E33)**

c. Program pembangunan jatidiri pelajar

Program pembangunan jatidiri juga adalah impak yang terhasil daripada pelaksanaan hendak *ImechE UK.* Program-program tersebut adalah seperti kursus bina negara, kursus kewarganegaran, kursus keusahawan, kursus *teambuilding* dan lain-lain.

ii. Hubungan industri-universiti yang lebih berkesan dengan membuat perjanjian (*Memorandum of Understanding/Memorandum of Agreement*) dengan industri-industri berikut :

a. Golden Hope Academy

Pengambilan pelajar FKM sebanyak 15 orang setiap tahun dengan tajaan biasiswa sebanyak RM10000 setahun dengan jaminan pekerjaan dengan pihak Golden Hope.

b. Daimler Chrysler AG Malaysia (DCM) Sdn Bhd – Germany

Mengambil pelajar FKM untuk membuat internship program di Pekan Pahang dan di Stuggurtt German. Untuk peringkat permulaan pada bulan Februari 2007 lima orang telah membuat internship program di Kilang pemasangan kereta Mercedes Benz di DCM Pekan Pahang dan tiga orang pelajar telah pergi ke kilang pemasangan kereta Mercedes Benz di Sturggat German. **Sila rujuk Lampiran E (ms E1-E2)**

c. Thyssen Krupp Germany

Pengambilan pelajar sebanyak lima orang mengikuti program internship selama 6 bulan pada Julai 2007 di Hamburg German dengan pembiayai dibayar sepenuhnya oleh Tyssen Krupp German.

d. Nurivest Mechanization Sdn Bhd (USA)
   Usahasama penyelidikan dan perundingan dalam bidang mekatronik
e. Shimadzu Sdn Bhd (Jepun)
   Usahasama penyelidikan dan perundingan dalam bidang *nanotechnology.*

Sila rujuk Lampiran E (ms E3-E6)

iii. Hubung Fakulti-professor luar yang lebih bermanafaat

Perlantikan professor luar adalah antara kriteria untuk mendapat pengiktirafan *ImechE UK* dan merupakan suatu yang signifikan dalam strategi untuk meningkatkan pertukaran ilmu dan kepakaran dalam bidang masing-masing supaya keseimbangan dan taraf pendidikan pada setiap program dapat dikekalkan setaraf dengan universiti antarabangsa. Setip professor luar ini akan berada selama sebulan di fakulti untuk membantu pembelajaran dan penyelidikan di fakulti. Seterusnya pendapat dan pembaikan secara berterusan dapat dikongsi bersama demi kebaikan organisasi pendidikan. Senarai nama perlantikan professor luar FKM UiTM adalah seperti berikut ;

- Professor Dr Ing. Bodo Heiman - Bidang Mekatronik dari University Hannover Jerman
- EurIng Joseph Tatler - Bidang Aeronautical Engineering dari United Kingdom.
- Professor Dr Faqir Gul - Bidang Strength of Material dari The Institute of Technology, Brunei.
- Prof. Dr.-Ing. Bernd Hamacher - Bidang Manufacturing dari University of Applied Sciences, Osnabrück, Jerman.
- Professor Dr. Hoffman - Bidang Manufacturing dari Jerman
- Dr Eng. Fukukazu Nakasato - Bidang Material Science dari Sumitomo Metals (Kokura), Ltd. 4-5-33 Kitahama, Chuo-ku Osaka, Japan

iv. Proses pembelajaran berteraskan *Outcome based education*

Untuk mendapat pengiktirafan oleh *ImechE UK* proses pembelajaran berteraskan *Outcome based education* mestilah dilaksanakan. Proses ini

digunakan untuk menfokuskan hasil pembelajaran dengan lebih jelas dan berobjektif berdasarkan kepada kehendak program itu sendiri melalui pengubalan kurikulum dan rancangan kuliah. Kaedah ini juga memberikan kesan hasil pembelajaran yang telah ditetapkan dan boleh diukur secara jelas. Dengan cara ini pihak fakulti mekanikal dapat menilai dan mengukur hasil pembelajaran secara efektif dari masa ke semasa terhadap kualiti pelajar dalam program tersebut.

v. Pengurusan sumber manusia yang lebik efektif

Hasil pelaksanaan pelan tindakan *ImechE UK* juga, pemantapan pengurusan dapat dihasilkan melalui perancangan yang teratur dan terancang. Seterusnya struktur organisasi dapat dibina secara realistik berdasarkan kepada kemampuan dan objektif yang telah ditetapkan. Seterusnya pengawalan yang berterusan terhadap aktiviti pembelajaran dan pengajaran dibuat dari masa ke semasa untuk meningkatkan kualiti penyampaian. Impak yang baik daripada faktor kepimpinan dan sumber manusia juga telah boleh dinilai berdasarkan kepada penilaian pelajar, kakitangan pentadbiran termasuk juga tenaga akademik boleh dilakukan untuk tujuan pembaikan berterusan. Pelaksaan sistem *mentor-mentee* dikalangan staf akademik juga memberi impak yang besar terhadap teknik pengajaran.

vi. Pembangunan akademik yang lebih menyeluruh

Sasaran utama pembangunan akademik adalah melalui pembelajaran sepanjang hayat melalui lanjutan pengajian sehinga ke peringkat Sarjana dan Doktor falsafah ditawarkan kepada tenaga akademik. Selain daripada itu kursus jangka pendek diperkenalkan seperti latihan dalam industri, cuti sabatikal dan penyertaan dalam organisasi kecil dalam universiti itu sendiri seperti dalam bahagian penyelengaraan untuk meraih pengalaman dalam bidang berkenaan dan melayakkan untuk mendapatkan status *Professional Engineer* . Semuanya aktiviti pembangunan akademik ini adalah merupakan kriteria yang diperlu dilaksanakan untuk mendapat pengiktirafan *ImechE UK.*

vii. Pembangunan fizikal, fasiliti dan teknologi maklumat yang lebih ekonomik

Pembaikan berterusan dalam kelengkapan pembelajaran dan pengajaran seperti bangunan tambahan dan kemudahan ruang bilik kuliah yang berkualiti dan selesa. Untuk melancarkan proses ini penggunaan rangkaian internet dapat menyuburkan aktiviti pembelajaran dan pengajaran dalam bentuk e-learning pada tahap yang maksimum.

viii. Pembangunan penyelidikan dan perundingan yang cemerlang

Pembangunan penyelidikan sebagai strategi pemantapan ilmu untuk tenaga akademik dan sumbangan kepada masyarakat setempat dan antarabangsa. Selain daripada itu penghasilan idea yang kreatif dan inovatif dapat disalurkan dalam penyelidikan dan pengkormersialan produk dapat dilakukan. Sila rujuk **LAMPIRAN D (ms D21-D22).**

5.0 TUMPUAN PENILAIAN KEEMPAT : PENGURUSAN

5.1 KRITERIA PENILAIAN 6 : KOMITMEN

Pengurusan atasan FKM UiTM telah memberi komitmen yang tinggi dan sokongan yang padu untuk mendapatkan pengiktirafan antarabangsa oleh *ImechE UK* ini seperti berikut :

(i) Kewangan

Bagi mendapatkan pengiktirafan antarabangsa dari *IMechE UK* ini, pihak pengurusan atasan Fakulti Kejuruteraan Mekanikal telah pun memperuntukan bantuan kewangan. Bantuan kewangan ini digunakan bagi menjalankan aktiviti seperti mengadakan mesyuarat-mesyuarat pengurusan, bengkel-bengkel kesedaran jaminan kualiti, menyediakan peruntukan pengurusan dan menyediakan fasiliti pembelajaran bertaraf dunia. Pada tahun 2006, Fakulti Kejuruteraan Mekanikal telah mengunakan sebanyak RM3.2 juta bagi menguruskan fakulti keseluruhannya dimana sebahagian daripadanya digunakan untuk proses mendapatkan pengiktirafan antarabangsa *IMechE UK* ini.

(ii) Pengurusan Sumber Manusia

Pengurusan sumber manusia juga memainkan peranan penting bagi menjayakan rancangan untuk mendapatkan pengiktirafan antarabangsa *IMechE UK* ini. Bagi memenuhi standard yang ditetapkan oleh *IMechE UK* mahupun untuk menjadikan UiTM sebagai universiti bertaraf antarabangsa, pihak pengurusan atasan Fakulti Kejuruteraan Mekanikal telah memberi komitmen yang tinggi untuk membangunkan sumber manusia. Antara langkah yang telah diambil adalah seperti menghantar kakitangan akademik untuk melanjutkan pelajaran sehingga ke peringkat *PhD* di dalam dan luar negara seperti Jepun, Netherland, United Kingdom, USA dan juga Singapura. Selain daripada itu, pihak fakulti juga turut

menghantar staf-staf sokongan ke kursus-kursus yang berkaitan dengan tugas seperti kursus pengendalian makmal, kursus pengendalian mesin dan juga *ICT* bagi meningkatkan kebolehan mereka dalam bidang yang berkaitan.

(iii) Insentif

Pihak pengurusan atasan Fakulti Kejuruteraan Mekanikal juga telah memperkenalkan beberapa insentif bagi menjayakan inovasi ini. Selain daripada menjadi ahli BEM (*Board of Engineers Malaysia*), pensyarah-pensyarah juga digalakkan untuk menjadi ahli professional kejuruteraan lain seperti ahli profesional kejuruteraan *IEM* dan *Chartered Engineers* IMEechE, UK. Keahlian sebahagian staf akademik dalam persatuan-persatuan professiona ini juga merupakan salah satu syarat untuk mendapatkan pengiktirafan antarabangsa *IMechE UK* tersebut. Bagi menggalakkan para pensyarah menyertai persatuan tersebut, pihak pengurusan atasan Fakulti Kejuruteraan Mekanikal telah mengambil inisiatif agar yuran keahlian persatuan tersebut ditanggung oleh pihak fakulti sebagai salah satu insentif kepada para pensyarah.

Bagi melicinkan proses untuk mendapatkan pengiktirafan antarabangsa ini, pihak pengurusan atasan Fakulti Kejuruteraan Mekanikal juga telah menubuhkan satu ahli jawatankuasa pemandu iaitu Ahli Jawatankuasa Akreditasi *ImechE UK*. Bagi meringankan beban tugas yang dipikul oleh ahli jawatankuasa tersebut, pihak pengurusan atasan fakulti telah memberikan dua jam kredit untuk ditambah dalam Amanah Tugasan (ATA). Selain daripada itu, ahli jawatankuasa tersebut juga telah membuat lawatan ke National University of Singapore (NUS) sebagai insentif. National University of Singapore telah berjaya mendapatkan pengiktirafan antarabangsa *ImechE UK* beberapa tahun lalu dan merupakan mentor bagi Fakulti Kejuruteraan Mekanikal, UiTM. Lawatan ini dibuat sebagai salah satu insiatif bagi membincangkan prosedur , bertukar-tukar pandangan serta pengalaman tentang proses untuk medapatkan pengiktirafan tersebut.

(iv) **Penghargaan**

Sebagai memperingati usaha yang telah dilakukan oleh Ahli Jawatankuasa Akreditasi *ImechE UK* ini, pihak pengurusan atasan Fakulti Kejuruteraan Mekanikal telah memberi penghargaan dalam berbentuk sijil kepada staf yang terlibat. Sijil tersebut diberi nama sebagai Staf Khidmat Cemerlang dan telah dimenangi oleh Puan Junaidah dan Puan Roseleena Jaafar.

Selain daripada itu, pihak fakulti juga telah membuat kain rentang bagi berterimakasih kepada semua staf mahupun pelajar yang telah memberikan kerjasama bagi menjayakan proses mendapatkan pengiktirafan antarabangsa tersebut.

(v) **Peralatan.**

Pihak pengurusan atasan Fakulti Kejuruteraan Mekanikal UiTM juga telah komited untuk menyediakan peralatan dan fasiliti bagi memenuhi standard *ImechE UK* mahupun UiTM. Sebanyak RM 2.0 juta telah diperuntukkan pada tahun 2006 bagi membeli peralatan makmal seperti *wind tunnel*, kemudahan *ICT*, dan lain-lain mesin serta peralatan penting yang ditempatkan di makmal-makmal Fakulti Kejuruteraan Mekanikal UiTM. Selain daripada itu, latihan dalam menggunapakai mesin juga turut diberi kepada staf bagi memastikan mesin tersebut dapat digunakan secara optimum. Disamping itu, pihak pengurusan fakulti juga menggunakan peruntukan ini untuk membeli barang pakai buang habis seperti logam, kayu, minyak dan lain-lain lagi yang digunakan di bengkel-bengkel serta makmal-makmal. Terdapat juga peralatan yang dibeli bagi menguruskan rekod dan dokumentasi seperti alat tulis, kertas, fail dan lain-lain lagi.

6.0 KESIMPULAN

Sebagai kesimpulannya, Pembangunan modal insan merupakan satu perkara yang telah digariskan sebagai satu daripada agenda utama negara dalam Rancangan Malaysia ke-9 (RMK9) seperti yang telah dinyatakan oleh YAB Perdana Menteri. Oleh itu FKM, UiTM telah membuat inovasi dengan mendapatkan pengiftirafan antarabangsa *ImechE UK* selain daripada *EAC* Malaysia untuk mempastikan kualiti modal insan adalah terjamin di peringkat nasional dan juga di peringkat global. Hasil usaha inovasi ini telah menunjukkan kejayaan dari segi penghasilan graduan yang berkualiti dan di terima diperingkat global seperti kejayaan pelajar-pelajar FKM UiTM membuat internship program di *DCM AG* Stuggart Jerman dan Tyssen Krupp Marine Engineering di Hamburg Jerman. Sudah pasti pengiktirafan oleh *ImechE UK* ini dapat meningkatkan kualiti operasi FKM, UiTM dan produktiviti negara.

7.0 RUJUKAN

i. PELAKSANAAN RANCANGAN MALAYSIA KE 9, UNIVERSITI TEKNOLOGI MARA, *UPENA, UNIVERSITI TEKNOLOGI MARA* ISBN 9833643426

ii. MODUL PEMBANGUNAN KEMAHIRAN INSANIAH (SOFT SKILL) UNTUK INSTITUSI PENGAJIAN TINGGI MALAYSIA. *UNIVERSITI PUTERA MALAYSIA* ISBN 9833663052

iii. KOD AMALAN JAMINAN KUALITI INSTITUSI PENGAJIAN TINGGI AWAM, MALAYSIA. *KEMENTERIAN PENGAJIAN TINGGI.*

UNIVERSITI TEKNOLOGI MARA

FAKULTI KEJURUTERAAN MEKANIKAL

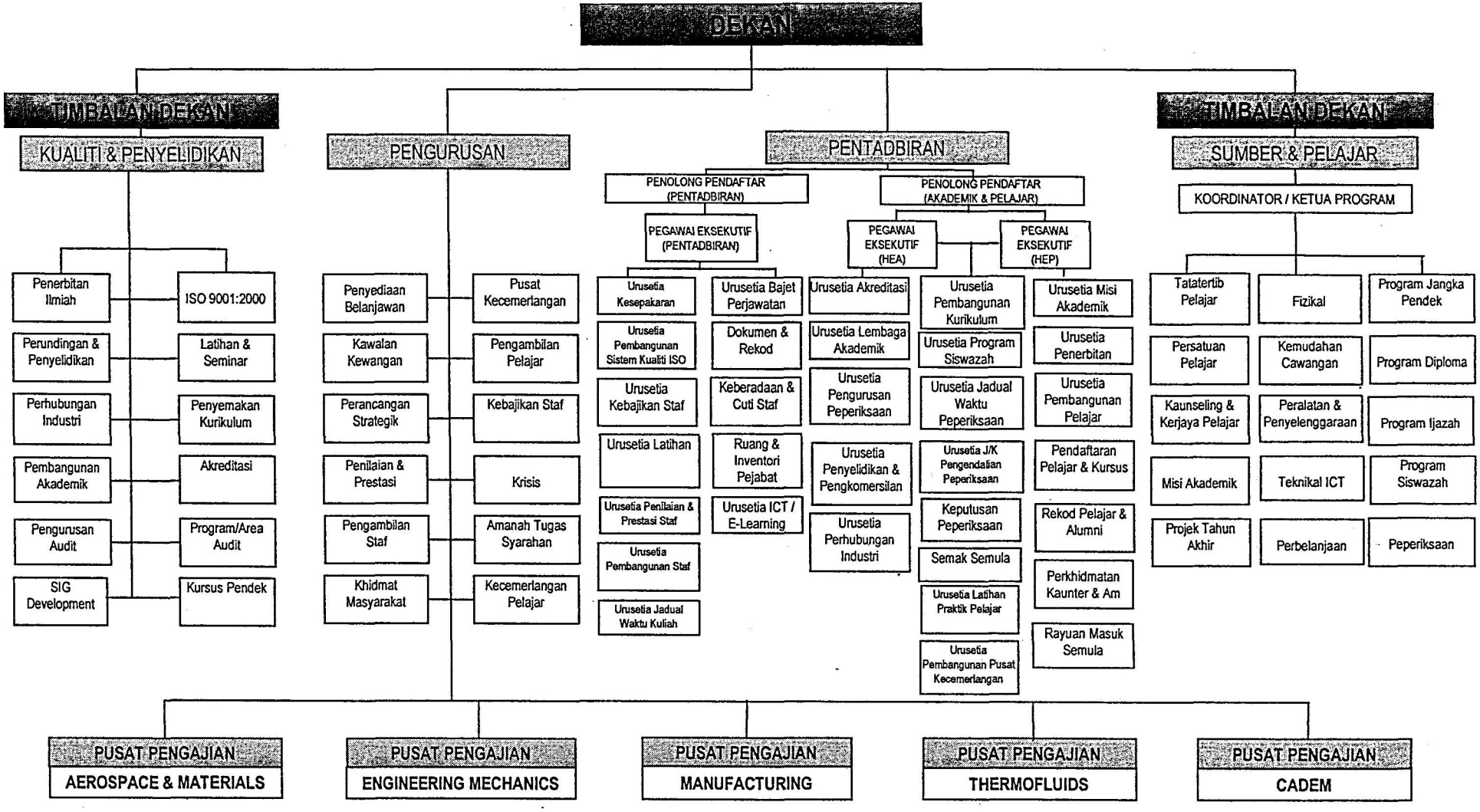
LAMPIRAN A

CARTA ORGANISASI

FAKULTI KEJURUTERAAN

MEKANIKAL

CARTA ORGANISASI TAHUN 2007
FAKULTI KEJURUTERAAN MEKANIKAL



CARTA AKADEMIK TAHUN 2007
FAKULTI KEJURUTERAAN MEKANIKAL (SEDIA ADA)

CENTRE OF STUDIES
AEROSPACE & MATERIALS

- AEROSPACE STRUCTURE & MATERIALS (PM Nor Aini Wahab)
- AERODYNAMICS & PROPULSION (En Aman Mohd Ihsan)
- AIR TRANSPORTATION & MAINTENANCE ENGINEERING (En Sahril Kusairi)
- FLIGHT MECHANICS & CONTROLS (En Rizal Effendy)

ACADEMIC PROGRAM
Diploma EM110
Degree EM220
Masters EM780
PhD EM990

SPECIAL INTEREST GROUP
Strategic Technology (Azman)
Aeronautics (Dr Wahyu)
Material Performance & Integrity (Hussein)

STAFF

LECTURER
1. W Mazlina W Mohamed
2. Prof Ir Dr Mohd. Nor (PP)
3. PM Dr. Wahyu Kuntjoro
4. PM Dr Wirachman Wisnoe
5. PM Nor Aini Wahab
6. Dr. Zahurin Halim
7. Dr. Thomas Ward
8. Ramzyzan Ramly
9. Junaidah Rahmat
10. Che Faridah Mat Taib (CB)
11. Shahril Kushairi (CB)
12. Aman Mohd Ehsan
13. Muhd Hussain Ismail (CB)
14. Nor Amalina Nordin
15. Mimi Azlina A Bakar (CB)
16. Fauziah Yusof
17. Nor Azizah Ma'som

CENTRE OF STUDIES
ENGINEERING MECHANICS

- DYNAMICS & CONTROL (PM Dr Ahmad Azlan)
- MECHANICS OF MATERIAL (En Yakub Taib)
- MECHANICAL DESIGNS (PM Ir Mohd Khalid)

ACADEMIC PROGRAM
Diploma EM110
Degree EM220
Masters EM780
PhD EM990

SPECIAL INTEREST GROUP
Noise & Vibration (Dr Azlan)
Computational Structural Analysis (Yakub)

STAFF

LECTURER
1) PM Zamri A. Rahman
2) Dato' Prof Ir Dr M Dahalan -PK-
3) PM Dr. Ahmad Azlan M Isa
4) PM Ir Mohd Khalid
5) PM A Kamil Hussain (CB)
6) Jamaluddin Mahmud (CB)
7) Suhaime Suparman
8) David Valliyappan (CB)
9) Yakub Taib
10) Jamilah Taib
11) Anizah Kalam (CB)
12) Shaharudin Ahmad
13) Shahrul Azam Aziz (CB)
14) Aidah Jumahat (CB)
15) Mohd Azman Yahya
16) Low Cheng Yee (CB)
17) Zuraidah Salleh
18) Mohd Suhairil Hj Meon
19) Mohd Azahari Johan
20) Mohd Azahan Anuar
21) Zulkifli Mohamed

CENTRE OF STUDIES
MANUFACTURING

- MANUFACTURING SYSTEMS (Pn Nor Hayati Saad)
- MANUFACTURING OPERATION MANAGEMENT (Prof Dr Razmi Chik)
- PRODUCT DESIGN (En Tajudin Md Jahi)
- MANUFACTURING PROCESSES (Pn Rosleena)
- QUALITY ENGINEERING (Pn Bulan Abdullah)

ACADEMIC PROGRAM
Diploma EM110
Degree EM220
Masters EM780
PhD EM990

SPECIAL INTEREST GROUP
Design & Manufacturing (Dr Darius)
Industrial Management (Prof Razmi)
Robotics & Automation (Dr Ahmed Jaafar)

STAFF

LECTURER
1) PM Sunhaji
2) Prof Dr Razmi Chik -PK-
3) PM Ir Dr Abdul Rahman Omar
4) PM Ir. Dr Ahmed Jaffar
5) PM Mohd Yusuff
6) PM Dr Darius -PK-
7) PM Hj Md Fuad Bahari
8) PM Loo Huck Soo
9) Dr Muhamad Azmi Ayub
10) Dr Yupiter Manurung
11) Nor Hayati Saad (CB)
12) Nor Hafiez (CB)
13) Suhaimie Sapari (CB)
14) Juri Saedon (CB)
15) Sukarnur Che Abdullah
16) Kausalyah a/p Venkatason
17) Tajuddin Md Jahi
18) Roseleena Jaafar
19) Bulan Abdullah
20) Zainuddin Mohamad

STAFF

21) Wan Emri Wan A. Rahman
22) Azianti Ismail

ASST. LECTURER
1) Abdul Rahim Abd Raman
2) Radzuan A.R.
3) Abu Bakar Bahari
4) Nizan Nordin
5) Yusri Yusof
6) Hamzah A. Bakar
7) Mohd Ghazali Sikin
8) Ridhwan M. Redza

CENTRE OF STUDIES
THERMOFLUIDS

- AUTOMOTIVE (En Nik Rosli Abdullah)
- THERMODYNAMICS (En Wan Ahmad Najmi)
- ENERGY CONVERSION (PM Dr Rahim Atan)
- HYDRODYNAMICS (En Azli Ab Razak)

ACADEMIC PROGRAM
Diploma EM110
Degree EM220
Masters EM780
PhD EM990

SPECIAL INTEREST GROUP
Computational Fluid Dynamics (Azli)
Automotive (Zainal)
Indigenous Technology (David)
Energy & Environment (Dr Rahim)

STAFF

LECTURER
1) Zainal Abidin K Baharin
2) Prof Ir Dr Ow C. S. -PK-
3) PM Ir Dr Ahmad Suhaimi
4) PM Ir Mohd Shif Ismail
5) PM Ramlan Zailani (CB)
6) PM Dr Rahim Atan
7) Ir. Hamidun Md. Isa (Pemb)
8) Salmiah Kasolang (CB)
9) Wan Ahmad Najmi (CB)
10) Nik Rosli Abdullah (CB)
11) Azli Abd Razak
12) Idris Saad
13) Nur Afifah
14) Dr.P.A. Aswatha Narayana
15) Azlin Mohamed Azmi

ASST. LECTURER
1) Sulaiman Mohammad

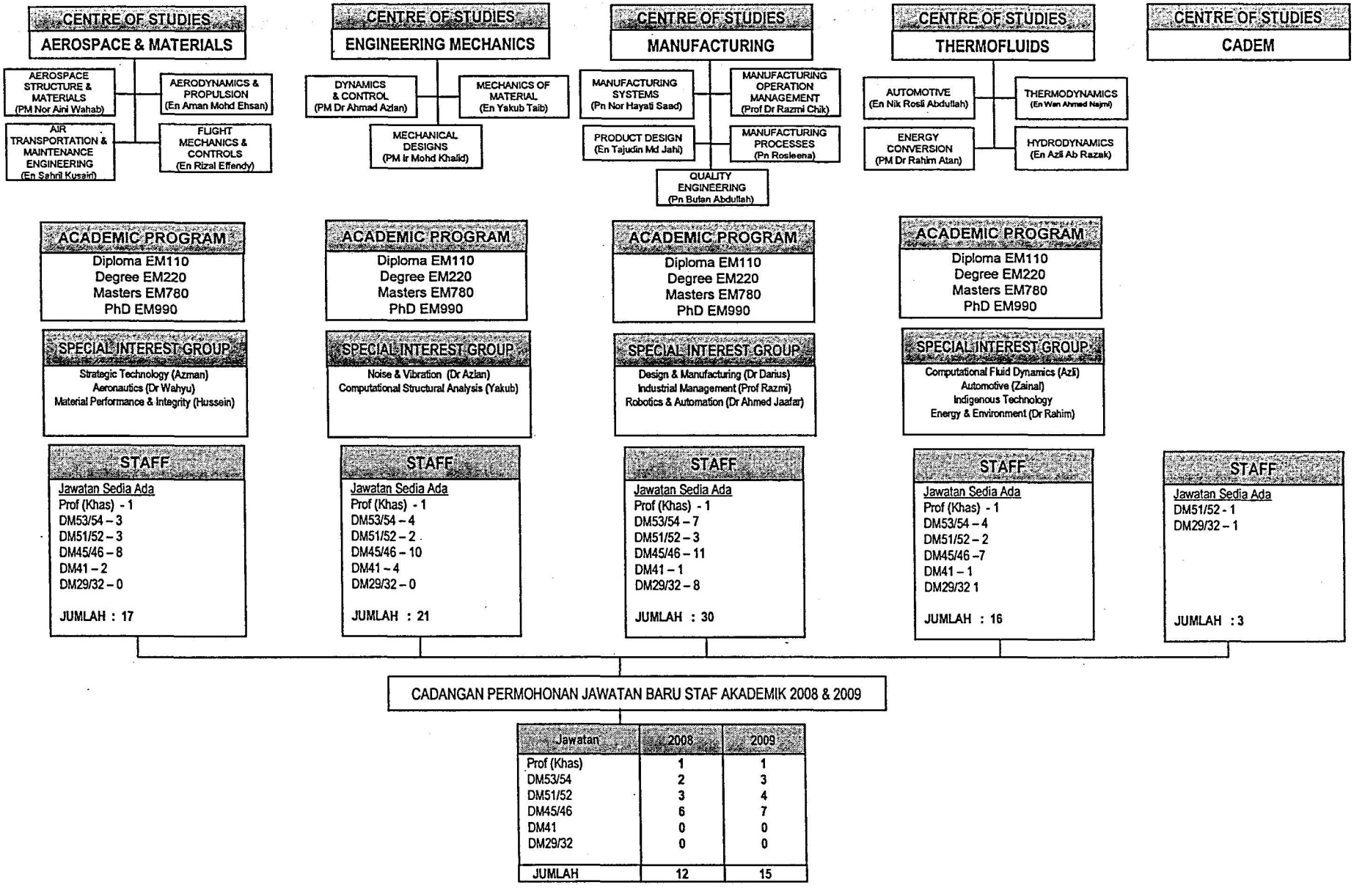
CENTRE OF STUDIES
CADEM

STAFF

LECTURER
1) Zulkiflee Ngah
2) Rizal Effendy

ASST. LECTURER
1) Shukor Abd. Jalil

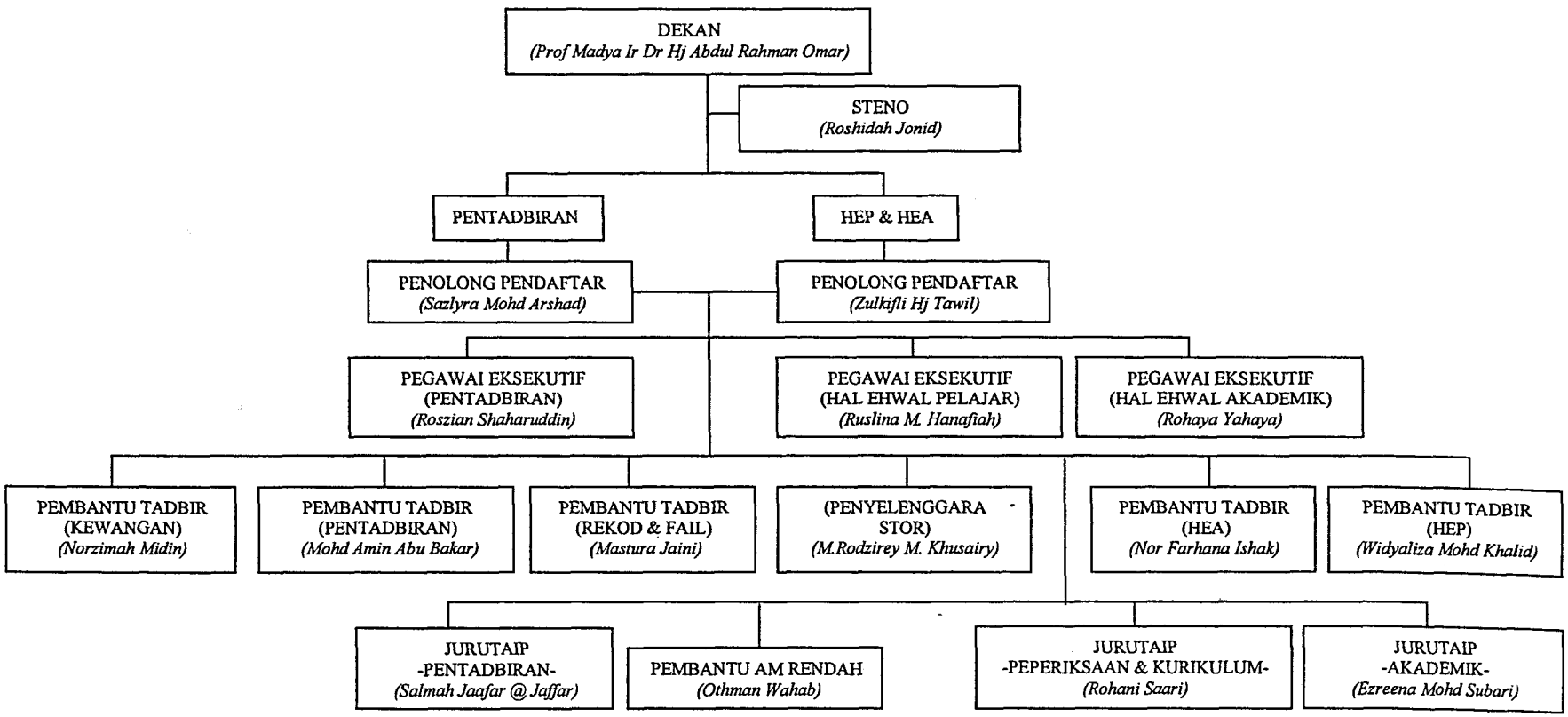
CARTA AKADEMIK TAHUN 2008 & 2009
FAKULTI KEJURUTERAAN MEKANIKAL (PENSTRUKTURAN SEMULA) - DIPOHON

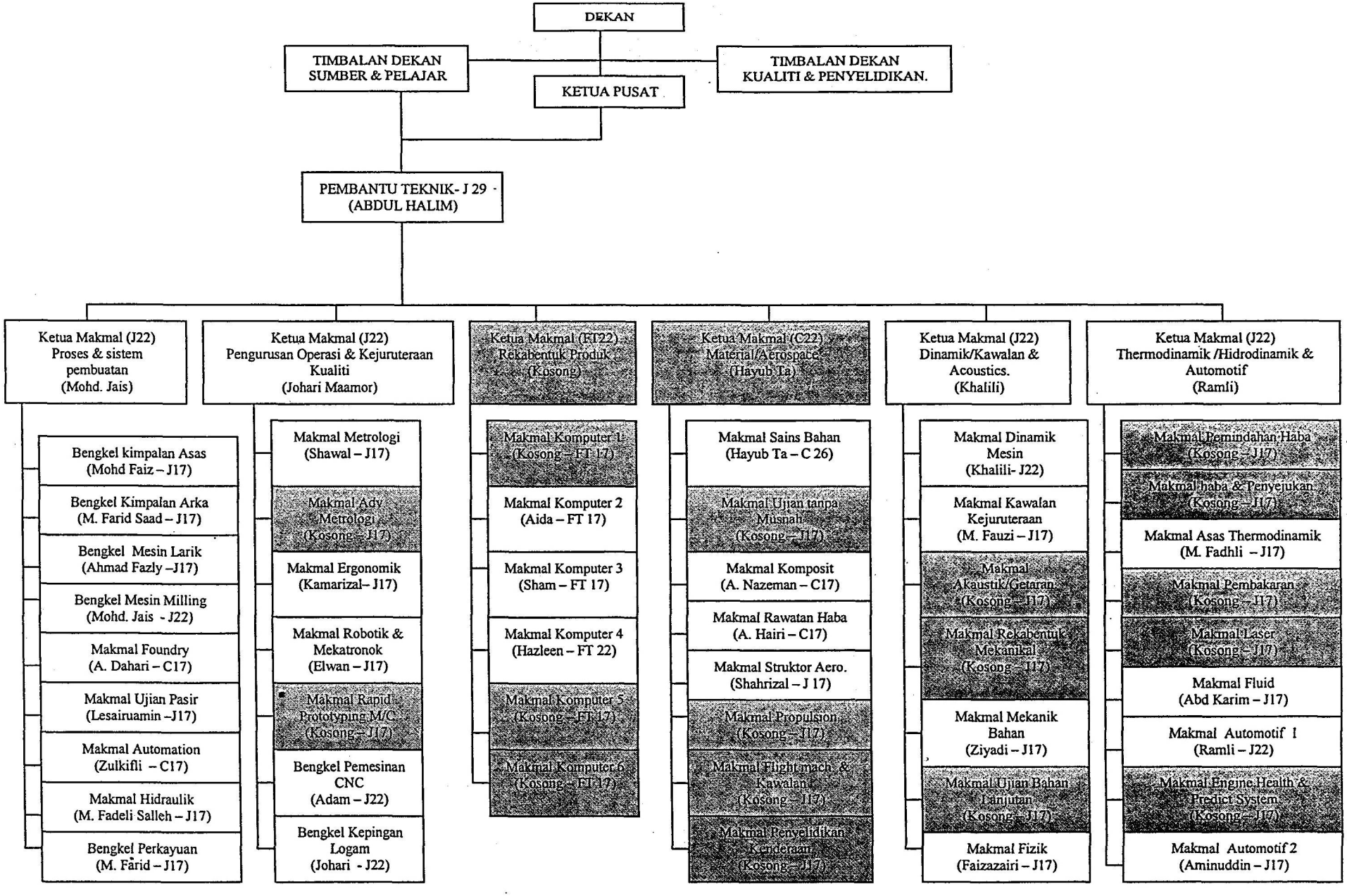


CADANGAN PERMOHONAN JAWATAN BARU STAF AKADEMIK 2008 & 2009

Jawatan	2008	2009
Prof (Khas)	1	1
DM53/54	2	3
DM51/52	3	4
DM45/46	6	7
DM41	0	0
DM29/32	0	0
JUMLAH	12	15

CARTA ORGANISASI (PENTADBIRAN)
FAKULTI KEJURUTERAAN MEKANIKAL 2007
(SEDIA ADA)




DEKAN
TIMBALAN DEKAN SUMBER & PELAJAR
KETUA PUSAT
TIMBALAN DEKAN KUALITI & PENYELIDIKAN.
PEMBANTU TEKNIK- J 29 (ABDUL HALIM)
Ketua Makmal (J22) Proses & sistem pembuatan (Mohd. Jais)
Bengkel kimpalan Asas (Mohd Faiz – J17)
Bengkel Kimpalan Arka (M. Farid Saad – J17)
Bengkel Mesin Larik (Ahmad Fazly –J17)
Bengkel Mesin Milling (Mohd. Jais - J22)
Makmal Foundry (A. Dahari – C17)
Makmal Ujian Pasir (Lesairuamin –J17)
Makmal Automation (Zulkifli – C17)
Makmal Hidraulik (M. Fadeli Salleh – J17)
Bengkel Perkayuan (M. Farid – J17)
Ketua Makmal (J22) Pengurusan Operasi & Kejuruteraan Kualiti (Johari Maamor)
Makmal Metrologi (Shawal – J17)
Makmal Adv Metrologi (Kosong – J17)
Makmal Ergonomik (Kamarizal– J17)
Makmal Robotik & Mekatronok (Elwan – J17)
Makmal Rapid Prototyping M/C (Kosong – J17)
Bengkel Pemesinan CNC (Adam – J22)
Bengkel Kepingan Logam (Johari - J22)
Ketua Makmal (FT22) Rekabentuk Produk (Kosong)
Makmal Komputer 1 (Kosong – FT 17)
Makmal Komputer 2 (Aida – FT 17)
Makmal Komputer 3 (Sham – FT 17)
Makmal Komputer 4 (Hazleen – FT 22)
Makmal Komputer 5 (Kosong – FT 17)
Makmal Komputer 6 (Kosong – FT 17)
Ketua Makmal (C22) Material/Aerospace (Hayub Ta)
Makmal Sains Bahan (Hayub Ta – C 26)
Makmal Ujian tanpa Musnah (Kosong – J17)
Makmal Komposit (A. Nazeman – C17)
Makmal Rawatan Haba (A. Hairi – C17)
Makmal Struktor Aero. (Shahrizal – J 17)
Makmal Propulsion (Kosong – J17)
Makmal Flightmech & Kawalan (Kosong – J17)
Makmal Penyelidikan Kenderaan (Kosong – J17)
Ketua Makmal (J22) Dinamik/Kawalan & Acoustics. (Khalili)
Makmal Dinamik Mesin (Khalili- J22)
Makmal Kawalan Kejuruteraan (M. Fauzi – J17)
Makmal Akaustik/Getaran (Kosong – J17)
Makmal Rekabentuk Mekanikal (Kosong – J17)
Makmal Mekanik Bahan (Ziyadi – J17)
Makmal Ujian Bahan Lanjutan (Kosong – J17)
Makmal Fizik (Faizazairi – J17)
Ketua Makmal (J22) Thermodinamik /Hidrodinamik & Automotif (Ramli)
Makmal Pemindahan Haba (Kosong – J17)
Makmal haba & Penyejukan (Kosong – J17)
Makmal Asas Thermodinamik (M. Fadhli – J17)
Makmal Pembakaran (Kosong – J17)
Makmal Laser (Kosong – J17)
Makmal Fluid (Abd Karim – J17)
Makmal Automotif 1 (Ramli – J22)
Makmal Engine Health & Predict System (Kosong – J17)
Makmal Automotif 2 (Aminuddin – J17)

UNIVERSITI TEKNOLOGI MARA

FAKULTI KEJURUTERAAN MEKANIKAL

LAMPIRAN B

ORGANIZATION PROFILE

AND

MANAGEMENT REVIEW REPORT

LAMPIRAN B

ORGANIZATION PROFILE

No	Particulars	Document / File No.	Remarks
1.	**ORGANIZATIONAL DESCRIPTION**		
a.	**Organizational Environment**		
a(1)	**Organization's main educational programs, offerings, and services.** o Diploma in Mechanical Engineering EM110 o Bachelor of Engineering (Hons) Mechanical EM220 o Master of Science in Mechanical Engineering EM870 o Doctor of Philosophy in Mechanical Engineering EM990 o Consultancy Services	Student's handbook & Directory of Research & Consultancy 2006	
	▪ Delivery mechanisms used to provide your educational programs, offerings, and services to students o Lectures o Tutorials o Laboratories o Plant Visits o Industrial Practical Training o Final year projects	Student's handbook & Directory of Research & Consultancy 2006 Pages 9-11	
a(2)	▪ Organizational culture. ▪ PURPOSE, VISION, MISSION, and VALUES	Student's handbook & Directory of Research & Consultancy 2006	

	○ Vision – A leader in the Mechanical Engineering discipline towards global excellence through world class education and research. ○ Mission – To produce graduates with strong Mechanical Engineering fundamental, analytical, and leadership skill, competitive, creative, innovative and professional ethical and will be successful in any services and capable of becoming entrepreneurs ○ Core Values – Excellence in teaching, collaborative relationships, active involvement, management by fact, continuous improvement and learning and results focus.	Pages 2-3 EAC Accreditation Application BEM (Full Time) Pages 2-3 Reference Organizational Profile (Narrative) P.1a(2) The mission of Faculty is to produce world-class learners by building a connected learning community.	
a(3)	▪ Faculty and staff profile	EAC Accreditation Application: Appendix I: Staff Profile	
	▪ Categories and types of faculty and staff ▪ Education levels ▪ Organization's workforce and job DIVERSITY, organized bargaining units, use of contract employees, and special health and safety requirements	EAC Accreditation Application: Pages 21 - 40	
a(4)	▪ Major technologies, equipment, and facilities. ○ Teaching facilities and infrastructure ▪ Laboratory ▪ Workshop ▪ Drawing & Design Office	EAC Accreditation Application: Appendix H, H1, H2, H3, & H4	

	▪ Library ▪ Computer facilities ▪ Lecture rooms ▪ Additional facilities		
a(5)	▪ Regulatory environment under organization operates ▪ Mandated federal, state, and local standards, curricula, programs, and assessments; applicable occupational health and safety regulations; accreditation requirements; administrator and teacher certification requirements; and environmental and financial regulations ▪ District boundaries and service offering restrictions, as appropriate o UiTM is subjected to securitization by the Ministry of Higher Education o The faculty is also sorting accreditation from the EAC/Washington Accord and Board of Engineers Malaysia. And IMechE, UK.	Reference EAC Accreditation Application and IMechE Accreditation Application.	
b. b(1)	**Organizational Relationships** ▪ Organizational structure and GOVERNANCE system. ▪ Reporting relationships between your GOVERNANCE board/policy making body	Faculty website: www3.uitm.edu.my/faculties/fkm UiTM Prospectus 2005/2006	

	and your SENIOR LEADERS, as appropriate. o Chancellor o Pro-Chancellor o Vice-Chancellor o Board of Directors o Senior Management o Deputy Vice-Chancellor o Deans of the Faculty o Campus Director o Heads of the Department o Academic Advisor o External Examiners o External Auditors		
b(2)	▪ KEY student SEGMENTS, STAKEHOLDER groups, and market SEGMENTS, as appropriate. ▪ KEY requirements and expectations for your programs, offerings, services, and operations. ▪ Differences in these requirements and expectations among student SEGMENTS, STAKEHOLDER groups, and market SEGMENTS. o General Public o Government o Parents/Guardians o Academic Staff o Support Staff o Students o Employers(Public and Private sectors)	Reference Organizational Profile (Narrative) P.1b(2), Figure P.1-1 Key requirements for each stakeholder group. http://www.uitm.edu.my	

b(3)	▪ Suppliers and PARTNERS play in learning-centered PROCESSES and KEY support PROCESSES ▪ Organizational INNOVATION PROCESSES ▪ Most important types of suppliers and PARTNERS ▪ Most important requirements for your suppliers	(i)Reference Category 6: Process Management (ii) Reference Category 8: Innovations	
b(4)	KEY supplier, PARTNER, student, and STAKEHOLDER relationships and communication mechanisms	Reference Category 1: Leadership 1.2 Governance and Social Responsibilities.	
2.a	**Organizational Challenges**		
a(1)	**Competitive Environment** ▪ Competitive position: Government policy of ranking universities may affect funding and attracting quality students and staff. ▪ Relative size and growth in education sector or markets served. o High growth of projected increase of intake in line with 200,000 enrolments for the whole university. Infrastructure may not be able to cope with the increase intakes. ▪ The numbers and types of competitors for your organization. o 17 IPTAs and 26 IPTS in Malaysia	http://www.uitm.edu.my Refer to "Pelancaran Rancangan Malaysia ke 9 Universiti Teknologi MARA, 23 Mei 2006" Website: http://portal.uum.edu.my/portallbm/link/ipta.htm http://portal.uum.edu.my/portalbm/link/ipts.htm	

a(2)	▪ The principal factors that determine success relative to the competitors and comparable organizations delivering similar services. o Research o Consultancy o Publications o Employability of graduates o PhD holders o Programme & courses offered	Refer to "Pelancaran Rancangan Malaysia ke 9 Universiti Teknologi MARA, 23 Mei 2006" FKM Strategic Planning 2006-2010 document.	
	▪ KEY changes taking place that affect your competitive situation o Government announcement of 200,000 enrolments for the whole university may cause some difficulties to the Faculty but may also provide opportunity in term of extra funding if faculty can position itself strategically.	Refer to "Pelancaran Rancangan Malaysia ke 9 Universiti Teknologi MARA, 23 Mei 2006" FKM Strategic Planning 2006-2010 document.	
a(3)	▪ KEY available sources of comparative and competitive data from within the academic community ▪ KEY available sources of comparative data far applicable analogous PROCESSES outside the academic community ▪ Limitations to obtain these data.		

b.	**STRATEGIC CHALLENGES** KEY education and LEARNING, operational, human resource, and community- related STRATEGIC CHALLENGES. ▪ Offer high quality, challenging academic programs that influence and respond to a changing society ▪ Higher Population and Students Expectation ▪ The Need for Increasing Postgraduate Intakes and Research Excellent ▪ Striving for World-class Learning KEY STRATEGIC CHALLENGES associated with organizational SUSTAINABILITY ▪ Maintaining Fiscal Health and Integrity ▪ Attracting and Retaining a High-performing Staff	UiTM Policy 2010 and File: FKM Strategic Planning 2006-2010 document. UiTM Policy 2010 and File: FKM Strategic Planning 2006-2010 document.	
c.	**PERFORMANCE Improvement System** Maintain an overall organizational focus an PERFORMANCE improvement, including organizational LEARNING: ▪ Balanced Scorecard techniques ▪ ISO2000 compliances ▪ Process of getting BEM, EAC and Washington Accord recognitions ▪ SYSTEMATIC evaluation and improvement of KEY PROCESSES ISO2000 compliance	UiTM Policy 2010 and File: FKM Strategic Planning 2006-2010 document. Reference EAC Accreditation Application and IMechE Accreditation Application. Refer to IMechE Accreditation Application Form IAF Issue1: Appendix A3	

No	Particulars	Document / File No.	Remarks
1.	**LEADERSHIP**		
1.1 a(1)	**Senior Leadership** **VISION and VALUES** The vision and mission of FKM has been formulated and created These vision and mission were set by the agreement of the faculty member during a workshop at Port Dickson on 11-13 April 2003. The vision has been progressively achieved through the faculty 5 years strategic planning 2006-2010.	File: FKM Strategic Planning 2006-2010 document	
	Action to Reflect commitment to organization Values ▪ Implementation of ISO throughout the UiTM system ▪ Built new engineering S&T complex. ▪ Provide budget for infrastructure includes facilities.	Refer to ISO document File:100-FKM (PTA 9/11/4) (Administration Room)	*ISO (Jawatankuasa Perkembangan Teknologi)*
	▪ Curriculum review to meet the BEM and industry requirements	File: Bengkel Semakan Kurikulum Program EM110 & EM220 Fakulti Kejuruteraan Mekanikal (Dean's Office)	
	▪ Organizing International Conference on Advance Mechanical Engineering every two years.	File: 500-FKM (PTA 16/4) Jld.2 (Administration Room)	*Latihan/Kursus Anjuran Fakulti..*

a(2)	**Environment that fosters legal and ethical Behaviour** Staff ▪ Computers are provided for each individual lecturer. ▪ Computer Resource Room for lecturer is also provided. ▪ Thumb print biometric system is closely monitored to ensure staff attendance and punctuality. ▪ Stationery item such as papers, transparency, pens etc. are given to all lecturers. ▪ Creating faculty committees which are being actively participated by staff. ▪ Setting-up committee a special committee to correct unethical behaviour of lectures. Students ▪ Students are required to follow the Student's Attire and Discipline given in the student's handbook. ▪ Customer feedbacks are encouraged and actions are taken according to customer feedback.	Individual Lecturer's room Level 10 Level 9 (Administration Office) File: 500-FKM (PTA 8/3) File : 300-FKM (PTA 5/1) (Administration Room) List of committee and members and work achieved. File: 500-FKM (PTA 17/5) (Administration Room) IMechE Accreditation Application Form IAF Issue 1: Appendix A2 -IMechE Accreditation Application Form OS Issue 1: Appendix B3 -Industries and Graduating/Alumni Survey's feedback (Accreditation Room Level 9)	*Laporan Bulanan Kad Perakam Waktu.* *Alat Tulis (UHT/bentuk kertas/kad)* *Latihan/kursus Anjuran fakulti*

	▪ Student Facilities are provided at the faculty such as water coolers, rest areas, student center of excellent room, notice boards for students.	Physical facilities available at the designated areas.	
a(3)	**Senior leaders create a sustainable organization.** · Introduced flow diagram to monitor student progress and graduating students	Refer to IMechE Form OS Issue 1: Appendix B7	
	▪ Customers feedbacks are provided for continuous improvement	-IMechE Accreditation Application Form OS Issue 1: Appendix B3 -Industries and Graduating/Alumni Survey's feedback	
	▪ Expanding the industrial linkages with well-known companies.	IMechE Accreditation Application Form OS Issue 1: Appendix B12	
	Senior leaders create an environment for performance improvement, accomplishment of strategic objectives, innovation and organizational agility.		
	▪ SIG groups are lead by seniors staff/professors and come up with innovative research projects, seminars and consultancy	Refer to Directory of Research & Consultancy 2006, Faculty of Mechanical Engineering: Special Interest Group in Faculty of Mechanical Engineering Pages 8-10	
	▪ Organised IRPA workshop every year for all academic staff and at the end of the workshop each lecturers have their own research proposal.	File: 600-FKM (PTA 5/2) (Administration Room)	*Penyelidik Akademik (BRC)*

	▪ Setting-up of publication unit to produce mechanical engineering journal.	http://www3.uitm.edu.my/faculties/fkm	
	▪ List of publication of academic staff on the FKM websites	http://www3.uitm.edu.my/faculties/fkm	
	▪ Introduction of new postgraduate MSc by coursework ▪ Introduction of new undergraduate course	Refer to IMechE Accreditation Application: Section 10 Future Plans at Form OS issue 1, page 38/77	
	Succession planning and development for future organizational leaders Make the availability of the following management course to staff; module leadership, course leadership, research project leadership, head of department and senior management courses.	File: FKM Strategic Planning 2006-2010 document. Pages 20-21 File: 100-FKM (PTE 37/5) -Training Need Analysis Administrative & Support	*Rancangan J,pendek/J.waktu/kalendar akad,PKT fakulti/cwg*
b	**Senior leaders communicate with staff throughout the organization.**		
b(1)	▪ Schedule meeting with academic staff and non-academic staff. ▪ Sending memo, letters and email to staff.	File: 100-FKM (PTA 36/5/2) File: 100-FKM (PTA 36/5/4) (Administration Office)	*Mesyuarat Kakitangan Akademik Mesyuarat Ketua/Kursus/Pengurusan fakulti*
	▪ Setting-up of Staff notice board and staff common room.	Level 9 (Administration Office)	

	Two-way communication Staff academic meeting in which all lecturers are actively involved. **Staff rewards and recognition** ▪ Faculty arranged special meeting with TNCA to explain the promotion criteria. ▪ Staffs are encouraged to apply for higher level of salary scheme under UiTM salary scheme. ▪ Faculty arranges staff outing, gives certificates of appreciation, and gives pat on the back and verbal and written appreciation. ▪ Faculty gives awards in the form of grant to attend external courses who perform well in research **Students rewards and recognition** ▪ Faculty arranges student outing gives certificates of appreciation, gives pat on the back and verbal and written appreciation. ▪ Setting-up of the student excellence center.	File: 100 FKM (PTA 36/5/2) (Administration Office) Dean's Office & Decision File : 500-FKM (PTA 10/1) (Administration Office) File: 100-FKM (PTA 36/14 (Administration Office) File: 100-FKM (PTA 36/5/1) (Administration Room) File : 100-FKM (PTA 37/8) (Administration Office) Notice board Level 9 (Administration Office)	*Mesyuarat kakitangan akademik* *Kenaikan pangkat* *Lain2 aktiviti pel/sukan/akt jbt/fardu ain pel.* *Anugerah & Penghargaan* *Lain2 aktiviti pel/sukan/akt jbt/fardu ain pel.*

	Stakeholders rewards and recognition ▪ The faculty gives advertisement space for those who participate in the faculty activities. ▪ Staff club performs charity works to show our appreciation to the society	Notice board Level 9 File: 500-FKM (PTA 19(2)(A)) File:100-FKM (PTA 13/1) (Administration Office)	*Iklan untuk staf* *Rekod surat kebajikan*
b(2)	**Senior leaders create a focus to improve performance and attain vision** **Staff** ▪ Staff can improve their performance from the student feedback on teaching performance carried out at the end of every semester.	OMR Forms (ISO Room Level 10)	
	Students ▪ Senior leaders called for Post-mortem meeting for student examination results for every semester.	File: 100-FKM (PTA 36/5/1) File : 100-FKM (PTA 36/5/1) (Administration Room)	*Mesyuarat Pentadbiran Akademik*
	Stakeholders ▪ Faculty involves in open day to have improvement inputs from the outside industries and prospective students and parents. ▪ Industries customer's feedback.	Faculty's Open Day - UiTM File: 100-FKM (PTA 31/8) (Administration Room) Industries and Graduating/Alumni Survey's feedback	*Minggu Silaturrrahim*

1.2 a a(1)	**Governance and Social Responsibilities** **Organizational Governance** **Key factors in governance system**		
	Accountability for management's actions ▪ Established the scope of work for every management staff in the job specification file.	File : 500-FKM (PTA 25/3) (Administration Office)	*Penyerahan Tugas(sk.Fail Peribadi)*
	Fiscal accountability ▪ Follow rules and regulations in procurement procedures set-up by the treasury office.	File : 100-FKM (PTA 6/6) (Administration Office)	*Pekeliling bendahari*
	Transparency in operations and selection All matters regarding the action being taken by the management are discussed openly in staff and management meeting.	Refer to Academic, Staff, Board and Management Review Meetings.	
	Independence in internal and external audits		
	▪ Auditing carried out by the internal audit either from FKM auditors or from other faculties.	ISO Audit File File: 400-FKM (PTA 27/1) 400-FKM (PTA 28/2) (Administration Room)	*Audit AM* *Audit dalam/Laporan audit dalam*
	▪ External audit from Lloyds are also carried out to audit our management, operation and academic activities.	ISO Audit File Also refer to IMechE Accreditation Application: Section 4 Form IAF Issue 1	

	Protection of stakeholder and stakeholder interest. **Students** Students are allowed to appeal for remarking their exam papers, readmission, and disciplinary actions.	IMechE Accreditation Application Form OS Issue 1: Appendix B9	
a(2)	**Evaluation of the performance of the senior leaders** ▪ Setting-up the SKT and performance indicator target for management staff and each senior includes the junior lecturers.	Individual Staff SKT file	
	Evaluation of the performance of the members of the governance board · Giving feedback from the faculty meeting to the board governors/faculty academic advisors	File: FKM (PTA 23/4/2) File: 100-FKM (PTA 36/5/1) (Administration Room)	*Mesyuarat pentadbiran Akademik*
	Senior leaders and governors use these performance review to improve their leadership system ▪ Senior leaders try to comply the board of governors requirements and the external examiner recommendations.	EAC Accreditation Application(Full Time): Appendix L	
b	**Legal and Ethical Behaviour**		
b(1)	**Adverse impacts on society of your programs** ▪ Students are lacking of soft skills: Faculty ensures	Syllabus EM220 Bachelor of Engineering Mechanical (Hons.) Structure C	

	that the teaching and learning process is carried out in English. ▪ The need to get the recognition of outside professional body: Curriculum review based on the requirement of BEM and EAC. ▪ Low CGPA grade of FKM graduates: Conducting method of effective teaching and upgrading the lab facilities and computers. **Anticipate public concerns with current and future programs** ▪ The need for increasing postgraduate intakes: The faculty is planning to offer four new post graduate courses including postgraduate by research and tough courses. ▪ Special program for poor performance as well as good performance students: The poor performance students were given extra tutorial and guidance by the internal academic advisor and program by BTN. The good students were offer internship program at Daimler & Chrysler Factory in Stuggart Germany. All students are required to go a compulsory industrial training with a minimum of 12 weeks. **Prepare for these concerns in a proactive manner.** · To increase the postgraduate intakes, the faculty is planning to offer four new post graduate courses	EAC/BEM Accreditation Application (Full Time) ISO 9001:2000 PDCA Objectives: PDCA Objectives File Refer to IMechE Accreditation Application: Section 10 Future Plans at Form OS Issue 1. Page 38/77 Refer to IMechE Accreditation Application: Section 7.1(c) Form OS Issue 1. Page 23/77 File: 500-FKM (PTA 14/6) Jld 2 (Administration Room) IMechE Accreditation Application: Section 10 future plans	*Urusan biasiswa pelajar/kursus pelajar*

	including postgraduate by research and tough course	Form OS Issue 1. Page 38/77	
	▪ The poor performance students were given extra tutorial and guidance by the internal academic advisor and program by BTN. The good students were offer internship program at Daimler & Chrysler Factory in Stuggart German. All students are required to go a compulsory industrial training with a minimum of 12 weeks.	IMechE Accreditation Application: Section 7.1(c) Form OS Issue 1. Page 23/77 File: 500-FKM (PTA 14/6) Jld 2 (Administration Room)	*Urusan biasiswa pelajar/kursus pelajar*
	Key compliance process , measures and goals for addressing risks associated with the faculty programs		
	▪ In case of exam paper leakage, the faculty asks and requires the preparation of back-up papers for all final examination papers.	File: 600-FKM (PTA 2/2/2) (Administration Office)	*Penyediaan soalan/semak baca/skima jawapan*
	▪ Preempt maternity leave, study leave and retire senior lectures by providing effective time table and schedule.	Refer to Time-Table prepared by the Time-Table Committee.	
	▪ To ensure minimum risks of unethical behaviour among the staff, the faculty is introducing spiritual values through religious talk organized by FKM.	File: 100-FKM (PTA 8/11) (Administration Office)	*Ceramah/penerangan forum/syarahan.*
b(2)	**Promote and ensure ethical behaviour in the senior leader interactions** ▪ Promote leadership by examples in the faculty	Dean, Deputy Deans and Management Staff.	

	Key process and measures or indicators for enabling and monitoring ethical behaviour ▪ Introducing biometric attendance system so that staff attendance is monitored and analyzed monthly. ▪ Examination paper preparation is monitored through the vetting committee workshop. ▪ Marking of answer scripts is monitored using the second examiners reports. **Monitor and respond to breach of the ethical behaviour** ▪ Setting-up Special committee to mitigate unethical behaviour ▪ Introducing biometric attendance system so that staff attendance is monitored and analysed monthly. ▪ Failure to comply well practices of academic activities such preparation of exam papers, final marks data entry etc. will be reprimanded through verbally and in writing. **Identify the key communities.** • Government agencies, private sector, parents, academic fraternities and general public.	Level 9 at Administration Office File: 500-FKM (PTA 8/3) (Administration Room) File: 600-FKM (PTA 2/2/2) (Administration Room) Dean's Office Administration Office (Level 9) File: 500-FKM (PTA 8/3) (Administration Room) File: 600-FKM (PTA 2/2/2) (Administration Office) Refer to **P.1b(2)** for each stakeholder group as shown in Figure P.1-1.	*Laporan bulanan kad perakam waktu* *Penyediaan soalan/semak baca/skima jawapan* *Laporan bulanan kad perakam waktu* *Penyediaan soalan/semak baca/skima jawapan*

c	**Support of key communities** **Support and strengthen the key communities.** • Senior leaders sit in various voluntary committees, deliver voluntary and paid consultancies. Leaders and staff present academic papers in conferences and organize academic conferences. • Staff Welfare Club visits less fortunate member of society like orphanages and Old Folks Homes	Refer to IMechE Accreditation Application Form OS Issue 1: Appendix 11 File: 100 FKM (PTA 13/1) (Administration Room)	*Rekod Surat Kebajikan*

No	Particulars	Document / File No.	Remarks
2.	**MEASUREMENTS, ANALYSIS AND KNOWLEDGE MANAGEMENT**		
2.1	**Measurements, Analysis and Review of Organizational Performance**		
a	**Performance Measurement**		
a(1)	**Key organizational performance measure** Program (EM220), Taught Course Syllabus, Invite Industry, Meeting (Curriculum Review Committee), Lecturer Punctuality & abide to faculty time tabling and evaluation (test, quiz, final exam), student award, academic advisory, CGPA monitoring. Performance measure- OBE, CGPA, attendance, OMR forms to support organization decision & innovation.	IMechE Accreditation Application: File Form OS Issue 1: Page11/77, Appendix B1, B7 Examination Room & ISO Room Level 10	
a(2)	**Effective use of Key comparative data and information** ▪ Marketable product ▪ Questionnaire ▪ Survey ▪ Alumni ▪ OMR form to support organization decision & innovation	-IMechE Accreditation Application File Form OS Issue 1:Appendix B3 -EAC Accreditation Application Document : Appendix K	

a(3)	**Performance measurement system** ▪ Continuous & response ▪ Opinion from industry up to date ▪ State of the art ▪ Periodically industry response.	File: 100-FKM (PTA 36/5/2) (Administration Room) File :100-FKM (PTA 36/5/4) (Administration Room)	*Mesyuarat Kakitangan Akademik* *Mesyuarat Ketua/Kursus /Pengurusan Fakulti*
b	**Performance Analysis & Review**		
b(1)	**Organizational Performance and capability** Regular Faculty meeting (agenda on students affairs) ▪ Active participation of senior faculty member which contribute constructive criticism (recommendation) circulars among faculty staff (especially senior staff) are welcome.	EAC Accreditation Application Document:Appendix I: 1.1(iii)	
	▪ Minutes from meeting (decision from Faculty is forwarded to high authority)	Dean & Deputy Dean Office	*-Mesyuarat Pengurusan kanan* *-Mesyuarat Lembaga Pengarah UiTM*
	▪ Mentor/ mentee program.	Personal File	
	▪ Seminars/ workshop at university level.	Training Need Analysis Administrative & Support (ISO Room Level 10)	
b(2)	**Organizational Performance review** Lab facilities, manpower, hands-on environment, and very much applicable in practice, effective knowledge transfer in classroom through experience manpower & user friendly lab equipment & research	EAC Accreditation Application Document: Appendix H2, H3 & H4	

	activities. ▪ Seminar/ workshop, hands on workshop.	Training Need Analysis Administrative & Support (ISO Room Level 10)	
2.2	**Information and Knowledge Management**		
a	**Data & Information Availability**		
a(1)	**Ensure availability of data and information** Through circular, data base, website (faculty), notice board, faculty journal, flyers ▪ Resource Room ▪ Personal computer & Internet	Faculty website: www3.uitm.edu.my/faculties/fkm	
a(2)	**Hardware and software reliability** ▪ Trained technician, ▪ periodically maintenance ▪ Firewall filter	Maintenance schedule - application form ISO –form complain	
a(3)	**Availability of hardware and software system in the event of emergency** Back-up data available internally & externally	EAC Accreditation Application Document: Appendix L	
a(4)	**Data and information availability mechanism** State of art through external examiner & product exhibition	EAC Accreditation Application Document: Appendix G	
b	**Organizational Knowledge Management** • Colloquium ,workshop, staff meeting		

	• Final year student project exhibition, industrial training • Colloquium, faculty journal, invite external companies during final students poster presentation	IMechE Accreditation Application: File Form OS Issue 1:Page 8/77 & Appendix B2	
c	**Data, Information, and Knowledge Quality** • Syllabus review, accreditation bodies • Comments from companies, accreditations from ISO 9001:2000 • Resource room, faculty journal, library • Items are controlled, accessible by authorize personnel. • Faculty's Board of Academic & Management Meeting	IMechE Accreditation Application: File Form OS Issue 1: Appendix B1, & B3 Dean & Deputy's Dean Office File: 100-FKM (PTA 36/5/1) (Administration Room)	*Lembaga Akademik*

No	Particulars	Document / File No.	Remarks
3.	**STRATEGIC PLANNING**		
3.1	**Strategy Development**		
a	**Strategy Development Process**		
a(1)	**Strategic Planning:** ▪ FKM Strategic Planning 2006-2010 ▪ Rancangan Malaysia 8/9 ▪ Federal Government planning (a) Rancangan Jangka Panjang 3 (RRJP3) ▪ 2nd National Science and Technology Policy ▪ UiTM planning of 2121 Strategy ▪ 11 Dimension and Indicators towards World Class University ▪ **Process Steps:** ▪ Strategic Action Plans through organizing of various inhouse-workshops **Key Participants:** ▪ FKM's academic board ▪ Government agencies ▪ Private sectors ▪ Alumni ▪ Professional bodies ▪ Suppor staff ▪ Administrators	File: FKM Strategic Planning 2006-2010 Document	

	▪ Panel of academic advisors **Process of identifying of Blind Spots** • Accreditations by EAC and EC Strategic Planning • ISO Quality Standards certifications Process Flowchart • Regular surveillance audits by ISO agencies Regular internal auditing • Regular evaluations by external examiners • Students Result Analysis **Identification, short and long-term planning and time horizons and timeline set:** ▪ Strategic Planning Workshop: Executive summary Strategic Planning 2006-2010: Policy, Objectives, Strategy, Performance Indicators and Personnel Responsible.	IMechE Accreditation Application Form IAF Issue 1 & OS Issue 1 -EAC Accreditation Application File: 100-FKM (PTA 9/11/4) Jld 2,3,4 (Administration Room) IMechE Accreditation Application IAF Issue1 : Appendix A3 EAC Accreditation Application (Full Time) : Appendix L File: 100-FKM (PTA 36/5/1) (Administration Room)	*ISO (Jawatankuasa Pembangunan Teknologi)* *Lembaga Akademik*
a(2)	**Strategic planning address the KEY factors:** ▪ Strategic Planning 2006-2010 Documents: Policy, Objectives, Strategy, Performance Indicators and Personnel Responsible ▪ Faculty of Mechanical Engineering Strategy Map	File: FKM Strategic Planning 2006-2010 Document FKM Strategy Map	

	▪ FKM planning upon own initiatives through various Universities Faculty Improvement Web site.	http://www3.uitm.edu.my/ faculties/fkm	
b(1)	**Strategic Objectives and Key goals** **Strategic Objectives:** ▪ To ensure the FKM curriculum is of world class standard ▪ To develop expertise and competencies to produce professional and ethical staff ▪ To develop scholastic values among student in order to produce visionary and competitive graduates ▪ To provide educational infrastructure, effective and conducive teaching with applications of latest technology ▪ To develop academic activities ▪ To manage faculty resources effectively and efficiently **Key Goals:** ▪ Deliver quality, flexible and innovative engineering education. ▪ Provide highly challenged intellectual educational experiences that simultaneously develop spritual values.	File: FKM Strategic Planning 2006-2010 Document FKM Strategy Map	14 Key Goals Strategy

	▪ Excel in research and research training ▪ Establish effective collaborative with industries and government agencies. ▪ Offer more relevant curriculum with emphasis on multidiscipline & entrepreneurship ▪ Better recruitment and supervision to produce excellent graduate ▪ Foster a collegial, trusting, and tolerant environment to ensure high morale, productivity and efficiency. ▪ Promote excellence in teaching, research, scholarship, and service to allow students and Faculty contribute toward expansion of knowledge and integrated engineering practice ▪ Allocation of resources according to priority needs ▪ Cost effective & spend smart ▪ To develop high-performing staff ▪ To maintain recruitment of high caliber staff ▪ Establish strong team work to meet everchanging needs		

b(2)	**Strategic Objectives addresses the challenges:** ▪ Offer High Quality Challenging Academic Programmes That Influence and Respond to a Changing Society. **N.B** Objectives and measures in all key goals ▪ Population and Students Expectation. **N.B** Attract better qualified students and correspondingly better budget. ▪ Need for Increasing Postgraduate Intakes and Research Excellent. **N.B** Introducing more post-graduate courses ▪ Maintaining Fiscal Health and Integrity. **N.B** Maintaining fiscal health and integrity is addressed in the key goal objectives of the aligned and integrated management system ▪ Attracting and Retaining High-performing Staff. **N.B** Objectives found in the key goal of high-performing staff. ▪ Employability of Graduates. **N.B** Diversities in talent which include becoming employers. ▪ Striving for World-class Performance	Reference: 3.1.2 Strategic Development Input in the Strategic Planning Category (Narrative)	

	N.B Key goals of 21st century skills and world-class achievement and to a lesser degree in the rest of the key goal objectives		
3.2 a(1)	**Strategy Deployment** **Action Plan Development and Deployment** • Need for a simpler and more effective way to plan and monitor short- and long-term objectives. • Dean and each Head of Centers design a One Page Business Plan for the year detailing their Centers' vision, mission, objectives, strategies, and action plans.	File: FKM Strategic Planning 2006-2010 Document	
a(2)	• The Strategy Report is developed with Lembaga Akademik feedback, • The Dean and Head of Centers One Page Plans are reviewed each quarter during Lembaga Akademik meetings to determine if progress is sufficient and if strategies or action plans need revision.	File: 100-FKM (PTA 36/5/1) (Administration Room) File: 100-FKM (PTA 36/5/1) (Administration Room)	*Lembaga Akademik* *Lembaga Akademik*
a(3)	**Strategy Deployment Time-line** • Yearly review and possible revision leads to periodic analysis of progress and assessment of results by plan owners. • Longer-term action plan, steps are verified for another year if the plan is working or revised if	File: FKM Strategic Planning 2006-2010 document.	

	necessary • Software reminds plan owners to update action plan progress each month. • Each action plan is expanded to include the specific steps that need to be accomplished if the action plan is to be successfully achieved		
a(4)	**Key human resource plans: Training Needs Analysis** • Review of principles of system improvement (customer, systems, variation, knowledge, planned change, and people principles), and a review of ethical practices are short-term goals for the year. • Support for ongoing instructional programs assessment practices, instructional programs and practices • Skill development or knowledge updates are longer-term human resource goals	Training Need Analysis Administrative & Support (ISO Room Level 10)	
a(5)	**Tracking of progress for Key Performance Measures or Indicators on Action Plans** ▪ Monitoring through the use of FKM Strategy Balanced Scorecard to be implemented soon.	Reference: 3.1.2 Strategic Development Input in the Strategic Planning Category (Narrative) – FKM Strategy Report (Balanced Scorecard Specimen)	
3.2 (b)	**Performance Projection** • Senior members seek out comparison data and Benchmarks Balanced Scorecard	Reference: 3.1.2 Strategic Development Input in the Strategic Planning	

	• Downloads comparative information from various universities Faculty Improvement web site • Facilitate efforts by every members in contributing towards achieving the faculty vision and mission	Category (Narrative) – FKM Strategy Report (Balanced Scorecard Specimen) http://www3.uitm.edu.my/faculties/fkm File: FKM Strategic Planning 2006-2010 Document	

No	Particulars	Document / File No.	Remarks
4	**FACULTY AND STAFF FOCUS**		
4.1	**Work System (Administration)**		
a(1)	**Organization and Management of Work** ▪ Work assigned according to job specifications	IMechE Accreditation Application Form IAF Issue 1: Appendix A2- Student handbook: Page 6	
	▪ Trainings/ workshop/ seminar	Training Need Analysis Administrative & Support	ISO Room Level 10
a(2)	**Work systems** Supervision of Student Final projects, research projects by faculty members, publications, postgraduates supervision	IMechE Accreditation Application Form OS Issue 1: Appendix B2 http://www3.uitm.edu.my/faculties/fkm	
a(3)	**Effective communication and skill** Gugusan meetings and discussions between Faculties and meetings among staff members	File: Mesyuarat Pengurusan Gugusan Sains & Teknologi UiTM Shah Alam (Dean Office) File: 100-FKM (PTA 36/5/2) File: 100-FKM (PTA 36/5/4) (Administration Room)	Administration Office *Mesyuarat Kakitangan Akademik* *Mesyuarat Ketua /Kursus/Pengurusan Fakulti*
b	**Faculty and staff performance management system.** ▪ SKT performance indicators and staff	Individual Staff SKT file Personal file and Staff feedback	

	feedback ▪ Staff service records, training profile ▪ Awards, and Motivational Courses	regarding the FKM Management Training Need Analysis Administrative & Support Personal file and Staff feedback regarding the FKM Management	
c	**Hiring & Career Progression**		
c(1)	**Characteristic and skill needed** Area of interest, and faculty requirements ▪ According to Programme needs, SIGs area, and Research Projects ▪ Staff Career Development and Progression	Refer to Directory of Research & Consultancy 2006, Faculty of Mechanical Engineering: Special Interest Group in Faculty of Mechanical Engineering Pages 71-91 Training Need Analysis Administrative & Support	
c(2)	**Recruitment through the following means:** • Advertisement • Direct Applications by applicants • Young Lecturer's Scheme • Overseas Expatriates • Recruitment of Staff Committee	File: 500-FKM (PTA 14/3/3) File: 500-FKM (PTA 19/1) (A) File: 500-FKM (PTA 19/1) (B) (Administration Room)	*Tenaga Pengajar Muda* *Pengambilan Staff Akademik* *Pengambilan Staff Non-Akademik*
c(3)	**Effective succession planning for leadership and supervisory position** ▪ Staff training matrix ▪ Head of Committees ▪ Head of Divisions ▪ Encourage staff to pursue postgraduate	Training Need Analysis Administrative & Support EAC Accreditation Application: Pages 21-31	

	PhD programme ▪ Encourage staff to obtain Professional Qualifications and become member of Professional Bodies.		
4.2	**Faculty and Staff Learning and Motivation**		
a	**Faculty and staff education, training and development**		
a(1)	**Key needs organizational performance measurement** • FKM Strategic Plans are achieved through staff development activities. • Increasing knowledge/ expertise/ skill	Training Need Analysis Administrative & Support EAC Accreditation Application: Pages 21-31 File: FKM Strategic Planning 2006-2010 Document	
a(2)	**New employee orientation** • Mentor-menttee programme • Motivation programme • Training	Personal file Training Need Analysis Administrative & Support	
a(3)	**Input from faculty and staff development needs** • Yearly review of FKM Strategic Plans	File: FKM Strategic Planning 2006-2010 Document	
	• Developments of new programmes • Programme curriculum review • ISO9001:2000 audits input to FKM	IMechE Accreditation Application: Section 10 Future Plans at Form OS Issue 1. Page 38/77 File: 400-FKM (PTA 27/1)	*Audit Am*

a(4)	• Feedback from EAC/BEM recognition	(Administration Room)	
	Deliver education and training • Schedule training programs for staff development • Mentoring of students • Students feedback - OMR	Training Need Analysis Administrative & Support Academic Advisors (Individual staff mentoring a group of students) OMR Form – ISO Room	
a(5)	**New Knowledge and Skills on the job** • Schedule training programs for staff development • Mentor/ mentee • Project Research by Staff • SIGs	Training Need Analysis Administrative & Support Personal File Directory of Research & Consultancy 2006, Faculty of Mechanical Engineering: Special Interest Group in Faculty of Mechanical Engineering Pages 8-10	
a(6)	**Evaluation of individual and organizational performance** • SKT evaluation of staff • Students evaluation OMR • Meeting Strategic Plans • Internal and External Recognition • Market acceptance of graduates	Personal File OMR Form – ISO Room Level 10 File: FKM Strategic Planning 2006-2010 Document Industries and Graduating/Alumni Survey's feedback	
b	**Motivation and Career Development** • Motivation of Staff	Training Need Analysis Administrative	

	○ Motivational courses ○ Awards and incentives ○ Training and career development • Job and career development assisted by senior staff ○ Mentor-menttee program amongst staff and senior staff	& Support Personal letters and certificates of appreciation Personal file	
4.3	**Faculty and Staff Well- Being and Satisfaction**		
a	**Work Environment**		
a(1)	▪ Each workplace is assigned with Laboratory Manager, Laboratory Assistant, and Technician ▪ Preventive Maintenance for all Laboratory Equipment ▪ Performance Measures for the workplace environment through: -SKT for each staff. -Training of staff	EAC Accreditation Application: Table C14 Analysis of All Supporting Staff pages 36-39 Maintenance logbook maintain at each laboratory Personal SKT file Training Need Analysis Administrative & Support Notice Board, Laboratory Procedures Signage, Safety Posters ISO documents (ISO Room Level 10)	
a(2)	**Preparation for disasters and emergencies** ▪ Using posters, safety procedures, drill (fire) ▪ Fire drills, FKM Occupational Safety and Health Committee	File: 500-FKM (PTA 23/4) FKM Occupational Safety and Health Committee file (Administration Office)	*Jawatankuasa Keselamatan dan Kesihatan Pekerjaan (FKM)*
b	**Faculty and staff support and satisfaction.**		
b(1)	**Key factors affect faculty and staff well being,**		

	satisfaction and motivation ▪ Awards, Motivational Courses, Trainings for each different kinds of category of staff	Personal file and Staff feedback regarding the FKM Management	*Tinjauan Pencapaian Kepimpinan FKM*
b(2)	**Services, benefits and policies** ▪ Compensation and benefits package for all staff provided by the University. • Health • Pension scheme • Dental • EPF • Socso • Sick leave • Tabung Khairat Kematian • Family medical leave • Hospitalization Insurance Scheme • Counseling Assistance Programme	Individual staff offer letter and agreement	
b(3)	**Formal and informal assessment method** • SKT performance indicators and staff feedback	Personal file and Staff feedback regarding the FKM Management	
	• Monthly academic staff meeting	File:100-FKM (PTA 36/5/2)	*Mesyuarat Kakitangan Akademik*
	• Teaching survey through OMR form • Mentor-mentee program	OMR Form – ISO Room Personal file	

b(4)	**Organizational performance result** • Assessment findings spelled out during meetings with individual staff on SKT and also during the Academic and Board Meetings	File:100-FKM (PTA 36/5/1) (Administration Room)	*Mesyuarat Lembaga Akademik*

No	Particulars	Document / File No.	Remarks
5.	**ORGANIZATIONAL PERFORMANCE RESULTS**		
5.1	**Student Learning Results** • Intake qualifications: Admission applicants with better qualifications Diploma – SPM Results Degree – Matriculation or Diploma Results	IMechE Accreditation Application Form OS Issue 1:Page 13-23	Compare intake qualifications July and November intakes Presented every semester
	• Progress of Students - Flow Diagram o Semester progress results o Students graduating within specified time o Retention rate	IMechE Accreditation Application Form OS Issue 1: Appendix B7	
	• Graduation rate	IMechE Accreditation Application Form OS Issue 1: Page 30	
	• Employability and Employers' perception	IMechE Accreditation Application Form OS Issue 1: Appendix B3.	
	• Skill development o Leadership o Solution provider o Conflict resolution o Communication o Computer competency o Inter personal skill	Curriculum programme review File: Bengkel semakan kurikulum program EM110 & EM220 FKM (Dean's Office)	

5.2	**Student- and Stakeholder- Focused Results**		

(1)	**Indicators of student and stakeholders' satisfaction and dissatisfaction.**
	
	• Summary of Graduating Student Feedback
	
	• Summary Survey From UiTM-FKM Alumni
	
	• Summary of UiTM-FKM Graduates Survey
	• Students' satisfaction
	  o Program outcome
	  o Faculty's academic and general services
	  o Faculty's academic and general facilities
		IMechE Accreditation Application Form OS Issue 1: Appendix B3	

(2)	**Indicators of student and stakeholder perceived value, student persistence, positive referral, and relationship.**
	• Faculty-University relationship
	  o Joint research
	  o Seminar and colloquium series
	  o Branch campus joint activities
		IMechE Accreditation Application Form OS Issue 1: Appendix B12	

5.3	**Budgetary, Financial and Market Results**		
(1)	**Indicators of budgetary and financial performance**		
	• Annual Budget-variances from budget plan	File: 400-FKM (PTA 12/1)	Yearly Budget
	• Annual Budget Allocation	File: 100-FKM (PTA 9/11/4)	Internal Audit Report
	• Budget variation report	File: 400-FKM (PTA 15/3) File: 400-FKM (PTA 29/3) (Administration Room)	FKM Annual Estimated Allocated Fund for Equipment
(2)	**Indicator of market performance**		
	Revenue generation o Consultancy o Collaborative work: Research Project o Postgraduate program o FKM Trust Fund: generate from Consultancy, and Course Programme Inter-session		
5.4	**Faculty and Staff Results**		
(1)	**System performance and effectiveness** • Staff satisfaction o Environment o Facilities o Award and recognition o Internal and External Recognition o Towards Management	EAC Accreditation Application (Full time); Appendix H1 Staff Personal File File: 100-FKM (PTA 36/5/1) (Administration Room) File; Tinjauan Pencapaian Kepimpinan	Award and Recognition Acknowledgement Letters

	• Staff qualification
	  o Academic
	  o Professional
	  o Skill
		FKM (Accreditation Room Level 9) EAC Accreditation Application (Full time); pages 21- 31	

(2)	**Faculty and staff learning and development**
	• Publication
	  o Journals
	  o Books
	  o Proceedings
	  o Articles and feature writings
		www3.uitm.edu.my/faculties/fkm	

	• Research activities
	  o IRPA grants
	  o University grants
	  o Others
		Directory of Research & Consultancy 2006, Faculty of Mechanical Engineering: Special Interest Group in Faculty of Mechanical Engineering	

(3)	**Faculty and staff well being satisfaction and dissatisfaction.**
	• Consultation
	  o Government
	  o University
	  o Others
		Directory of Research & Consultancy 2006, Faculty of Mechanical Engineering: Special Interest Group in Faculty of Mechanical Engineering	

	• Professional Training and Career Development
	  o Industrial attachment
	  o Sabbatical
		Training Need Analysis Administrative & Support	

No	Particulars	Document / File No.	Remarks
6.	**PROCESS MANAGEMENT**		
(1)	**Learning- Centered Processes**		
	▪ Facilities: Faculty & University What are the facilities in the classrooms, computer labs, etc. the faculty can provide to enhance students learning process.	EAC Accreditation Application (Full Time) Appendix H1,H2,H3,H4	
	▪ Student performance How the teaching delivery process (method of instruction) can assess student's performance.	Teaching Portfolio & Course file	ISO Room (Level 10)
	▪ Staff development Providing training to enhance the knowledge and quality teaching of lecturers	Training Needs Analysis Administrative & support	ISO Room (Level 10)
	▪ Curriculum To review periodically to improve the contents of the programme and to meet industrial needs so as to make our students more viable.	Syllabus EM220 Bachelor of Engineering Mechanical (Hons) structure C	
(2)	**Key learning- centered process development**		
	Input from student feedback -To get feedback of lecturer's teaching performance, knowledge, etc.	OMR Form	ISO Room (Level 10)
	Student various academic learning rates, capability, performance, achievements, etc	ISO Objective Quality	ISO Room (Level 10)

	-Encourage students to meet lecturers individually to discuss on problem topics to enhance their understanding		
(3)	**Design process to meet requirement**		
	▪ Provide facilities such TEC Room, Computer Simulation Software, etc. ▪ To complete their studies duration on time. ▪ Incorporate flexibility in the courses so as to encourage their creativity.	EAC Accreditation Application (Full Time) appendix H1	
(4) & (5)	**Key- Performance measures for improvement of learning centered process** ▪ Student Exams, Assessments, Tests, Quizzes, Laboratory works.	Teaching Portfolio & Course file	ISO Room (Level 10)
	▪ To assess students periodically during semester. Students Feedback, Student Complaint, Staff Appraisals (SKT)	Industries and Graduating/Alumni Survey's feedback	(Accreditation Room Level 9)
	▪ Training Need Analysis (TNA) Academic staffs are encouraged to attend courses, seminars and workshops organized by the faculty as well as those from other private organizers that are related to their teaching and research areas.	Training Need Analysis Administrative & Support	ISO Room(Level 10)
	▪ Upgrading of instruments and procurement of equipment and apparatus. The faculty should allocate sufficient funds for students to be exposed to new technology and techniques.	EAC Accreditation Application (Full Time) :Appendix H2,H3	

6.2	**Support Processes and Operation Planning**		
a	**Support Processes**		
a(1)	**Key support process**		
	▪ University's services: o Student Hostel o Sport Facilities o Transportation – bus within the campus. o Clinic o Free meal (hostel accommodation) for the needy students. o Security within the campus.	http://www3.uitm.edu.my	To look at the student daily needs such as accommodation, transportation, food, etc. These requirements should be provided by the University as listed.
	▪ Faculty's services: o Student Learning Area o Student Excellent Center o Support and organize activities for students	http://www3.uitm.edu.my/faculty/fkm Library PTAR 3 Student Excellent Center, Level 5 File:100-FKM (PTA 37/8) Jld 1 (Administration Room)	The faculty should also provide facilities and services to students to ensure their learning environment is conducive.
a(2)	**Key support process requirement**		Student's representative (council) will meet up with the Deputy Dean to discuss on student activities, needs, etc.
	Support System: ▪ Curriculums	Syllabus EM220 Bachelor of Engineering Mechanical (Hons) structure C File:100-FKM (PTA 13/1) (Administration Room)	
	▪ Student Welfare – Study Loan Arrangement		*Kebajikan*

a(3)	**Process design to meet key requirement** ▪ Schedule Training from ILQAM Industrial Attachment, Sabbatical leave	-File:100-FKM (PTA 36/4) Jld 1 (Administration Room) -Training Need Analysis Administrative & Support (ISO Room level 10)	*Seminar Peringkat UiTM Bhg/Faculti/ Caw(Konfrensi Akademik)*
	▪ Perancangan Lawatan Industri.	IMechE Accreditation Application Form OS Issue 1: Appendix B4	
	▪ ICT- Management and Organization Chart	IMechE Accreditation Application Form IAF Issue 1: Appendix A2	
	▪ CGPA requirement to complete the cycle time Review- Curriculums Reviews		
	▪ Rest Room, Corridor, Class Room: Daily cleaning ▪ Air-conditioning: Monthly checking	Refer to Maintenance Unit, S&T Complex	
	▪ Family Day - Sport	File:100-FKM (PTA 3/14) (Administration Room)	(Family day File)
	▪ Student –Staff Activity	File:100-FKM (PTA 37/5/1) (Administration Room)	General (Activity)
	▪ Photocopy Shop	PTAR in-house student photocopying service	
a(4)	**Key performance measures** ▪ Exiting Graduates feedback ▪ Graduates feedback - Alumni ▪ Mentor-Mentee System for Lecturers	IMechE Accreditation Application Form OS Issue 1: Appendix B3 -Industries and Graduating/Alumni Survey's feedback	Feedback on programme, curriculum, service.

a(5)	**Performances audits of support process** ▪ Do-It-Right-First-Time Every staff should have this in mind when carrying out any jobs and tasks as assigned. ▪ Technical Committee To advise on new equipment and machineries to be purchased.	Personal File (Administration Room) File: Manual Kualiti Arahan Kerja Prosedur Pengurusan	To monitor academic staff development
a(6)	**Improve support processes through :-** ▪ Student Advisor (Penasihat Akademik)	File: Available with respective lecturers.	
	▪ Staff rewards / achievements	Personal file	
b	**Operational Planning**		
b(1)	**Budgetary and financial resources** ▪ Yearly Budget ▪ Akaun Amanah ▪ Petty Cash	File: 400-FKM (PTA 12/1) File:400-FKM (PTA 23/2) (Administration Office)	*Baget* *Kumpulan Wang Amanah/Tabung Amanah*
b(2)	Continuity of operations in the event of an emergency. ▪ Two Campuses: Shah Alam & Penang. Equipped with similar laboratory equipment facilities.	Shah Alam & Penang Campuses	

No	Particulars	Document / File No.	Remarks
7.	**STUDENT, STAKEHOLDER AND MARKET FOCUS**		
7.1	**Student, Stakeholder and Market Knowledge**		
(1)	**With regard to the student, stakeholder, and market knowledge, the following activities have been done and are still going on.**		
	▪ Workshop/Seminar Stakeholders, alumni, and industry are invited to get the needs in current and future education of the Faculty of Mechanical Engineering. The workshop also looked at how to identify students and enrollment requirement. The output/product of this workshop is the Ten Years Strategic Planning Document.	Seminar/Workshop Hala Tuju FKM 1 and 2 File: FKM Strategic Planning 2006-2010 Document	
	▪ Market Survey To identify the current needs and possible change of trends in the demand. Also to find out the satisfaction/dissatisfaction of the students and stake holder.	IMechE Accreditation Application Form OS Issue 1: Appendix B3 Feedback forms: Exit Survey, Alumni and Industry (Accreditation Room: Level 9)	
	▪ Industrial visit To build the relation between the industry/stakeholder and the students as well as staff. Also to find out current technology and industrial requirement in Malaysia.	IMechE Accreditation Application Form OS Issue 1: Appendix B4	
	▪ Academic Advisor	File: Available with respective	

	To get focuses feed back with regard to the performance of the faculty for future improvement.	lecturers.	
	▪ External Examiner To maintain and improve the academic quality for the satisfaction of students and stake holders.	EAC Accreditation Application(Full Time): Appendix L	
(2)	**Method determining students and stakeholders key requirements and changing expectations**		
	▪ Feedback from industry, alumni, exit graduate - Question prepared to obtain comments on program delivered, so that further improvement can be made on this program.	IMechE Accreditation Application Form OS Issue 1: Appendix B3	
	▪ Industrial visit To build the relation between the industry/stakeholder and the students as well as staff. Also to find out current technology and industrial requirement in Malaysia.	IMechE Accreditation Application Form OS Issue 1: Appendix B4	
(3)	**Educational service needs and directions** ▪ Ministry of Higher Learning and JPA (Jabatan Perkhidmatan Awam) This relates to the national policy and accreditation. It is necessary for observing and ensuring the implementation of the government policy as the main stakeholder	Accreditation documents	
	▪ Professional body IEM,BEM, IMechE To insure the quality as demanded by the professional	File: 100-FKM (PTA-35/9) (Administration Office)	(IEM File)

	practices		
7.2	**Student and Stakeholder Relationships and Satisfaction**		
a	**The followings are activities related to the students, stakeholder relationships and satisfaction**		
a(1)	▪ Workshop/Seminar Stakeholders, alumni, and industry are invited to get together for maintaining the relationship and obtaining the feedback from them. For example, alumni gathering are conducted every semester.	-File: 100 FKM (PTA 35/8) (Administration Office) -IMechE Accreditation Application Form OS Issue 1: Appendix B3	(Alumni File)
	▪ External Examiner To maintain and improve the academic quality for the satisfaction of students and stake holders.	EAC Accreditation Application(Full Time): Appendix L	
	▪ Collaborative with industries To promote relationship with industries such as Golden Hope Diploma Palm Oil Mill Technology Program,Dunham Bush in research collaboration, Daimler Chrysler Internship Programme and Tyson Group.	-Memorandum of understanding (MOU) Daimler Crysler -Golden Hope Academy Pulau Carey (Dean Office)	Administration Office
	▪ Industrial training To build the relation between the industry/stakeholder and the students as well as staff. Also to find out current technology and industrial requirement in Malaysia.	IMechE Accreditation Application Form OS Issue 1: Appendix B4	

	▪ Professional body IEM,BEM, IMechE To insure the quality as demanded by the professional practices	File: 100-FKM (PTA-35/9) (Administration Office)	(IEM File)
a(2)	**Key access mechanisms enable students and stakeholders to seek information**		
	▪ Workshop/Seminar Stakeholders, alumni, and industry are invited to get together for maintaining the relationship and obtaining the feedback from them. For example, alumni gathering are conducted every semester.	-File: 100 FKM (PTA 35/8) (Administration Office) -IMechE Accreditation Application Form OS Issue 1: Appendix B3	(Alumni File)
	▪ External Examiner To maintain and improve the academic quality for the satisfaction of students and stake holders.	EAC Accreditation Application(Full Time): Appendix L	
	▪ Collaborative with industries To promote relationship with industries such as Golden Hope Diploma Palm Oil Mill Technology Program,Dunham Bush in research collaboration, Daimler Chrysler Internship Programme and Tyson Group.	-Memorandum of understanding (MOU) Daimler Crysler -Golden Hope Academy Pulau Carey (Dean Office)	Administration Office
	▪ Industrial training To build the relation between the industry/stakeholder and the students as well as staff. Also to find out current technology and industrial requirement in Malaysia.	IMechE Accreditation Application Form OS Issue 1: Appendix B4	
	▪ Professional body IEM,BEM, IMechE	File: 100-FKM (PTA-35/9)	(Alumni File)

	To insure the quality as demanded by the professional practices	(Administration Office)	
a(3)	**Relationship Management Process** ▪ Conduct an analysis complaint The FKM management team conducts an analysis of each escalated complaint so that an identical complaint does not recur.		
a(4)	**Relationship and providing current educational service needs** ▪ Offer new program When programs on offer is not adequate and cannot cover the specialized area. ▪ Exceeding the ISO 9001:2000 standards • Student's performance • Academic level of staff • Student segmentation • Increasing staff professionalism through research and publication ▪ Offer special topics/subjects Emphasizing on certain aspects of area or an extensions of the existing knowledge/teaching technology. ▪ Invited speaker To introduce a new trend or knowledge/application in industry/society.	IMechE Accreditation Application: Section 10 Future Plans at Form OS Issue 1, page 38/77 -IMechE Accreditation Application Form OS issue 1: Appendix B1 - Syllabus EM220 Bachelor of Engineering Mechanical (Hons.) Structure C EAC Accreditation Application(Full Time): Appendix G	

b	**Student and stakeholders satisfaction determination**	Ensuring measurements capture actionable information as in the above categories: 7.2 a (1), (2), (3), and (4)	
b(1)	**Student and stakeholder satisfaction determination keeping the listening and learning methods current with the needs** ▪ Continues and periodical action on articles 1 and 2. Action as written in article 1 and 2 are conducted regularly (periodically and continuously) to ensure the educational services and direction are current and relevant to the expectation of the students and stakeholder as well as to possible changes in the education community. ▪ Mechanism to address the prompt action to feedback and complaints. After survey been conducted the information is brought to the MKSP of actions to be taken. Survey is done by a team of ISO committee while MKSP (Mesyuarat Kaji Semula Pengurusan) consist of top Faculty management (Dekan, TD, Ketua Pusat Pengajian dan Ketua Program, and ISO team members)	File; Tinjauan Pencapaian Kepimpinan FKM (Accreditation Room Level 9) File: 100-FKM (PTA 36/5/1) (Administration Room) IMechE Accreditation Application Form OS Issue 1: Appendix B3 -Industries and Graduating/Alumni Survey's feedback	*Lembaga Akademik*
b(2)	**Follow up to receive prompt and actionable feedback.** -Student requests/ complaint through:- ▪ Email, phones, complaint boxes ▪ Committee structure (student council, student	(ISO Room level 10)	

	academic advisor) -Staff requests/ complaint through:- ▪ Personnel office ▪ Administration department ▪ Meeting among top management Faculty		
b(3)	**Obtain and use information** ▪ Continual improvements of all data collection are reviewed by ISO team.		
b(4)	**Determine satisfaction with current educational service needs** ▪ Offer new program When programs on offer are not adequate and cannot cover the specialized area. ▪ Exceeding the ISO 9001:2000 standards • Student's performance • Academic level of staff • Student segmentation • Increasing staff professionalism through research and publication ▪ Offer special topics/subjects Emphasizing on certain aspects of area or an extensions of the existing knowledge/teaching technology. ▪ Invited speaker To introduce a new trend or knowledge/application in industry/society.	IMechE Accreditation Application: Section 10 Future Plans at Form OS Issue 1, page 38/77 -IMechE Accreditation Application Form OS issue 1: Appendix B1 - Syllabus EM220 Bachelor of Engineering Mechanical (Hons.) Structure C	

No	Particulars	Document / File No.	Remarks
8.	**INNOVATIONS**		
8.1	**Organizational Effectiveness Results from Innovations (Learning-Centered)**		
(1)	**Students Performance:**		
	▪ Test ▪ Laboratory work ▪ Assignment ▪ Final Exam	Graduation Statistics (EM110 & EM220 from 2000 – 2005)	Cycle time: Percentage of number of students and CGPA on-time graduation / delayed graduation
	Academic Adviser (Penasihat Akademik, PA) for each student.	Lecturer room and teaching portfolio file (ISO room)	All students are assigned to one PA.
	Students Chapter for The Institution of Engineer Malaysia (IEM) and American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).	HEP. On-going, monitored by respective societies.	Formation of a complete graduate.
	Facilities: ▪ Students Excellent Room ▪ Library (PTAR 3) ▪ E-learning (i-Portal)	IMechE Accreditation Application Form IAF Issue 1: Appendix A2 http://www3.uitm.edu.my/faculties/fkm	1. Postgraduate Room at Level 5, FKM. 2. PTAR III is in place near the faculty.

(2)	**Organizational Effectiveness Results from Innovations (Lecturer Performance Oriented)** **Publication Unit:** An international advisory committee is being formed to replace the in-house (FKM) committee to overview the publication process and internationalization of the journal. Publication process is streamlined to match that of international journal standards. **Unit for Research Development Commercialization (URDC):** Review of new research project proposal. ▪ A list of panel based on specific discipline is formed and endorsed by faculty. ▪ A new evaluation form has been in place since February 2006.	http://www3.uitm.edu.my/faculties/fkm File :600-FKM (PTA5/2) Jld1 (Administration Office)	Quantum of quality research outputs. Academic Researcher
8.2 a(1)	**Self- Motivated/ Directed, Innovations / Inventions** **Innovations:** ▪ Laboratory Work and Lectures handled separately. ▪ Outcome Based Evaluation (OBE).	Course file (ISO Room Level 10) Syllabus EM220 Bachelor of	More weight age assigned to acquiring motor skills. To meet international

		Engineering Mechanical (Hons.) Structure C	benchmark required e.g. Washington Accord.
	▪ Mentor-Mentee program	Personal File	Reassurance that younger staffs are properly guided by the senior staffs.
b(2)	**Self- Motivated/ Directed, Innovations / Inventions: (Other Innovations)**		
	▪ Inviting expertise from IEM to give a special talk for students.	File: 100-FKM (PTA-35/9) (Administration Office)	(IEM File) Networking opportunity with future employers.
	▪ Students Chapter for the Institution of Engineers Malaysia (IEM) and American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).		
	▪ Industrial visits. Opportunity to meet future employers and to decide on future careers.	IMechE Accreditation Application Form OS Issue 1: Appendix B5	On-going Student Chapter activities Career advisory and technical visits involving students.
	▪ Design Competitions: • Rocket • Glider • Robocon	File: 100-FKM (PTA-37/1) (Administration Office)	(Planning & Program File) Inculcation of self confidence and satisfaction
	▪ Implemented preliminary system to the Student Final Year Project.	IMechE Accreditation Application Form OS Issue 1: page 8-11	Effective time management for preliminary system for student final year project.

	▪ Workshop for critical courses (high failure percentage) from 2003 onwards.	Training Need Analysis Administrative & Support (ISO Room Level 10	Failure rate of student for critical courses decreased.
c(3)	**Self- Motivated/ Directed, Innovations / Inventions: (Organizational Effectiveness)**		
	▪ Poster presentations of Students Final Year projects involving stakeholders.	Final Project Student Room (Level 10)	More lively discussions all round.
	▪ Holding workshop preparation for examination questions	File: 600-FKM (PTA 2/2/2) (Administration Office)	(Preparation Examination /Review/ Answer Scheme File) Better delivery time for examination questions

UNIVERSITI TEKNOLOGI MARA

FAKULTI KEJURUTERAAN MEKANIKAL

LAMPIRAN C

RESPONSES ADDRESSING

INNOVATION OUTPUTS

LAMPIRAN C

PREFACE: ORGANIZATIONAL PROFILE
P.1 Organizational Description

P.1a (1) Organizational Environment

Faculty of Mechanical Engineering of UiTM is the off-spring of former School of Engineering (one of the oldest School of ITM/UiTM-established in 1967) formed in 1996 when School of Engineering was divided into three faculties namely Faculty of Civil, Electrical, Mechanical Engineering respectively.

Being one of the oldest, the faculty has played a significant role in promoting professional engineering education among the Bumiputra community. So far it has produced 4776 graduates who are currently playing a very active role in mechanical engineering profession through different employment activities either in private or public sector.

Starting from a modest facility in the old academic building, the faculty moved into it a portion of the new UiTM's Science and Technology complex in 2003. The faculty is equipped with 25 laboratories, 35 classrooms, 88 staff offices, administrative office and sharing the lecture theatres with other faculties. Currently the enrolment is 477 Diploma students and 708 Degree students and 37 graduate students. At the same time the faculty is also responsible in developing and monitoring its programmes in UiTM's Penang campus which currently enrolling 925 Diploma students and 121 Degree students.

Producing world-class learners in today's complex and fast paced world is the single most important responsibility of the faculty in line with the University's vision of becoming world-class university. Lecturers, administrators, and support staff all work together to ensure all students receive world-class educational opportunities that will enable them not only to meet or exceed state standards, but will position them for success in future educational and career endeavors. Administratively the faculty is facilitating this ambition by maintaining its hard earned ISO9001:2000 Quality Award obtained in 2004, but more important is to ensure its programme is continually recognized by Malaysian Board of Engineers and striving to earn the EAC (Engineering Accreditation Council) recognition by Board of Engineers Malaysia and Washington Accord (WA) and also by The Institution of Mechanical Engineers (IMechE), United Kingdom.

Apart from achieving the above recognitions, the biggest challenge faced the faculty is how to slowly but steadily converting its whole mindset from a teaching to a research based faculty. The usual preoccupation of UiTM of ensuring a successful academic institution in educating a homogeneous group of students for non-homogeneous market is always a big challenge. In line with the university's philosophy that believes in the ability of any group of people (inclusive of under-privileged), the faculty is organizing its programmes through small class teaching rather than typical "mass-lecturing" techniques used by other research based universities. This approach however caused some constraints to the faculty in term of

lecturers' deployment where a big portion of their times are devoted to classroom teachings rather than research activities.

P.1a(2) The mission of Faculty is to produce world-class learners by building a connected learning community.
World-class learners are competitive with students worldwide. World-class learners achieve exemplary levels of understanding in academics. Connected learning community shares information, invites citizen participation especially the industries and the professional entities to work actively together.

Faculty's **core values** are the foundational principles for continually improving performance. They are:

1. **Excellence in teaching** within high quality, student centered undergraduate and graduate education involving active learning and appropriate technology.
2. **Scholarship and research** within applied knowledge
3. **Collaborative relationships** with business, industry, education, community and government.
4. **Active involvement in shared governance**, consensus-building, teamwork, open and effective communication, and respectful, ethical behavior.
5. **Management by Fact:** A successful management system is built upon a framework of measurement, data, and analysis. Key performance indicators, derived from student and stakeholder expectations aid decision-making and focus action. Data analysis supports a variety of purposes such as planning, continuous improvement of all processes, and performance assessment.
6. **Continuous Improvement and Learning**: Excellence is the result of well-designed and well-executed systems and processes. Improvement is driven not only by wanting to provide a superior quality education, but also by the need to be responsible and efficient. To meet these requirements, the process of continuous improvement must contain regular and frequent cycles of planning, execution, and evaluation.
7. **Results Focus:** Faculty's performance measurements must focus on key goals defined in its strategic plan, Strategic Vision 2005. The interests of all stakeholders; employees, students, government, suppliers, partners, parents, and community(especially the Bumiputra) guide results we work to achieve. The use of a Balanced Scorecard of performance measures offers an effective means to communicate progress toward short and long-term goals, monitor actual performance, and marshal support for improving results.

Six key goals must be accomplished if Faculty is to achieve its mission. They are:
1. **Students and the Community Acquire 21st Century Skills**
The skills are accessing and understanding information; oral and written communication; comprehensive reading and understanding; reasoning, problem-solving, and critical thinking; human relations; and life and entrepreneurial skills. This set of outcomes will be materialized once our new curriculum based on the EAC, WA, IMechE and Outcomes Based Education (OBE) accreditation is implemented.
2. **World-Class Achievement** (Student Performance Targets: Apart from 21st century skills, the faculty's programmes will be targeted to achieve world recognitions such as ISO9001:2000, EAC, WA and IMechE accreditation certification.

3. **Connected Learning Community** (The establishment and maintenance of productive relationships among members of the community especially the industry, professional bodies, accreditation agencies and other collaborative universities and the faculty broaden our capacity to meet the varied needs of all students and stakeholders.)
4. **Challenging and Orderly Learning Environment** (We bring together the above community resources to ensure that our faculty are providing an environment in which students are challenged to deliver the maximum efforts, the learning environment is orderly and caring, and students show responsibility and respect for the learning process and each other.)
5. **High-Performing Staff** (A team of professionals and support staff capable of performing at the highest levels of effectiveness and efficiency is fundamental to ensure world-class learning.)
6. **Aligned and Integrated Management System** (The use of an integrated management system is required to coordinate all activities and resources within faculty and the community to achieve the faculty mission.)

P.1a(3) A high-performing staff, a key goal, is vital to the successful operation of faculty and to producing high-performing students. In the 2005-06 faculty year, faculty employed 124 people, in which 88 are academic staff. The teaching staff averages 11 years of experience with senior staff who has also been with us more than 30 years. 52 of the academic staff hold master's degrees, and faculty now has 17 lecturers with Phd qualification, Currently 14 staff are undergoing further education (3 at Masters level and 11 at Phd level) This year the faculty introduced the concept of mentor-mentee where the experienced lecturers provide guidance to the less experience staff in term effective teachings and advises of career planning.

P.1a(4) Faculty is picking up in the use of technology to enrich and enhance students' learning experiences. Apart from 23 laboratories located in the faculty, students use computers in classrooms across the curriculum for data management, information processing, word processing, presentations, skill practice, spreadsheets, programming, design, research, and problem-solving. Some of the classrooms are equipped with basic multi-media teaching tools and all the lecturers offices are connected to broad-band internet. Students use computers extensively for writing projects, developing presentations, learning simulations, practicing skills, and doing research through internet. Recently lecturers are exposed e-learning tools to complement face-to-face interaction and hence enhanced teaching effectiveness.

P.1b(1) Organizational Relationships Faculty is governed through the normal university set-up where the Dean is responsible to the top management team and the University Senate. The University in turn reports to the Board of Directors that comprised distinguished personalities both from the private and public sectors. Representative from Public Service Department, Higher Education Ministry and the Treasury sit in this board to oversee the government interest in term of general policy and financial deployment.

Board of Directors' powers and duties include the broad authority to adopt and enforce all necessary policies for the management and governance of the University. Apart from this the faculty also seek advises from A Panel of Advisors that comprise

personalities from other universities (mainly from foreign universities), professional bodies and private sector.

P.1b(2) Faculty has dialogued with its stakeholder groups over the years (not as frequent to all stakeholders) to determine what key requirements they want Faculty to deliver. These dialogues have verified the key requirements for each stakeholder group as shown in Figure P.1-1.

Stakeholder Groups	Key Requirements
General Public	To provide a world-class education, support the development of good community citizens, and maintain fiscal integrity.
Government	To provide a world-class education in line of the political and socio-economic agenda set (within the scope of Malaysian 9th Economic Plan), and maintain fiscal integrity.
Parents/guardians	To ensure a caring, safe, and orderly learning environment, provide well-qualified lecturers in every classroom, provide a world-class education for every student, be informed about issues, events, programs, and practices in a timely manner, and learn in a respectful, cooperative environment.
Academic Staff	To feel safe and secure in a caring work place, participate in decisions that directly affect their work, work in a healthy faculty climate, receive help and support when needed, be provided staff development that is relevant and of high quality, be informed in a timely manner, and receive recognition.
Support Staff	To feel safe and secure in the work place, be treated with dignity and respect and feel supported by supervisors and peers, understand how job performance is measured and rewarded, be part of decision-making that relates to performance of duties, be provided staff development that is relevant and of high quality, work together as a team, and receive recognition.
Students	To learn in a caring, safe, and orderly environment, be treated by adults and peers respectfully and fairly, receive help when needed, behave according to expectations, do their best work, be satisfied with faculty, and be enthusiastic about what is learned and how it is learned. To provide a world-class education that provides them with competitive edge in the job markets and capable of becoming successful entrepreneurs
Employers	To have employees who are well prepared for the workplace of the 21st century and have a voice in the standards and goals set for educating students.

Figure P.1-1 Key Requirements for Each Stakeholder Group

P.2b Strategic Challenges Producing world-class learners and building a connected learning community are construction projects that are never complete. This is why Faculty is committed to continuous quality improvement—so it will be prepared to

provide the best possible education for the students of today as well as tomorrow. Based on extensive feedback and analysis, the following strategic challenges have been identified:

- **Offer high quality, challenging academic programs that influence and respond to a changing society.** *Faculty*'s challenge is to keep its programs continually renewed and refreshed. Strong stakeholder contact processes are employed to keep current on changing requirements. These relationship processes are implemented by Program Heads who use an effective Program Development Process to refine existing programs and to design new programs that cut across the Faculty. Key indicators of success include: (1) curriculum renewal, (2) employer assessment of graduate readiness and job performance, and (3) increased level of academic challenge.

- **Population and Students Expectation:** The Faculty is continuing in getting better qualified students and consequently their expectation for better delivery system is increasing. The government expects better performances across the faculties in the university to commensurate with the huge budget allocation provided.

- **The Need for Increasing Postgraduate Intakes and Research Excellent:** The fast-paced development of the country need to be supported by extensive latest applied and basic research. Having only started the culture of teaching university the faculty is facing a daunting task of contributing towards research excellent. One of the means to speed up this enormous task is by introducing more post-graduate taught programmes that are in pipe-line built through the Faculty Strategic Plans 2006-2010.

- **Maintaining Fiscal Health and Integrity.** Maintaining the quality of education in faculty with revenue increases not in pace with increasing enrollment is an increasingly critical challenge. The target 200,000 student's enrollment in the university by year 2015 set by the government will definitely affects the faculty enrollment. Faculty has no choice but to plan revenue generation activities to supplement government's allocation.

- **Attracting and Retaining a High-performing Staff.** Assuring that a quality teaching staff is ready to teach our students is a difficult challenge each year. There is a gap between experienced staff and junior staff (average teaching experience in the faculty is only 11 years) once the experienced staff retired. The bureaucracy of recruitment exercise and rigid salary schemes fail to attract the best brain from local or foreign labour market. Insistence to paper qualification deters very experience industrial players to join the faculty.

- **Striving for World-Class Learning.** Faculty has defined world-class learning to be the accomplishment of our student performance targets. BEM, EAC, WA and IMechE UK recognitions become clear targets for the faculty to achieve to ensure that all students are prepared to compete in a global economy.

- **Employability of Graduates.** The bottom line is how to ensure that graduates are highly employable in their trained fields either as employees or the graduates themselves becoming employers and entrepreneurs.

P.2c(1) Performance Improvement System Faculty's performance improvement system is carried out through multiple KPI's namely Balanced Scorecard and compliance to ISO9001: 2000 requirements. Senior leaders use this framework to help them understand how well the organization performs today and to plan how the organization should perform tomorrow. The framework is used to diagnose problems in the system and as a semiannual review in January and June of the performance of the entire system. These priorities are used to set individual senior leader objectives and action plans posted on a Web-based performance tracking system which is monitored by Faculty's administrators.

The framework always begins with a focus on the needs and expectations of students and other community stakeholders. The careful analysis of these needs and expectations drives both the diagnosis and redesign of the system. This diagnosis and design process results in all organizational systems aligned to the purpose of accomplishing Faculty's vision and mission.

1.0 LEADERSHIP

1.1 Organizational Leadership

1.1a (1) Senior Leadership Direction Senior leadership within the Faculty system includes the Panel of Advisors, Dean and his deputies and head of Departments. The Dean is the chief executive officer of Faculty and is responsible for carrying out the goals and policies of the University's Board of Directors, University's top management and the Senate.

Figure 1.1-1 Strategic Vision 2005

Strategic Vision 2005
Vision To strive in becoming an excellent Mechanical Engineering Faculty through world-class education
Mission To produce graduates with deep understanding of basic engineering principles, endowed with different skills such as analytical, leadership, competitive, creative, innovative, and professionally ethical and will be successful in any services and capable of becoming entrepreneurs.
Core Values 1. Excellence in teaching within high quality, student centered

undergraduate and graduate education involving active learning and appropriate technology.

2. Scholarship and research within applied knowledge

3. Collaborative relationships with business, industry, education, community and government.

4. Active involvement in shared governance, consensus-building, teamwork, open and effective communication, and respectful, ethical behavior.

5. Management by Fact

6. Continuous Improvement and Learning

7. Results Focus

Student Performance Targets

1. Students acquire the 21st century skills of: Accessing and Understanding Information, Oral and Written Communication Comprehensive Reading and Understanding, Reasoning, Problem-Solving, and Critical Thinking, life- long Learning, Spiritual Values and Human Relations and Life Skills

2. Graduating CGPA above 3.0

3. Minimum time to graduate

Key Goals/Objectives

Our Students and Communities Perspective:

1. Deliver quality, flexible and innovative engineering education.
2. Provide highly challenged intellectual educational experiences that simultaneously develop spiritual values.
3. Excel in research and research training
4. Establish effective collaborative with industries and government agencies.

Financial Accountability Perspective:

5. Allocation of resources according to priority needs
6. Cost effective & spend smart

Internal Process Perspective:

7. Offer more relevant curriculum with emphasis on multidiscipline & entrepreneurship
8. Better recruitment and supervision to produce excellent graduate
9. Foster a collegial, trusting, and tolerant environment to ensure high morale, productivity and efficiency.
10. Promote excellence in teaching, research, scholarship, and service to allow students and Faculty contribute toward expansion of knowledge and integrated

engineering practice
Human Resource and Internal Growth Perspective 11.To develop high-performing staff 12.To maintain recruitment of high caliber staff 13.Establish strong team work to meet ever changing needs 14.To provide safe, healthy and gratifying job environment
Key Quality Measures ISO9001:2000 compliance, BEM, EAC, WASHIGTON ACCORD and IMechE UK Recognitions
Action Plans Faculty Improvement Plan through Balanced Scorecard Process

The mission, organizational values, key goals, and performance expectations of Faculty were developed through the FKM strategic planning 2006-2010 process. FKM senior leaders deploy organizational values, key goals, and performance expectations through a network of interrelated communication groups that include Head of Departments, Board of Academics, regular staff meetings and various task oriented committees created. These groups have been chosen to create a two way communication process between senior leaders and staff to share clarifications and issues related to how plans to achieve the mission, core values, key goals, and student performance targets are being deployed and how well deployment is working. They also have been chosen because they connect to all internal staff and external key communities.

The deployment of Strategic Vision 2005 is monitored at each Head of Department meeting using a standing agenda item called the One Page Plan Balanced Scorecard (OPPBS). The leadership team, consisting of the Head of Department, also analyzes deployment to confirm levels of understanding and commitment and to determine if strategies need to be changed to improve deployment levels. This process of setting, communicating, and deploying values and performance expectations (Figure 1.1-2) has resulted in staff and community stakeholders who understand the mission of Faculty and how this mission guides day-to-day work responsibilities. Communicating to develop an understanding about the student performance targets has created a heightened focus on improving student achievement.

How Senior Leaders:	Set	Communicate	Deploy
Organizational Values	Core values determined during strategic planning process • Leadership team refines core value understanding • Board policies • Reviewed annually by Head of Department	. Interrelated communication groups . publications state mission, core values, and key goals . Web site	. Academic Board and staff meetings • New lecturers induction process • Faculty improvement plans (annually) • Senior leader One Page

			Balanced scorecard Plans (monthly) • Curriculum committees/ other task oriented committees
Performance Expectations	Benchmark high-performing faculty • Head of Department developed and Academic Board approved key goals and student performance targets • Reviewed annually during the Strategic planning diagnostic cycle	• publications • Annual report • Building and department staff meetings • Interrelated communication groups . Web site	Faculty improvement plans (annually) • Department operational definitions (semi-annually) • Senior leader One Page Balanced Scorecard Plans (monthly) • Administrator and staff performance reviews (annually)
Creating and balancing value for students and stakeholders	Academic Board and Head of Department review of trend data • Annual priority setting and budgeting process • Reviewed annually during the faculty diagnostic and design cycle	Head of Department adoption of the annual budget tied to improvement goals • publications • Staff and department meetings • Interrelated communication groups	• Senior leader One Page Balanced Scorecard Plans (monthly) • Department PDCA improvement cycles (as needed) • Budgeting process (annually)

Figure 1.1-2 Setting, Communicating, and Deploying Process

1.1b Organizational Governance The governance system in Faculty is determined, in part, by federal and state laws, guidelines, and University College Act. All the rules and procedures set by highest authority of the university, Senate, Academic Office, and Bursary are adhered to the best knowledge. Students as stipulated in the academic regulations can appeal for remarking of their examination scripts should they feels that the scripts were not fairly marked. Like any Public department the Faculty affairs are subjected to auditing by the Internal Auditor or the National Auditor if necessary.

1.1c (1) Organizational Performance Review The organizational performance review cycle in Faculty is done by scrutinizing the current balanced scorecard sheet and also the compliance auditing of ISO9001: 2000 by the external auditor.
Analysis of the overall success of Faculty begins with a *diagnosis phase* where gaps between current performance and desired goals and targets are identified and root causes for gaps in performance are determined. Pareto's Law is applied to the gap analysis to determine what systems will most leverage organizational performance. A *design phase* aligns the organization so that areas of high performance are maintained while improvements are designed and developed to close performance gaps. The *deliver phase* focuses on deploying the new designs and sustaining support for the new designs through the collection of process data and frequent analysis of that data.

The *diagnosis phase* is set in the context of accomplishing the Faculty mission, key goals, and student performance targets. Based on this context, each department in Faculty writes operational definitions for all quality characteristics that need to be functioning at high levels in order for the organization to reach its mission. These operational definitions become part of the One Page Balanced Scorecard (OPBSC) that is used by the dean, his heads of department, and the leadership team to assess progress by department.

The *diagnosis phase* begins by reviewing customer and other stakeholder needs/expectations. OPBSC data are then used to determine where results are meeting established goals and targets and where gaps exist. Comparison data is reviewed at this time. Faculty culture is analyzed to determine what knowledge, skills, attitudes, and motivation are causing gaps in performance. Data from the core processes (decision-making, information, development, rewards, and structure) are used to assess cultural effectiveness and determine what improvements should be made. Based on this analysis, the *design phase* identifies the "vital few" priorities that can leverage significant improvements in organizational performance and describes how strategy and core processes will change to affect the culture and improve results. *The deliver phase* uses the Plan, Do, Check Act (PDCA) quality improvement cycle to try out the improvement theory(s), study the results and either standardize improvements or improve the design. Benchmarking is used when more radical improvement is necessary. In-process measures are an important aspect to the deliver phase. The leadership team applies the *diagnosis, design, and deliver phase* in January and June of each year, led by an ISO9001:2000 certified trainer. During the year, leadership teams monitor the OPBSC monthly and analyze process data and determine if mid-course corrections are needed.

1.1c (2) Senior leaders review performance measures using the OPBSC quarterly and semiannually at leadership meetings. The measures of short- and long-term objectives are reported in Figure 2-2. Examples of recent performance review analysis have included needs to improve the number of students with CGPA above 3.0 on graduation and minimum time to complete the diploma and degree programmes. These priorities are deployed through the Faculty Improvement Plan and department PDCA improvement cycle plans and become budget allocation priorities.
1.1c (4) Senior leaders improve their leadership effectiveness through a formalized process using multiple sources of feedback and data. The Dean is formally evaluated by the Vice – Chancellor on his ability to achieve the Faculty's goals that were developed to support accomplishment of the core values and key goals in Strategic Vision 2005. In turn Dean evaluates the performance of the senior leadership. For the first time the performance of the Dean and his subordinates' satisfaction with his performance were also evaluated.

1.2 Social Responsibility

1.2a (1) Responsibilities to the Public A core value of Faculty is public responsibility and citizenship. Senior leaders have initiated programmes and practice that model Faculty's public responsibility and its desire to be a good citizen to communities it serves. Faculty is subject to federal, state, and local laws, rules, and regulations. These are carefully followed in all planning and decision- making

activities in Faculty and because of this strict adherence to legal guidelines, Faculty has a proud historical compliance record. There have been no major compliance issues in the past many years. The importance of the safety of its students and staff is reflected in the key goal of creating a caring, safe, and orderly learning environment. It is of the utmost importance for Faculty: 1) to ensure that statutory, common law, health, and safety rights are extended to all students, employees, and visitors; 2) to make certain that Faculty's buildings and grounds are maintained by the Maintenance Department in a safe condition; and 3) to provide careful supervision and protection for all of Faculty's real and personal property.
Apart from the above the faculty through its Staff Welfare Club extends its charitable culture by visiting and performing voluntary activities to few orphanages and Old Folks Homes.

1.2b. Ethical Behavior Ethical practice is defined in board policy and the Faculty and Student Handbooks. The Dean, by this actions, discussions with the interrelated communication groups, during the new lecturer induction process, and at leadership team meetings make it very clear to the community and staff that ethical behavior is of the utmost importance for all Faculty's activities and that a breach in ethics will be addressed immediately. Student ethical behavior is taught and reinforced by incorporating into the curriculum, practiced through extracurricular activities, and made an integral part of instruction. Strict adherence to academic honesty especially during examinations becomes part and parcel of the Faculty's culture. There were cases of offenders being punished for not behaving ethically.

1.2c. Support of Key Communities The leadership, and staff has determined that Faculty's commitment to its community is to support local agencies that, in turn, provide the most support to Faculty students and parents. The faculty's expertise are channeled to various users in form of voluntary services or paid consultation. The Dean, senior leaders, and staff not only present regularly at conferences but also organized Academic Conferences.(NAME 05- May 2005) was the last national seminar organized by the Faculty.

MEASUREMENT, ANALYSIS, AND KNOWLEDGE MANAGEMENT

2.1 Measurement and Analysis of Organizational Performance

2.1a(1) Management by fact and a results focus are several core values . These core values are key to another core value, continuous improvement and learning. What data to collect is determined in all cases by organizational meeting, seminars and industrial response. Data needs are determined by stakeholder management group, interrelated communication groups, and departments. These sources determine both lagging and leading indicator data needed for all staff in the organization, collection timing, data formats, statistical analysis, and the kinds of decisions the data will inform. All data and information such as syllabus, student evaluation, CGPA monitoring, students attendance must align with the organizational objective. Data collection methods are combined wherever possible to simplify the collection process, and at the same time, satisfy all data needs. This comprehensive set of data allows the superintendent, lecturers, support staff, students, department managers, parents, and external stake-holder groups to analyze performance over time. The significant organizational shift that occurred district wide because of our focus on management by fact is a sharing system of data analysis, where everyone who needs it sees everyone else's performance.

2.1a(2) The use of all data creates a constant challenge to find apples-to-apples comparisons. Comparative data are requested for all data that are gathered. We also look for comparison data in the private sector. For example, we tried to collect data through questionnaire and alumni response as a comparison because an exhaustive search for this information was unsuccessful. Another example is the use of the surveyed data as a organizational comparison of customer satisfaction with products and service. In addition, process owners continually scan for benchmarks that can inform and improve programs and practices. Internal benchmarking is a required practice between faculties and within departments. A team was trained about the benchmarking process and how to use it to improve processes that are critical to organizational effectiveness. A proper filing system is used for employee data, payroll, accounts payable and receivable, budgeting information, purchase orders, inventory, and general accounting. This system has increased the effectiveness and efficiency of organizations.

When data are reported, they are accompanied whenever possible with comparison data as a matter of practice. Data collected from consumers now expect comparison data and would not find a data set complete without it. Wherever possible, data are reported by high, low, and average performer. For example, when faculty receive their student OMR form and enthusiasm data, it is reported using highest, lowest, and average scores so that school staff know the variation within the data. Also, single points of data are not used for decision-making purposes. Trend data are required as standard practice when decisions are being made about priorities, standardizing programs and practices, resource allocation, and other significant issues that affect the academic, social, and physical well being of students and staff.

2.1a(3) The groups and processes described in 2.1 a(1) assess the efficiency and effectiveness of the performance measurement system so that it is meeting the needs of those who are the consumers of data. Among the data being taken into consideration are continuous response, opinion from industry up to date and periodically industry response. For example, the leadership team has just critiqued the

value of the CGPA and made suggestions for its improvement. These suggestions will help users to find the right student performance data by improving the descriptions of reports and grouping reports into more logical arrangements so that finding data will be more intuitive. Because a variety of employee groups monitor data collection and analysis during the course of the year, improvements and changes can be made as they are identified, including those that might be influenced by faculty changes in policy. For example, in-process or leading indicator data are now collected and used much more frequently for decision-making and monitoring progress. These data are aligned with organizational objectives review cycles built into the strategic planning process and are revised if a realignment of goals and/or targets occurs.

2.1b(1) Senior leader organization performance reviews are accomplished through regular faculty meeting, seminars and workshop at university level. Active participation of senior faculty member which contribute criticism, are most welcome in these platform. The faculty meeting process is a complete analysis of the organization including stakeholder needs/expectations/ requirements, result trends, core process efficiency and effectiveness, strategy implementation, and mission/goal alignment. The faculty meeting process also analyzes organizational performance for both the short- and longer-term. The faculty strategic planning is built and includes those objectives and action plans that need to be accomplished in order to achieve its key goals. Minutes from meeting or decisions are forwarded to high authority.
The superintendent has identified those measures that he considers key to understanding and monitoring organizational performance. These are address in a faculty meeting. Please note that the parent, student, and staff lagging/leading indicators for safety and the parent, student, and staff lagging/leading indicators for working conditions and satisfaction are analyzed. When the responsible person update the superintendent record, it is their responsibility to alert him if any other department or operational measures are showing unfavorable or unusual trends so that this can be addressed immediately if necessary. The top management are informed by the superintendent about ongoing performance of the organization in relation to the key goals. The fact that organization success measures are aligned to the key goals makes the relationship between organization performance and faculty strategic planning a 100-percent match.

2.1b(2) The communication of results to faculty and staff is accomplished through the effective knowledge transfer in classroom by experience man power, through well equipped laboratory facilities, seminars, workshop and hands on workshop. The process requires each activity to analyze specific sets of data as they determine improvement priorities and make decisions about what goals they want to achieve. The data is made available so that staff can spend time analyzing gaps, root cause analysis, and discussing improvement theories. The staffs in charge display the data using LCD projectors so that all staff are analyzing the same data at the same time.

The top managements are participants in almost all seminar and workshop analysis cycles so they can report to staff all organizational performance review findings and improvement decisions that are made by the leadership team. Additionally, performance review findings are shared at the interrelated communication group meetings held throughout the year. These systematic processes assure that staff has

current valid and reliable data with which to make critical decisions that will improve future organizational performance.

2.2 Information and Knowledge Management

2.2a(1) Data and information are made available to administrators and staff through the circular, data base, faculty web site, notice board, faculty journal and flyers. One area for improvement suggested was the need to better manage the large amounts of data that existed. Data was not being used as effectively as possible to improve teaching, learning, and administrative efficiency. The faculty meeting, seminars, workshop is a platform to address data and information needs, specifically to support continuous improvement in student achievement. During this discovery process, a few questions were identified as crucial to accomplishing the student performance targets and achievement of faculty mission. The answers to these questions became the data design, acquisition focus and guided development and deployment processes over time.

The faculty filing record is now populated with carefully chosen and cleansed (validated) pertinent data from data filing systems. This now allows management decision makers to access data instantly and securely via the Internet and proper filing system and employs easy-to-use tools to discover, analyze, and mine those data. Data reports relate attendance to achievement, track enrollment histories, disaggregate all test results by subgroup performance, and give this information in trend strings of at least twice a years.. Data can be drilled from on line system to the individual child. Because all the data is cleansed before it goes into the data base, staff can be assured of the quality of the data. The data is used to make academic decisions, for trend analysis, and to set improvement targets. This means the data are historical, are read-only, are current but not real-time data, are maintained by batch loads that are cleansed from original sources, and has infinite data growth potential. These "rules" ensure data integrity and accuracy and creates the ability to do data analysis anytime it is needed. Security is handled through a pass code system accessible only on certain computers on senior leaders' desks. Systems management of the data base includes system backup and recovery, performance and capacity management, problem management, and operational management.

Data that do not reside in the faculty data base are the responsibility of the data owner and in many cases, the department leader. These data are generally used for operational decisions and have similar "rules" related to their use.

The data base on line system has enabled responsible staff to decrease processing time and increase reporting capabilities.

Responsible staff are allowed to access their budgets so they can check balances at any given time and their own expense and detail ledger reports. This enables them to evaluate their budget and expenditures in a more timely fashion as opposed to waiting for the faculty to disburse their reports.

Payroll time entry allows for more streamlined processing. There are more fields available to store information about an employee which allows versatility in extracting payroll information. The system gives flexibility for storing information which, in turn, allows for a great deal of reporting options.

2.2a(2) The faculty had purchases technology hardware required reliability as a key criterion. Computers, printers, servers, telephones, video monitors, and projectors are purchased from major manufacturers known for their quality products. Computers, for example, are purchased from what the industry terms "tier one" manufacturers to ensure reliability and quality. When purchasing workstations, the faculty ensures an extended warranty on parts and labor to assure the manufacturer repairs the workstations. In line with that the faculty always has their technician trained and conducts periodically maintenance.

Users identified the issue of network reliability as a high priority. The data show the reliability of the present local and wide area network had been decreasing and that a new network was required to assure high reliability. The management approved upgrading internal wiring and network electronics, converting the legacy token-ring network to a state-of-the-art. In addition, present wide area network has been changed to a proven reliable network used by benchmark districts. The new network assures higher reliability.

Software is purchased using reliability and user-friendly criteria. Users provide feedback about software packages they require to meet district goals. A partnership has been formed with a vendor who knows and understands the software used. When new software is produced, management delays purchases until the software is deemed stable and reliable. Training files provides training on new operating systems and software packages, delivered in a variety of ways that are convenient to the end user.

Aging hardware is upgraded if usable or discarded when the useful life of the equipment has been exceeded. This process provides up-to-date and highly functional hardware throughout and assures that hardware reliability is not a problem.

Student and staff user safety is enhanced by a state-of-the-art firewall filter that protects internal systems from hackers and also protects students from unsuitable Web sites and information delivered to their desktops.

2.2a(3) Organizational needs for data drive the collection of data. This becomes evident when the data diagnostic cycle is employed. During this cycle, data that tracks student performance target results and data that departments use to track above-the-line contributions are evaluated for usefulness, accuracy, and value in relation to the investment of time in collection and analysis. This diagnostic process results in a continual improvement in availability and relevancy.

To identify needed improvements to the management, members of the interrelated communication groups who are frequent data users are asked if the data necessary to make good decisions are the right data and available at the right time. The answers to these questions help realign data gathering and analysis processes to add value. For example, one comment about the right data question was that if the student being monitored, did their performance improve over time? This is a logical question that comes from the difficulty of determining the relationship between achievement and student and staff ratio. One set of data in the system was designed to answer this question.

2.2b(1) Organizational knowledge is managed through the use of its Intranet Web-based system, colloquium, workshop and staff meeting . The purpose of the system is to provide all staff members the ability to communicate, collaborate, and access vital information electronically. The system has user-friendly template for lecturers to use in creating Web pages, subject area program descriptions, staff development information, a quality tools site, the Web-based systems are plans by subject area or department, a staff evaluation process page, certification renewal application information and forms, a feedback page that posts all feedback results from surveys and focus groups, a professional library access page, and a learning resource center teachers page. The Web-based system was developed in response to specific concerns regarding communication, articulation, training, and technology. It builds connections between the lecturers, students, faculty members and top management that supports world-class learning and a high-performing work force.

The identification and sharing of best practice is addressed through information collection and exchange in Web-based system, bench-marking, teamwork and collaboration activities within groups and across groups and through the interrelated communication groups. These approaches assist in the collection and transfer of expert knowledge about programs and effective practices across faculty. Managing organizational knowledge has become more important as retirement rates increase and program and practice expertise walks out the door. The faculty has moved quickly to set up these approaches to answer this need.

2.2b(2) The faculty ensures data and information integrity, security, and confidentiality through established procedures that include authorized access and password requirements for all users and Internet filter provider monitoring of all network transactions. Required field entry screens control accuracy along with standard definitions for field entries and continual training for all staff who are responsible for data entry. The manager of application services and faculty improvement facilitator cross check critical data especially student performance data, to validate accuracy. Reliability and timeliness are addressed using back-up protocols, system testing, and monitoring system reliability. Security and disaster recovery plans exist for all mission critical data systems. A preventative maintenance plan has been recently designed for all network hardware to address past reliability and timeliness issues.

The technology team, consisting of the manager of infrastructure and operations, technical support specialists, manager of user services, Learning Village specialist, and instructional technology coordinator, meets monthly and evaluates hardware/ software mechanisms to ensure they are current in relation to district needs and requirements. Reliability and ease-of-use issues of district hardware/software are also evaluated during meetings so that a systematic review of all hardware/software integrity, timeliness, reliability, security, and confidentiality issues occurs on a regular basis. Data obtained through comments from companies, accreditation bodies, ISO 9001:2000 feedback are analyzed to measure system improvements over time and to identify areas for improvement. Customer satisfaction trend data and the cycle time for help desk requests are reviewed during faculty meetings. A preventive plan for Disaster Recovery includes recovery faculty member identification, faculty member responsibilities, the disaster recovery process, the hot site location box, lock box

location and contents, vendor phone number, and a disaster recovery phone tree. The plan has been simulated and found to perform as designed.

3.0 STRATEGIC PLANNING

3.1 Strategy Development

3.1.1 Strategy Development Process

As a means of determining major directions, Faculty of Mechanical Engineering (FKM) has completed its third strategic plan in the past 10 years. The desired goal in this stakeholder-driven strategic visioning process is to determine what stakeholders require and expect of FKM. FKM cannot improve the systems that support achievement of goals if the end in mind is not clearly aligned to stakeholders' current and future requirements and expectations.

The operational goal is for FKM to translate stakeholder expectations and institutional performance requirements into an effective management system integrated. The management system includes integrating the Strategic Map 14 key goals (Figure 3.1) and Strategic Planning Process (Figure 3.2) into faculty improvement plans, development and refinement of organizational processes to improve effectiveness, and a process for evaluating and improving the planning and deployment process.

The FKM's Academic Board (FKMAB) leads the strategic planning process with the Dean and staff support. The team discussed issues during workshops comprising of representatives from Goverment agencies, private sectors, alumni, professional bodies, support staff, administrators, Panel of Academic Advisors (PAA) and is chaired by the Dean.

The Balanced Scorecard Process was used to develop and assess this stakeholder-driven strategic visioning process. FKMAB members benchmarked strategic planning processes used in highly successful entity such as the University of Newcastle, Australia strategic planning process self-evaluation questions.

14 KEY GOALS IN STRATEGIC PLANNING

STUDENTS & COMMUNITIES PERPECTIVE

- Deliver quality, flexible and innovative engineering education.
- Provide highly challenged intellectual educational experiences that simultaneously develop spritual values.
- Excel in research and research training
- Establish effective collaborative with industries and government agencies.

INTERNAL PROCESS PERSPECTIVE

- Offer more relevant curriculum with emphasis on multidiscipline & entrepreneurship
- Better recruitment and supervision to produce excellent graduate
- Foster a collegial, trusting, and tolerant environment to ensure high morale, productivity and efficiency.
- Promote excellence in teaching, research, scholarship, and service to allow students and Faculty contribute toward expansion of knowledge and integrated engineering practice

FINANCIAL ACCOUNTABILITY PERPECTIVE

- Allocation of resources according to priority needs
- Cost effective & spend smart

HUMAN RESOURCE AND INTERNAL GROWTH PERSPECTIVE

- To develop high-performing staff
- To maintain recruitment of high caliber staff
- Establish strong team work to meet everchanging needs
- To provide safe, healthy and gratifying job environment

Faculty of Mechanical Engineering **STRATEGY MAP**

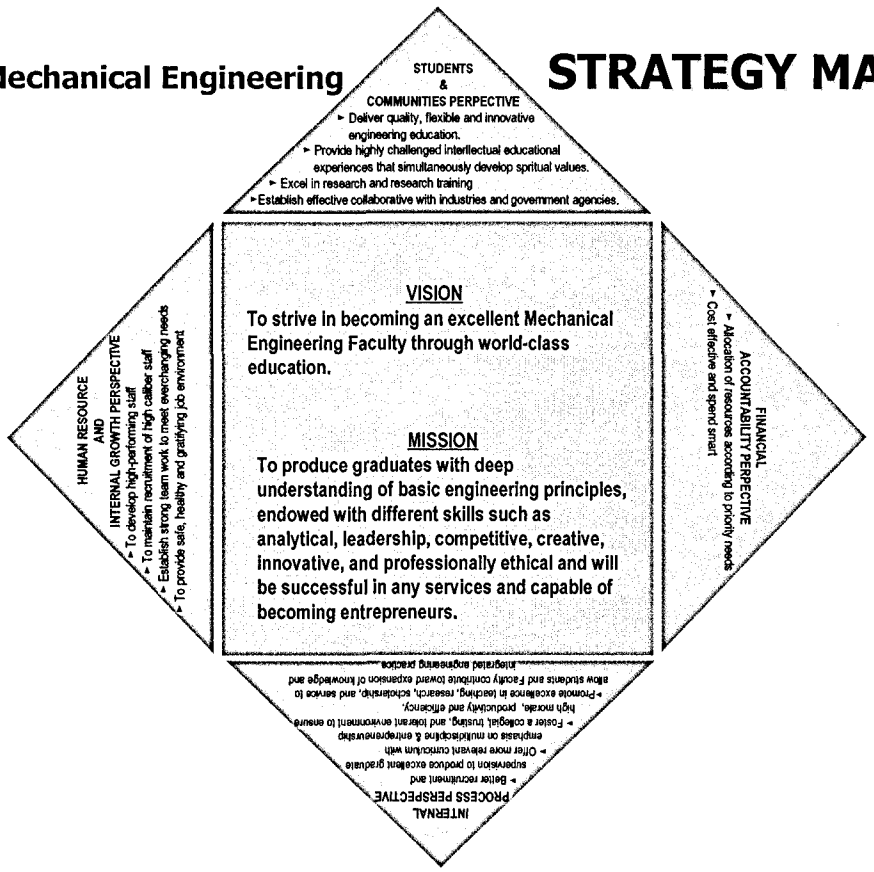


Figure 3.1

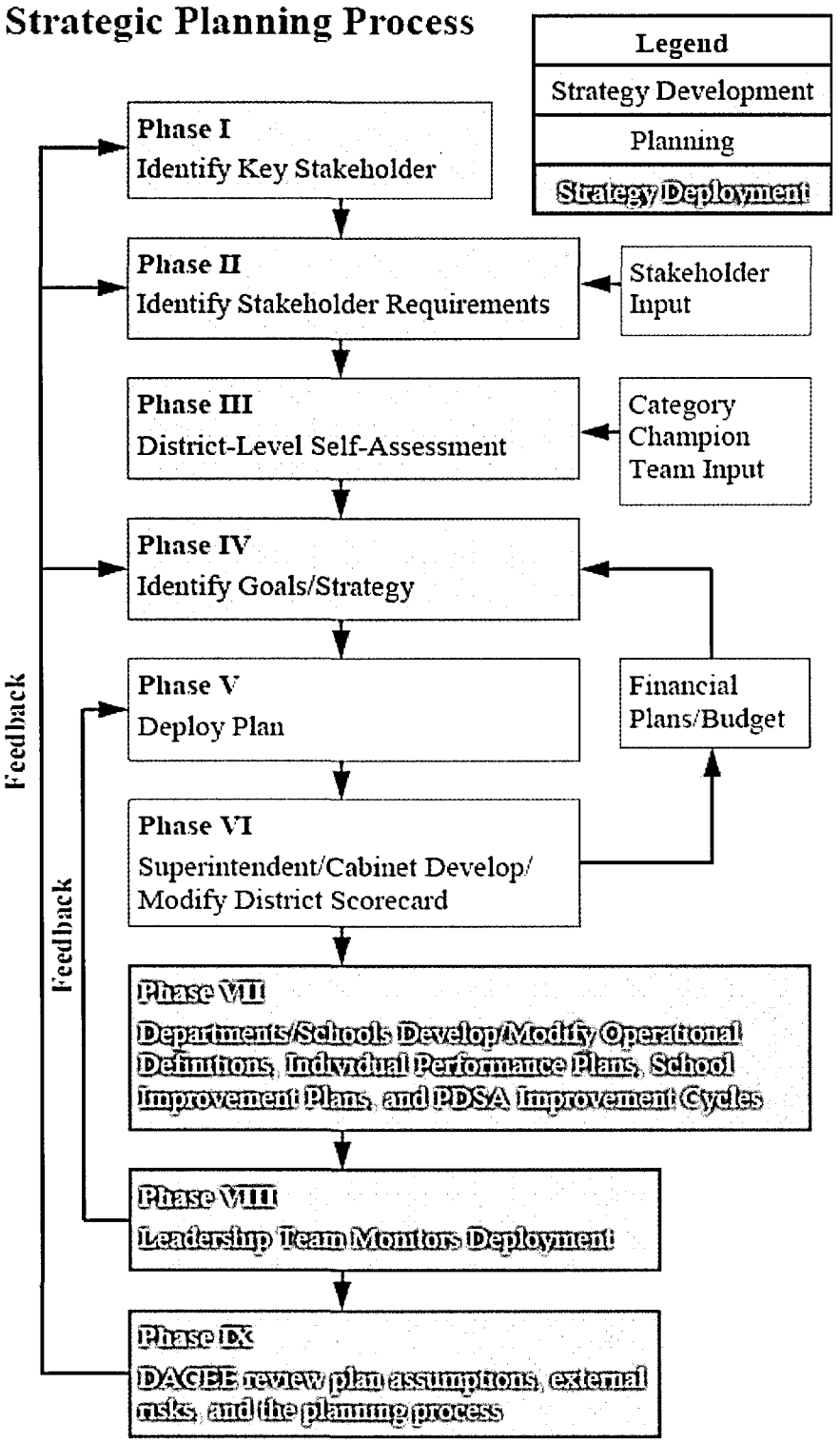

Strategic Planning Process
Legend
Strategy Development
Planning
Strategy Deployment
Phase I
Identify Key Stakeholder
Phase II
Identify Stakeholder Requirements
Stakeholder Input
Phase III
District-Level Self-Assessment
Category Champion Team Input
Phase IV
Identify Goals/Strategy
Phase V
Deploy Plan
Financial Plans/Budget
Phase VI
Superintendent/Cabinet Develop/ Modify District Scorecard
Phase VII
Departments/Schools Develop/Modify Operational Definitions, Individual Performance Plans, School Improvement Plans, and PDSA Improvement Cycles
Phase VIII
Leadership Team Monitors Deployment
Phase IX
DACEE review plan assumptions, external risks, and the planning process
Feedback
Feedback

Figure 3.2

Phase I FKMAB members identify key stakeholder groups that must be part of the planning process. Key stakeholder groups include Faculty staff, community members, regional, and professional organizations.

Phase II FKMAB and senior members identify stakeholder requirements and expectations through strategic planning meetings and invitational focus groups. This phase also identifies the key external and internal factors, requirements, strengths, weaknesses, risks, and opportunities that identify key student and University performance requirements.

Phase III Senior members identify the results FKM and University are currently producing in all areas of the organization. This phase identifies internal capabilities and needs, including assessment of student performance. External feedback reports and Quality Assurance (QA) team assessments are essential during this phase.

Phase IV FKMAB members and senior members identify key issues and building goals/strategies that will produce results described in the requirements and expectations identified in Phase II.

Phase V Senior members inform all FKM staff about instructional and operational performance goals and strategies for the short and long term, and how they will be deployed.

Phase VI Dean and FKMAB set short and long term improvement objectives at this time and the Strategic Report (Specimen) is modified to align to key goals and identified priorities based on information from Phases IV and V. The Strategy Report drives the allocation of resources and the redistribution of those resources, if necessary.

Phase VII Heads of Centers develop or modify work unit operational definitions and Plan, Do, Check Action (PDCA) improvement plans. Faculty members develop or modify their Faculty Improvement Plans (FIPs) based on Strategy Report goals and measures.

Phase VIII Membership team formally monitors deployment of the strategic plan throughout the year.

Phase IX FKMAB members annually review the strategic plan requirements, assumptions, competitive environment, scans the environment for trends that may affect FKM, and identifies program and practice implications.

FKMAB meetings this year focused on a review of the strategic planning process, key goals, performance measures, target time-lines, reports from the external examiners, professional visitations such as from the Board of Engineers Malaysia (BEM), Institute of Engineers Malaysia (IEM), Washington Accord, Engineering Accreditation Council (EAC), Institute of Mechanical Engineers United Kingdom (IMechE), and feedback report and community response to the report, scanning data, ethical risks, budgetary risks and changes, competition, and business presentations about employee skill and work habit needs. Advice from FKMAB is reviewed at membership meetings and used as part of the semi-annual organizational performance review.

3.1.2 Strategy Development Input

FKMAB uses environmental scan data and analysis that is regional in scope and developed by the Office of Development and Research of the University. Economic, education, demographics, politics, social, and technology trends and issues comprise the scan. FKMAB members contrast the scanning service summaries with their own familiarity of information to assist FKM in identifying any shift in trends that could have consequences for programs, practices, policy, and/or resource allocations. These scanning perspectives are also contrasted with FKM's considerable formal survey data, informal focus group and interrelated communication group feedback, and achievement trend data to continuously check expectations and requirements with scanning information.

3.1.2a Strategic Objectives key long-term goals, measures, and targets are described in Figure 3.1, and were determined from the organization performance review.

3.1.2b During Phase IX, FKMAB, as part of its review process, continually identifies challenges to FKM, now and in the future.

FKM finds that its greatest challenges are:-

Offer High Quality Challenging Academic Programmes That Influence and Respond to a Changing Soceity.

N.B Objectives and measures in all key goals of Figure 3.1

- Population and Students Expectation.

  N.B Attract better qualified students and correspondingly better budget

- Need for Increasing Postgraduate Intakes and Research Excellent

  N.B Introducing more post-graduate courses

- Maintaining Fiscal Health and Integrity

  N.B Maintaining fiscal health and integrity is addressed in the key goal objectives of the aligned and integrated management system

- Attracting and Retaining High-performing Staff

  N.B Objectives found in the key goal of high-performing staff

- Employability of Graduates.

  N.B Diversities in talent which include becoming employers

- Striving for World-class Performance

  N.B Key goals of 21st century skills and world-class achievement and to a lesser degree in the rest of the key goal objectives

These challenges were determined by over 200 staff members during the discussions in the Strategic Map and verified by the FKMAB.

By aligning short-and long-term objectives to the key goals and the seven challenges, FKM is clearly addressing the needs and requirements of its total student population and members of its communities, both those who have students in FKM and those who see FKM as a community service provider.

A search of benchmark organizations, local comparisons, and research literature confirms that the key goals and student performance targets the FKMAB has set for FKM are world-class. The accomplishment of each and every key goal and student performance target remains FKM's most important challenge. Operationally, overcoming this challenge means that all organizational processes have to be optimized by increasing effectiveness, reducing PDCA cycle times, improving benchmarking, maximizing cost effectiveness, and improving data analysis skills.

3.2 Strategy Deployment

3.2.1 Action Plan Development and Deployment

The Strategy Report was designed and developed based on its semi-annual review process in response to requests for a simpler and more effective way to plan and monitor short- and long-term objectives and manage the collection and analysis of in-process data related to objectives and action plans.

The Dean and each Head of Centers design a One Page Business Plan (OPBP) for the year detailing their Centers' vision, mission, objectives, strategies, and action plans. The Strategy Report is developed with FKMAB feedback, national priorities, faculty staff input, and is based on Centers operational definitions. In-process data for objectives is collected monthly or quarterly and posted on each plan as well as monthly updates on the percentage of action plan steps accomplished. The Dean and Head of Centers' OPBP are reviewed each quarter during FKMAB meetings to determine if progress is sufficient and if strategies or action plans in OPBP need revision. This process improvement has contributed significantly to the use of systematic organization-wide performance reviews to monitor program and practice results, provides that ability to analyze data and identify and isolate root cause, and to implement timely improvements. Any unfavorable results or action plans that are behind schedule can be addressed immediately.

One of the new Strategy Report information relates to an improved budgeting process. Tentative budgets by Head of Centers are presented to the FKMAB semi-annually. Budget presentations now include the mission of the Centers, Centers' objectives, current performance in relation to forecast performance, program priorities and changes needed to achieve current forecast performance, or the proposal for new forecast performance levels, and expenditures necessary to implement improvements. This allows the board to analyze budget requests based on actual performance and objectives and action plans aligned to key goals.

3.2.2 Strategy Timeline

Action plans are developed yearly although they may be long-term in nature. FKM has chosen this procedure so that action plans are always up-to-date and represent the best thinking of the owners of the improvement plan. Yearly review and possible revision leads to periodic analysis of progress and assessment of results by plan owners. If it is a longer-term action plan, steps are verified for another year if the plan is working or revised if necessary. The plan owners are reminded to update action plan progress each month. This allows the Dean and other FKMAB members to quickly check progress, especially where action plans in FIPs need to be coordinated or where steps in the action plans by one owner are contingent on the completion of action steps by another owner. In the action plan component of the OPBP, each action plan is expanded to include the specific steps that need to be accomplished if the action plan is to be successfully achieved.

Most objectives and action plans do not represent major changes but instead show continued refinements of effective approaches to achieving our key goals and mission. They address the key challenges FKM must overcome and they address areas of current performance that need to be accelerated if the student performance targets are to be achieved in the near future. There have been eight cycles of improvement.

3.2.3 Training Needs and Analysis

Support staff training, a review of principles of system improvement (customer, systems, variation, knowledge, planned change, and people principles), and a review of ethical practices are short-term goals for the year. Continued support for ongoing instructional programs and practices, assessment practices, and faculty staff needs for skill development or knowledge updates are longer-term human resource goals. Membership training is accomplished during membership team meetings, conference attendance, and independent study.

3.3 Performance Projection

Figure 3.3 (Specimens for FKM Strategy Report) below shows both short and longer-term objectives related to our 14 key goals that could spearhead the FIPs. FKM senior

members seek out comparison data and benchmarks wherever possible to help judge overall performance. As part of the action plan in FIPs, FKM downloads comparative information from various University's Web site to facilitate efforts by every members in contributing towards achieving the faculty vision and mission.

Faculty of Mechanical Engineering **STRATEGY REPORT**

VISION

To strive in becoming an excellent Mechanical Engineering Faculty through world-class education.

MISSION

To produce graduates with deep understanding of basic engineering principles, endowed with different skills such as analytical, leadership, competitive, creative, innovative, and professionally ethical and will be successful in any services and capable of becoming entrepreneurs.

Perspective	Objective	Measurement		Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend
STUDENTS & COMMUNITIES PERSPECTIVE	1 Deliver quality, flexible and innovative *engineering education.*									
	2 Provide highly challenged interllectual educational experiences that simultaneously.									
	3 Excel in research and research training.									
	4 Establish effective collaborative with *industries and government agencies.*									

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Perspective	Objective	Measurement		Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend
FINANCIAL LIABILITY PERSPECTIVE	5 Allocation of resources according to priority needs									
	6 Cost effective & spend smart									

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend
INTERNAL PROCESS PERSPECTIVE	7 Offer more relevant curriculum with emphasis on multidiscipline & entrepreneurship.								
	8 Better recruitment and supervision to produce excellent graduate								
	9 Foster a collegial, trusting, and tolerant environment to ensure high morale, productivity and efficiency.								
	10 Promote excellence in teaching, research, scholarship, and service to allow students and Faculty contribute toward expansion of knowledge and integrated engineering practice								

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend
HUMAN RESOURCE & INTERNAL GROWTH PERSPECTIVE	11 To develop high-performing staff.								
	12 To maintain recruitment of high caliber staff.								
	13 Establish strong team work to meet everchanging needs.								
	14 To provide safe, healthy and gratifying job environment.								

Figure 3.3: Specimens for FKM Strategy Report

4.0 FACULTY AND STAFF FOCUS

4.1 Work Systems

4.1a (1, 2, and 3) Organization and Management of Work

The organization and management of work for all staff in FKM focuses on the contribution each makes to the accomplishment of the faculty mission. FKM cannot produce world-class learners by building a connected learning community if all work systems are not aligned and contributing to that mission. All faculty members have, as leaders of their units, the desire to create a world-class service that gives students the conditions for learning and the resources needed to become world-class learners.

The beginning point for organizing and managing work at the faculty level is the unit descriptions of their vision and mission. Unit staff answers a series of audit questions to further clarify how they contribute to the accomplishment of the FKM mission. These questions are:

- Who are your (unit, faculty) customers and what do they want? How do you know?
- What are the short- (this year) and longer-term (2 to 3 year) goals for your (unit, faculty)?
- How is leadership defined in your (unit, faculty)?
- Do you have the right information at the right time to make effective decisions?
- Is your (unit, faculty) staff skilled and motivated to achieve what their customers want? How do you know?
- Are your (unit, faculty) processes efficient and effective? What data do you analyze to know if processes are efficient and effective?
- Where are your (unit, faculty) current results? How do you know?

The answers to these questions drive the development of unit operational definitions and faculty FIPs. Operational definitions define products and services most important to the customer, how the quality of the product or service will be measured, the specific measurement process, and the decision criteria or target level the product or service needs to perform at to meet or exceed customer requirements. Operational definitions are then used by individual staff members to determine the work that needs to be done and the level of quality that needs to be reached.

Faculty level work is organized and managed through a focus on the student performance targets. The FIP determines priorities for work improvement. Faculty level FIP's, which are designed based on a PDCA flowchart, can only choose priorities and goals from the student performance targets. The SIP structures the organization and management of work for teaching staff by describing the student performance target to be achieved, the key strategies lecturers will implement, the key implementation activities, and the key in-process or formative measures lecturers will

use to monitor student progress. Additionally, the teaching staff conducts a self-assessment of their classrooms to determine the "vital few" opportunities for improvement that will strengthen the instructional systems of the faculty. Those opportunities are also part of the FIP and are designed to improve work conditions and the efficiency and effectiveness of instructional processes.

In 2004, the faculty conducted a Strategic Planning session where among other things developed a shared decision-making process that includes a rationale, beliefs, benefits, and describes training and available support mechanisms. This approach promotes cooperation, initiative, and capitalizes on the diverse ideas, cultures, and thinking of each faculty community. Site-based teams are empowered to make decisions related to budget allocations, organizing faculty and classroom time, setting faculty goals, and staff development. Yearly evaluations and improvement cycles of the shared decision-making process is conducted through staff surveys and focus groups.
It is used as part of the FIP development process and for other major decisions that faculty staffs have determined need to be decided by this process. Faculty-level unit committees and work teams use the same process although the decision making type is a consultative model rather than the consensus type used at the faculty. Faculty decisions include those related to the design, development, and/or deployment of curriculum, instruction, and assessment programs and practices.
The interrelated communication groups and teamwork/collaboration activities reported in Figures 4.1-1–2 support communication and cooperation within and between work groups. The work teams have been designed to promote collaboration, idea and practice improvement sharing, and a sense of ownership in the significant processes that drive the performance of the organization.

Management Quality Review Meetings were conducted at frequent intervals to support innovation and agility between management teams. The purpose of the meetings is to share PDCA plans, to share progress, and to learn techniques and strategies from each other. Faculty support innovation and agility through the practice of benchmarking, which is a requirement for every faculty related to a FIP improvement goal(s).

Teamwork/ Collaboration Activity	Within Groups
Semesterly meeting of Center of Studies to facilitate programme delivery and development	All staff of Center of Study of Manufacturing, Mechanics, Aerospace and Automobile respectively
Mentor Menttee program amongst staff and senior staff	At least three times a semester that includes teaching observation and career counseling to junior staff.

Teamwork/ Collaboration Activity	Across Groups
Supervision of Student Final projects:	To seek projects to be supervise by the staff and to organize students' final year project presentations
Faculty-University relationship • Joint research • Seminar and colloquium series Branch campus joint activities	Inter-faculty meeting among *Gugusan* S & T Shah Alam & Penang campuses meeting – Academic, Board, and Staff.
Publication	Seek paper internally and externally and editing activities
Research activities and Consultation	Progress meeting to discuss activities every semester and year
Training Needs Analysis Administrative & Support	Twice a semester
ISO 2000 compliance meetings	To prepare for external auditors visit
Examination Question papers preparation	To discuss preparation of quality papers and ready for publication

Figure 4.1-2 Team Meetings within and across Groups

Skill level and experiences are managed by data analysis (staff turnover, employee satisfaction, attrition of first-year lecturers, training hours, shared decision-making, awards, etc.) and incentives. FKM will honor when excellent lecturer candidates bring experience to the position. FKM hires experienced lecturers wherever possible. FKM has a goal and incentive structure within the whole university's guidelines to motivate lecturers. These guidelines and practices, is needed since the average teaching experiences in the Faculty is as low as 1-3 years (for majority of junior staff) to 11 years (average) with few about 15% of the more experience staff of 30 years in service.

4.1b Faculty and Staff Performance Management System

Critical to the development of a high-performing staff is the evaluation process that stresses growth and inspires improvement. A faculty cross-functional team that includes head of programmes and professors evaluated the annual evaluation forms. Choice is created in the process that begins with lecturer *SKT* self-assessment of annual target and its subsequent mid –year review and the stages in which all these targets are achieved. Students' assessment of lecturers teaching performances are used for performance evaluation with all the caution since the feedback's objective is for individual staff to use it as self-improvement tool.

Administrators are evaluated on their ability to make the system (center of studies, unit, faculty) the best it can be (to optimize the system) so that the faculty mission is accomplished. The dean evaluation focuses first and foremost on the degree that the administrator's faculty meets, exceeds, or documents growth toward meeting or exceeding the student performance targets. This process begins with a self-assessment describing the FIP goals, the results or summative data, and "glows" (strengths) and "grows" (opportunities for improvement) related to each goal. The administrator is also evaluated on his or her ability to create a community of collaboration, the use of shared decision making, and the degree that student, staff, and parent satisfaction goals were achieved.. The current support staff evaluation process is being improved because a root cause analysis determined that a lack of clearly defined standards and processes were creating dissatisfaction. The improvement theory is that the development of a well-defined evaluation process that includes measurable quality standards will create the opportunity for support staff to be high-performing and be able to contribute to FKM's mission. Action steps have been developed and will be implemented next faculty year.

Staff compensation and recognition are essential components of a high-performing staff. Examples of staff incentives picked from a long list of incentives by members were:

- Lecturers and staff receive a one time RM1000 bonus in the subsequent year if one is recognized as an excellent staff for the particular year of evaluation.
- Excellent lecturers are awarded with scholarships to obtained higher qualification or granted the sabbatical leave to develop ones professionalism.
- Excellent lecturers and staff are recognized through salary scales upgrading.
- The normal letter of thanks and certificate of appreciations are awarded from time to time.

Other incentives staff value include staff training programs, opportunities to present inside and outside FKM, site visits within and outside FKM, local and national conference attendance and presentations, voluntary job transfers, tuition waivers, and study group meetings. Specifically, these incentives are aligned to help staff develop the knowledge/skills, attitudes, and motivation to achieve the student performance targets.

4.1c (1) Hiring and Career Progression

Characteristics and skills needed by potential faculty and staff are determined job descriptions. Job descriptions are continually updated to reflect the skills, knowledge, and responsibilities the position requires. FKM defines the specific behaviors new lecturers must master by the end of their second year of employment in all eleven standards. These behavior descriptions are then aligned with hiring practices, the induction program, and staff development opportunities.

4.1c (2) The needs to hire FKM staff is through the input provided by the head of each department in the faculty and in line with the FKM Strategic Planning 2006-2010. FKM academic staffs are also scheduled to take up postgraduate studies. The coordinator for training are given the empowerment to schedule staff in accordance to the staff eligibility to continue with their academic and career progression. This includes professional training so as to ensure they are eligible to apply for Professional Engineer status at the end of their training to be awarded by the Board of Engineers Malaysia. Aside from academic staff, supporting staff are also encouraged and scheduled for further training in their area of expertise. This supporting staff will be given the opportunity to upgrade their position to a higher grade technician with the experience and qualification that they have to pursue.

The data identified three major sources used to find information about openings in FKM, the FKM Internet site being one of them. At the top of the list for attracting new hires were FKM's reputation; research works available in the faculty and the facilities available. A brochure given to potential hires describes the FKM lecturer induction/mentoring program and the benefits package. For staff hired through UiTM advertisement, initial paper screenings were carried out by the faculty before they are called for a structured interview. An extensive criminal background check may be conducted if necessary to all new employees. All new employees participate in an extensive orientation so that they understand the culture of FKM and job performance expectations.

Academic staff recruitment are also been made through direct application from individuals especially from overseas applicants who has already got their PhDs and professional experience. These applicants will be vetted through the FKM recruitment committee to decide the suitability of the candidates. Due consideration for this applicants is not only their PhDs but also their contributions towards research and consultancy work that the committee will be highly focus in the selection.

4.1c (3) Currently the leadership succession process for head of programmes and centre of studies follows a consensus techniques where names of top performing staffs are discussed by the Dean among the current heads, professors and senior staff to discuss the suitability and ability to carry the Faculty's strategies. In case of disagreements which are very few, the Dean will make prerogative decision in selecting a particular candidate. These names are subsequently referred to the higher hierarchy of the University for the final approval. This technique concentrates on internal promotion and has its shortcoming for not be able to tap the fresh external talents. However it has its advantages of promoting internal experience staff that lead to higher job satisfaction. External talents are recruited to become lecturers where subsequently they will be in the position to fill up the administrative posts.

Helping staff achieve their job goals and career objectives is very important to the faculty. A comprehensive staff development plan (*Staff Training Matrix*) is available for all staff members, ***(Staff Training and Development Committee)*** including

support staff. For those who are looking to move into leadership positions within FKM, a module for new leaders training program has been designed and developed By ILQAM (Institute of Leadership & Quality Management University Teknologi MARA) to help aspiring leaders understand the leader's role in a high-performing organization. FKM is the only faculty in the university to offer an executive coaching experience (Mentor Mentee Programme) to aspiring new leaders and first-year lecturer. The external coach meets monthly (or at least three times a semester) with each leader in a confidential conversation about professional or personal issues that challenge leadership performance. The goal is to provide every opportunity for new leaders to be successful in their leadership positions where high performance is an expectation.

4.2 Faculty and Staff Learning and Motivation

4.2a (1) Faculty and Staff Education, Training, and Development

Continual improvement requires systems designed to support and encourage opportunities for employee growth and learning throughout the faculty. In order to ensure that all staff development activities support FKM's strategic plan, direct links between staff development activities and the key faculty goals are established. All staff development activities in FKM must be aligned to these key goals and the student performance targets and will be supported by the faculty. Each staff development initiative is assessed to determine the alignment between it and faculty goals. (See Figure 4.2-1)

4.2a (2) FKM has placed a greater emphasis on lecturer induction to address one of FKM's challenges described in the FKM Organizational Profile in the Mission and Vision Statement and Strategy Map. Apart from the induction Course, lecturers are assigned and encourage participating in various courses conducted by ILQAM. Each new lecturer is matched with a mentor lecturer for one year. The mentor lecturer is carefully chosen for his/her ability to mentor and has teaching experiences similar to the new lecturer's assignment.

Training Programmes offered by **ILQAM**	Courses
Basic Teaching and Learning	Basic Teaching Course
Advance Teaching and Supervision	• Teaching, Testing & Evaluation Course • Phd Research Methodology Course • Supervision Course (PhD)
Academic Management	• Academic management Course (compulsory for New Programme Heads) • Academic management Course (compulsory for New Dean , Director and deputies)
Leadership	• Effective Leadership Course • Team Building Programme

Competency Level Evaluation Course (PTK)	• Details on Examination and Tests
Convention /Forum	• Professorial Lecture • Conference on Academic leadership

Figure 4.2.1: Staff Development Initiative

At Faculty level, courses on How to prepare research application grants are being conducted by FKM URDC (Research, Development and Commercialization Unit). Lecturers are encouraged to participate external short courses and professional training to enhance their knowledge capability and professional career development. In 2006 four lecturers are assigned to undergo industrial attachment for at least three months.

4.2a(3 and 4) The current staff development process at FKM was designed and implemented after benchmarking several national organizations considered best-in-class for employee development systems. However not all the benchmarks set by the staff development committee are achieved due to budget constraints, pressure of time for staff to be released from the weekly teaching loads. However, FKM intend to pursue the rationalize of achieving the key strategic goals in developing staff potentials through the staff development activities as outlined in the Figure 4.2.2.

Ongoing faculty-level staff development needs are identified through three primary methods:

1) Yearly review of the Strategic Vision 2005 Key Goals and Strategies by FKM leadership team to analyze progress and to determine priorities for staff development activities.
2) Yearly reviews of improvement opportunities and operational definitions found in each Faculty Improvement Plan (FIP) to determine priorities for staff development activities.
3) An end-of-year review by senior leaders to identify areas for growth and improvement.

Building-level staff development activities are aligned to the goals found in each FIP. Building staff development committees design activities and expend resources based on their contribution to achieving the goals of the FIP. Significant faculty resources are provided for these activities as part of the shared decision and site-based budgeting processes.

All staff that have undergone through internal and external trainings were compulsory to complete an evaluation form to assess the value of the training. The information gathered will be used to make adjustments to future training and courses organized by the faculty.

Key Goals	Staff Development Activities (2006-2007)
21st Century Skills	▪ Upgrade of Teaching Methodology ▪ Seminar and Conference Presentation ▪ Research and Consultancy Skills
World-Class Achievement	▪ Professional Engineer Training ▪ Industrial Linkages (One Industry – One Staff)
Connected Learning Environment	▪ E-learning (Web Page Teaching Module for each academic staff)
High-Performing Staff	▪ Mentor-Mentee Program ▪ Intensive Priority Research Grants

Figure 4.2.2: Staff Development Activities (2006-2007)

4.2b Motivation and Career Development

Staff members are encouraged and motivated to be high performers by involving them in significant decisions about their work environment and in curriculum, instruction, and assessment issues. The "what" to do is clearly defined by the FKM mission, key goals, and student performance targets. Staff has considerable latitude about "how" to achieve the mission. Faculty-based decisions give professionals the ability to exercise their professionalism and work together to accomplish significant goals for all students.

Formal strategies that lecturers and staff say develops and utilizes their full potential include the ability to go to conferences and present their ideas and achievements, ILQAM training opportunities, the lecturer performance review process, benchmark visits to other faculties, and staff development activities.

Informal strategies include recognition that highlights lecturer accomplishments, personal notes verbal praise, and "pats on the back."

4.3 Faculty and Staff Well-Being and Satisfaction

4.3a (1 and 2) Work Environment

The work environment for lecturers in FKM is one of the best in the nation. FKM lecturers rate their working environment as safe and secure and clean and well

maintained (Every classroom in FKM is now a beautiful environment in which to work, is asbestos free, and meets with Safety Act requirements. Faculty administration and staff annually set priorities for work environment improvement. Most preventive maintenance is completed over the year but concentrates during the long semester break in order not to cause interruption to working and learning environments.

FKM considers safety of utmost importance; consequently, this priority is evaluated by the safety committee on a continuous basis, resulting in immediate attention to supporting the wellbeing of employees and students. Recent case is where the faculty decided to stop the activities in Casting Laboratory once it is discovered the level of hazardous materials is above the safety limit. Faculty is now in the process of introducing measures to ensure healthy working environment in this particular laboratory

4.3b (1) Faculty and Staff Support and Satisfaction

To fulfill the Faculty and staff requirements that affect well-being, satisfaction and motivation, Faculty is adopting all measures which are in consistence with practices in other government institutions and other public universities in the country.

4.3b (2) The compensation package for employees in FKM includes both salary and fringe benefits which consist of health, dental, pension scheme or contribution toward Employee's Provident Fund., disability insurance (SOCSO), sick leave, bereavement,(***Tabung Khiarat Kematian at UiTM and Faculty level***) personal leave, family medical leave, and on voluntary basis may join Hospitalization Insurance Scheme.
In addition, FKM offers staff services through the office Registrar the Counseling Assistance Programme. Staff members use this program for a broad range of personal issues and concerns, which might affect their personal life and, therefore, job performance. The consultation and referral service is free to FKM employees and their immediate family members. It is made clear to employees that they remain anonymous when using this service and that accepting treatment will not endanger their job or career.

4.3b (3 and 4) There are various formal and informal assessment methods in determining staff well-being, satisfaction and motivation. The satisfaction and dissatisfaction of staff well-being are quite commonly being voice-out in the monthly staff academic meetings. Any grouses brought during the meeting will be noted and action will be taken by the management through agreement during the meeting. News on staff promotion or any awards achieved by individual staff will also be highlighted in this meeting. Teaching survey through OMR form distributed to the students is being used to evaluate staff academic performance. The mentor-mentee program is being implemented to assist the junior lecturers in upbringing academic excellence. To gauge the satisfaction towards FKM management in terms of Productivity-Efficiency and Cohesiveness, a set of structured questionnaires are developed and

distributed to all academic staff. From this survey, it was found that the academic staffs are satisfied with the current management as reported with a grade scale of an average of 4 to 4.5 on the scale of 1-5.

Organizational performance results are discussed during the Board of Academic Meetings, Quality Management Review Meetings and also in the Head of Department Meetings. Issues pertaining to academics matters will be addressed and suggested ideas that seem practical will be officially adapt as a continuous improvement activities. This Shared Decision-Making Process is a tool to enhance staff well-being, satisfaction, and motivation. All staff well-being, satisfaction, and motivation results are aligned to the high-performing staff goal. This means that priorities and resources are focused on issues that need the most improvement in order to assure that all staff is satisfied and motivated to perform to their best potential.

5.0 ORGANISATIONAL PERFORMANCE RESULTS

Organizational performance Results are divided into four sections, namely:

- Student Learning Results
- Students- and Stakeholder-focused Results
- Budgetary, Financial and Market Results, and
- Faculty and Staff Results.

The above four sections are also presented in tabulated forms as given in tables 5.1, 5.2, 5.3 and 5.4.

5.1 Student Learning Results

The Student Performance Targets define what stakeholders consider necessary to prepare students for a future in which most of them may work at jobs that may be different from the present ones.

Student performance results below indicate progress toward mission-related factors and achievement of FKM goals. They are prepared for global challenge through various innovative approaches in the teaching and learning activities. The impartation of solid foundation in Mathematics and Sciences followed by gradual exposure and real engineering applications in later part of their study, develop student engineering capabilities. The breakdown of courses for the degree is shown in table 5.1.1

Table 5.1.1 : Course Percentage breakdown

Core	63 %
Minor	17 %
University requirement	20 %

Student Performance Target: Admission applicants with better qualifications

The trends indicate candidates with better qualifications, both from matriculation and diploma groups are applying for the degree program. While candidates for the Diploma programs enter with better SPM results compared to previous intakes.

Currently Mechanical Engineering Programs are operated at Shah Alam and Penang. The programs at Arau were phased out. The main campus at Shah Alam will be focused on programs at degree and postgraduate levels. The Penang Campus at Bukit Martajam will be focused to run programs at degree and diploma levels.
Student enrolment in Shah Alam remains fairly constant around 1500 (Fig. 5.1.1) in spite of the phasing out of the diploma programs. With new additional degree programs at degree level and master level expected to be implemented in the near future, it is expected that enrolment will increase many fold. Further more the university is targeted to be extra mega university. The total enrolment of UiTM is to be increased by two fold to two hundred thousands by 2015. This is a Herculean task which is to be shared by everyone within UiTM and other agencies.
Accordingly FKM will be very much involved with this process. It is expected to increase numbers, types and levels of programs in line with this monumental task.

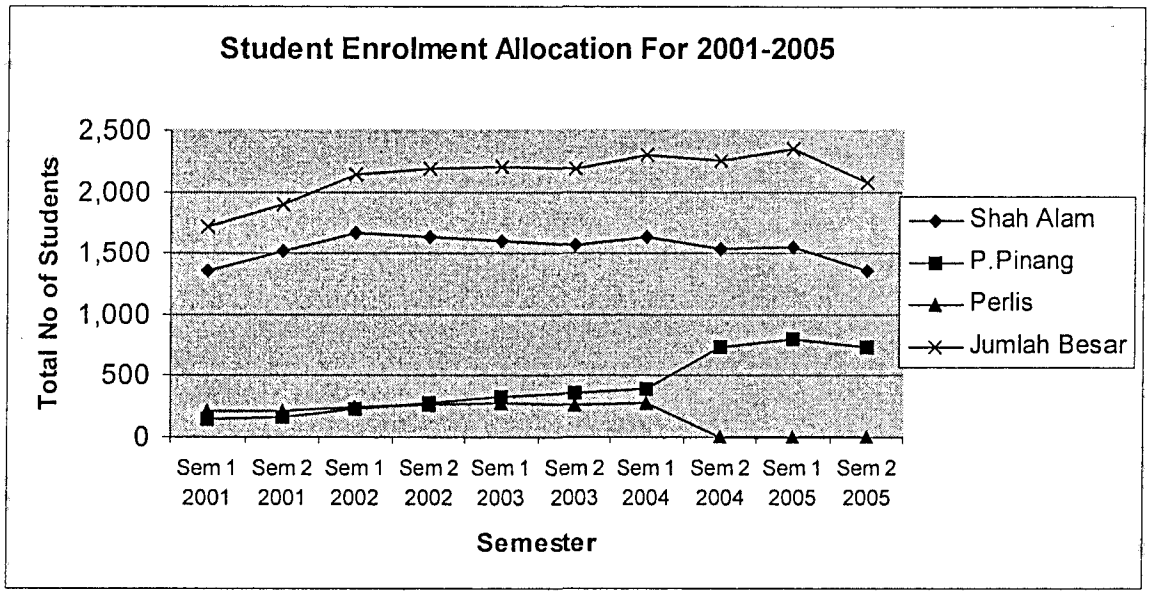

Figure 5.1.1 Student Enrolment

The immediate challenge is how to retain or improve standard with this massive numbers. The matching of quality with quantity will be an extremely challenging task. The faculty has to stay focus and acts with micro level approach to macro level student population.

Student Performance Target: Retention Rate
Failure rate per semester ranges from 8.5 % to 3.5 % for the diploma level and 8.5 % to 1 % at the degree level (Fig. 5.1.2). With proper action taken, for example, FKM provided special attention to students with CGPA of close to or less than 2. They were identified and given counseling and extra tutorial sessions. With this approach the retention rate is increased.
The faculty with keen cooperation of lecturers and support staff along with a highly committed Dean and other senior management personnel facilitated the improvement

process. Related students also played very important role in this noble aim by their keen participation.

There is however up and down in retention rate over the years, the lowest rate of failure indicated above was for Semester 1 of 2005. It is hoped this trend of decrease with years will continue.

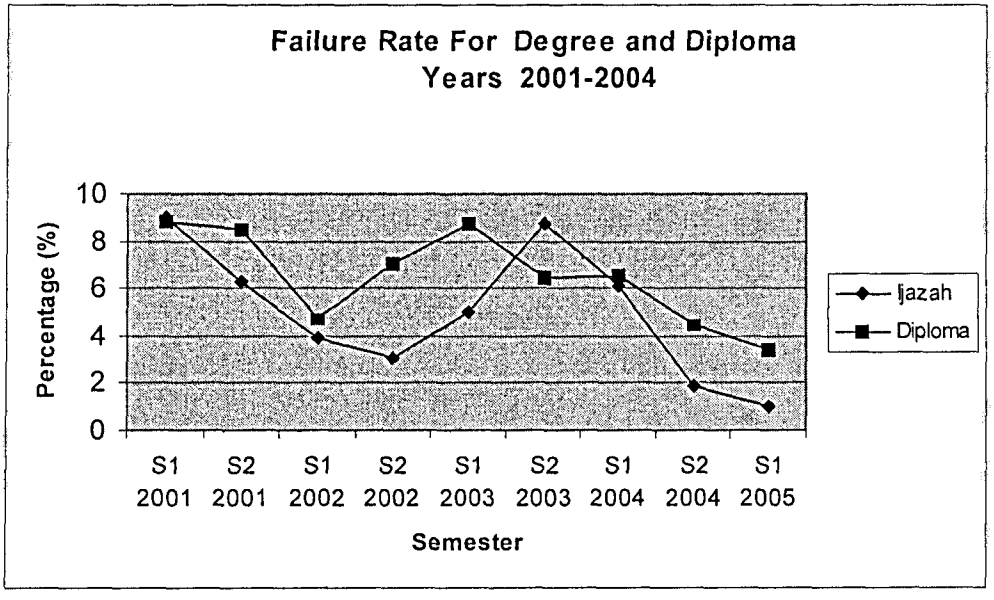

Figure 5.1.2 Student Failure Rate of Diploma and Degree Level

Student Performance Target: Students graduating within specific time.

From 2001 to 2005 the rate of Diploma Students graduating in time increased from 11 % to 32 % (Fig. 5.1.3). Results for the degree students show better outcome. The increase for students graduating in time is from 39 % to 60 %.

There was concerted effort by the faculty to improve students' CGPA. This was carried out by providing special teaching and learning workshops as well as refreshers course of specific courses to lectures teaching courses which students face difficulties. With the approach described above students are given extra attention to enhance understanding. With better understanding they will learn better.

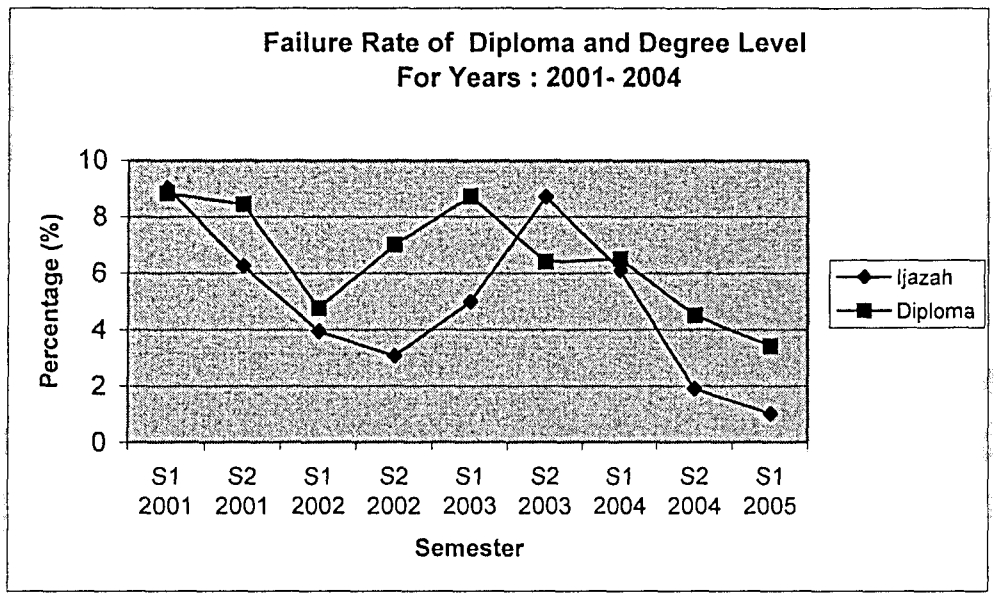

Figure 5.1.3 Rate of Diploma and Degree –Graduating Within Minimum Time

Student Performance Target: Graduation rate

As with the above two criteria there is sizeable improvement in the graduation rate of students.

Student Performance Target: Employability and Employers' Perception

Through survey carried out by the university it was shown that about 85 % of the faculty's graduates were employable within three months of graduation (Table 5.1.2)

Table 5.1.2 Percentage Distribution of Graduates Employed at Convocation Ceremony

In bracket-number of Graduates surveyed

	YEAR			
FACULTY	2002	2003	2004	2005
Mechanical	77.4	80.6	78.4	87.5 (42)
Arch. & Planning	87.8	83.8	77.4	86.9 (192)
Civil	88.3	85.9	66.9	75.0 (102)
Electrical	67.3	66.9	58.1	73.6 (81)
Computer Science	71.2	55.7	58.9	70.4 (164)
Applied Sciences	67.6	56.2	57.4	61.5 (48)
Allied Health	-	60	85.7	60.0 (12)
Sport Science	75.9	63.5	65.3	55.0 (55)

Starting salaries offered to FKM's graduate are second only to architecture graduates. FKM's graduate average starting salary is in excess of Ringgit Malaysia of one thousand and eight hundred (RM 1,800.00) (Table 5.1.4).

As far as employability status is concerned Faculty of Mechanical Engineering is the top of rank compared to other faculties in the Science and Technology group (Table 5.1.3).

Table 5.1.3 Percentage of Graduates with Permanent Jobs

I- Semester 1 intake II-Semester II intake

FACULTY	YEAR						
	I/2002	II/2002	I/2003	II/2003	I/2004	II/2004	I/2005
Mechanical	92.3	82.1	64.1	86.7	62.1	79.3	63.4
Arch. & Planning	66	66.4	67.5	56.1	63.2	49.1	56.9
Civil	67.9	65.7	60	61	43.8	38.8	50.5
Electrical	71.4	77.1	61.8	56.3	42.4	55.1	50
Allied Health	-	-	-	100	37.5	50	41.7
Computer Science	55.7	51	42.3	29.8	31.5	29.1	34.4
Art & Design	38.1	45	43.5	50	45.1	14.9	32
Applied Sciences	20	53.3	68.8	64.5	50	39.2	28.9

This type of survey is carried twice per year during the convocation ceremonies. Graduating students attending the convocations are given questionnaires containing queries relating to employability and other related items.

Table 5.1.4 Ranking of Starting Salary of Graduates

Degree	Number of Graduates	Salary (RM)	
		Median	Min
1. Architecture	35	2300	2184.29
2. Mechanical Engineering	56	1800	1712.55
3. Electrical Engineering	82	1774	1773.44
4. Quantity Survey	59	1500	1551.47
5.Information System Engineering	16	1500	1489.74

The faculty strives to improve this already commendable outcome by having more and closer interaction with the industry and organizations providing job opportunities. With respect to employers' perception the faculty is committed to equip student with attributes to match with industry requirements.

The attributes include leadership quality, communication and interpersonal skill, computer savvy, providing practical solutions through understanding of basics, team work, self-learner, conflict resolution provider and others. Communication capability is developed through **class participation** and other innovative approaches as described in section 8.

In an extra effort to provide the best learning and training the faculty has open up new avenues and concepts of student training.

The faculty has established a special arrangement with **Daimler Chrysler Malaysia** for students training. Selected students are given the opportunity to carry out **industrial training in Stuttgart, Germany.** Many more such collaborations are solicited by the faculty.

5.2 Student- and Stakeholder-Focused Results

Understanding to what degree students are satisfied with their teaching and learning process is determined by surveying **students' satisfaction**. This survey is to solicit student opinion on program outcome and faculty academic and general services. Students are satisfied with the faculty being safe and secure, making them feel welcome, offering help when needed, with rules and regulations being understood. Students work together within their own groups and within the faculty. However when cooperation involving inter faculty collaborative work, the tendency is to be university or faculty level directed. This situation can be rectified by having more joint effort output based inter-faculty projects. The projects encompass specialized input from each faculty to produce complete whole parts or equipments. This inter-faculty joint projects are continually being discussed in the *Gugusan* Science and Technology Department head Meetings.

Feedbacks were also obtained from graduates through survey carried out by the faculty. As mentioned earlier, questionnaires were distributed to graduates during graduation ceremonies. The surveys are carried out twice a year during each semester.

FKM is in the process of collating **feedbacks from the Alumni section**. On the whole it is observed that the alumni give positive review and are happy with what they experienced during their stay in UiTM.

Better understanding of guardians' and the public perception and expectation of the faculty are obtained through direct interaction during **faculty open day session** which is held at least once a year. Generally speaking parents or guardians are satisfied with the academic program carried by the faculty.

The feedback forms from students, alumni and industries are available in the files kept in the FKM Accreditation room, level 9.

Table 5.2.1 Number of Research and Consultancy Projects and Special Interest Group (SIG)(up to February 2005)

LTG – Long Term Grant STG – Short Term Grant

Activity/Year		Number				
		2001	2002	2003	2004	2005
Research	LTG	-	-	3	1	-
	STG	3	8	11	12	2
Consultancy					3	1
Centre of Excellence		-	-	-	-	-
SIG		-	-	21	12	12

Interaction between the faculty and university is reflected in joint research projects carried out between FKM and other faculties. Research and related activities is highlighted in Table 5.2.1.

Very often there will be requests from the university to carry out special projects. It is not unusual if FKM is asked to be involved in opening and closing ceremonies of special functions. Robotic displays and solid fuel rocket launchings are favorite requests.

FKM organized the National Conference on Advanced in Mechanical Engineering in 2005. This conference attracted participation from industry, local and foreign universities.

This year FKM is given the honor to organize a seminar and workshop on research finding presentation of IRPA research projects carried out by UiTM. The seminar presentation are for all IRPA projects completed in 2005/20006.
FKM also receive favorable review regarding the performance of our graduates from industry and organizations which provide employment.

Joint projects in research and product development for manufacturing are held with industry.

5.3 Budgetary, Financial, and Market Results

Along with academic performance excellence, stakeholders have identified using allotted annual budget and raised revenue efficiently and maintaining fiscal integrity as vital to long-term success. The faculty needs to establish a mission-critical priority to effectively manage financial resources without compromising the quality of education students receive.

The faculty always presented practical yearly budget requirement to UiTM. Thus far FKM faired better than most of the faculties with respect to the variance between requested and allotted yearly budget. Of course emerging new faculties, especially the Medical Faculty receive more favorable annual allocation.

By **pursuing outside funding opportunities** to complement the allocated annual budget the faculty is able to carry out stipulated planning in its aim to become world class.
Revenue generation activities include organizing specialized courses, consultancy, collaborative work and post degree programs.

As an example the **diploma course tailored to MAS** requirement was a very good example of revenue generation for the faculty. The program was fully funded by MAS. Selected students were offered scholarships and future employment with MAS.

The faculty is starting a similar tailored diploma course next semester. The **new collaborative effort is with Golden Hope** Plantation. The selected students will

follow courses related to agriculture machinery from the fourth semester. They will be absorbed into the organization work force if they choose to do so.

Currently there are very few **foreign students** studying in the faculty. Efforts have been directed to attract foreign students. Of course the faculty has to comply with UiTM ruling on this issue.

The faculty will be offering **master degree program** by course work in 2007. The faculty hope that this new program will attracts sizable numbers of candidates.

5.4 Faculty and Staff Results

Operational definitions are defined as products and services to the Customer. Operational definitions are also used by individual staff members to determine the work that needs to be done and the level of quality that needs to be reached.
. The quality of the product or service will be measured by using the specific measurement process yearly target task (YTK), and the decision criteria or target level the product or service to meet or exceed customer requirements. The YKT becomes the basis for discussions regarding the staff's job responsibilities, results the staff has achieved, areas for continuous improvement and growth, new skill and/or knowledge development, and job targets for the next year. This process creates fairness, clear expectations, and feedback about the staff's performance that is centered on his or her self-assessment and is clearly linked to actual performance.
The faculty level work is organized and managed through a focus on the staff performance targets. The faculty **indicator performance (IP)** determines priorities for work improvement which are designed based on university demand. The IP structures of the organization and management of work for teaching staff by describing the student performance target to be achieved, the key strategies planning, research, publication, consultation, teaching and social service. The faculty is also evaluated on his or her ability to create a community of collaboration to ensure parent satisfaction goals were achieved.

The activities implement by the faculty in order to increase the student performance such as students' feedback, academic advisor, short-course program and counseling session. The implementation of activities and the process or formative measures will be used to monitor student performance.

Staff compensation and recognition are essential components of a high-performing staff. Examples of staff incentives are as follows:

- Excellence in service provided – Cash incentive
- Staff promotion
- Unrecorded leave for service rendered outside normal working hours
- Maternity leave according to government directive
    - Wife – 60 days
    - Husband – 7 days
- Recognition of long service

- 10 years
- 20 years
- 25 years

Reward can be in form of certificates, souvenirs of reasonable quality and personal and group photograph with top management.

Staff Recruitment: Academic and Non academic

The faculty forwarded the yearly staff requirement to the registrar office for consideration. Prospective candidates are invited through advertisement in local or foreign media. Potential successful candidates are initially screened at the faculty level through interview. The interview also includes mock teaching presentation. For non academics the potential candidates have to display related technical skill.

After the screening at the faculty level, the potential candidates are then further scrutinized at the university level.

All new employees have to participate in an extensive orientation program to understand the government general orders. They have to pass certain set of institutional examination before being confirmed. They also have to understand the culture of organizations and job performance expectations.

Faculty staff turnover are low and manageable. The problem is in attracting qualified staff with matching salary requirement. UiTM is constrained by rules and regulations imposed by the Public Service Department.

There is no gender consideration of the recruitment exercises. Recruitment is based on merit.

Opportunities for promotion are also purely based on merit with promotion criteria set by the university.

The breakdown academic staff qualification is shown in table 5.4.1 below.

Table 5.4.1 Breakdown of Academic Staff Qualification

Academic and Professional	Total	%
PhD & Professional Engineers	6	7
PhD	9	11
Masters & Professional Engineers	9	11
Masters Degree	43	51
Bachelors Degree	7	8
Others	10	12
Total	**84**	**100**

On the whole the percentage breakdown of qualification of the faculty academic staff compares favorably with most of the faculties in the university. As that can be observed most of faculty members possess Masters Degree. The others in the table are instructors and Laboratory demonstrators which do not impose a degree as the minimum qualification. Currently four of the academic members are pursuing PhD degree. Four more are going this year. Ultimately all lecturers will possess PhD degree.

Breakdown in numbers and percentage of academic staff according to study centers is as shown in table 5.4.2.

Table 5.4.2 Academic Staff Specialization Breakdown

Centre of Study	**Number of Academic Staff**	**Percentage (%)**
Engineering Mechanics	20	24
Thermo fluids	16	19
Aerospace & Materials	17	20
Manufacturing	31	37
Total	**84**	**100**

On the whole there is fairly even distribution of specialization of faculty members. Some of **the measures of faculty and staffs result** are indicated in table 5.4. They include staff satisfaction, staff qualification, publication, research and consultancy.

6.0 PROCESS MANAGEMENT
6.1 Learning-Centered Processes

(1)
In order to address the need for a world-class education and student requirements to be satisfied with the Faculty and be enthusiastic about what is learned and how it is learned, the three key learning-centered processes that can best address those requirements have been determined to be *curriculum, instruction* and *assessment.*

The basic priorities to acquire the 21st century skills and world-class achievement have been translated into student performance targets (Figure 1).

STUDENT PERFORMANCE TARGETS
1. Students acquire the 21st century skills of: Accessing and Understanding Information, Oral and Written Communication Comprehensive Reading and Understanding, Reasoning, Problem-Solving, and Critical Thinking, life- long Learning, Spiritual Values and Human Relations and Life Skills 2. Graduating CGPA above 3.0 3. Minimum time to graduate

Figure 1

The *curriculum* defines the content to be taught in all courses of the programme, the instructional process helps lecturers teach the curriculum to students, and formative and summative assessment measures how successful the curriculum and instruction processes are in helping students to meet or exceed targets. An instructional requirement is that a focus on differentiated instruction address individual student learning profiles, developmental (readiness) levels and interests.

Our curriculum frameworks for most of the courses are on – theoretical delivery, experimental methods, case studies and/or industrial visits. The use of multi-media visual teaching aids in the classroom, group discussion, tool and experimental kits are instructional examples that promote differentiated, hands-on, active and engaged learners across all curriculum areas.

(2)
The *curriculum, instruction* and *assessment* requirements were determined by using research, professional/expert advice, employee needs and expectations, benchmarking, best practice, data analysis, student needs and expectations, stakeholders' needs and expectations, employee capability to deliver the program, and government regulations and guidelines (Ministry of Education for Higher Learning). The key requirement is that these foundational learner-centered processes create the necessary conditions for a quality of teaching and learning that achieves the student

performance targets, therefore achieving the key goals of acquiring 21st century skills and world-class achievement.

Curriculum requirements are defined in the written Curriculum Development Plan as in Figure 2. The instructional process flow chart begins by identifying standards to be taught and then assesses students' skill levels before beginning the design of the lesson/unit. Students are then brought into the process to help determine the relevance of learning this content and to suggest ways to learn the content and maintain enthusiasm. When lecturers design the lesson plan, strategies that address individual differences are incorporated into the design, such as differentiated instruction and active learning activities. The lecturers delivers the lesson, determines if students have mastered the standards and district learner statements, re-teaches those students who did not achieve the standard, provides extension activities for students who achieved mastery, and monitors student enthusiasm for learning.

Figure 3: At-Risk Process Flow Chart displays the process for designing instruction and monitoring progress for identified **at-risk (weak) students** in the efforts to make sure all students meet or exceed the student performance targets.

Assessment is the third key learning-centered process. Instruction is guided by diagnostic, formative (in-process), summative, and self-assessment. The measurement approaches is on accountability, developing tests, and formative and summative testing. Accountability means the measures what we say is important to achieve, that data be collected only if it is useful for improving programs and practice, and that flexibility and choice is built into the system.

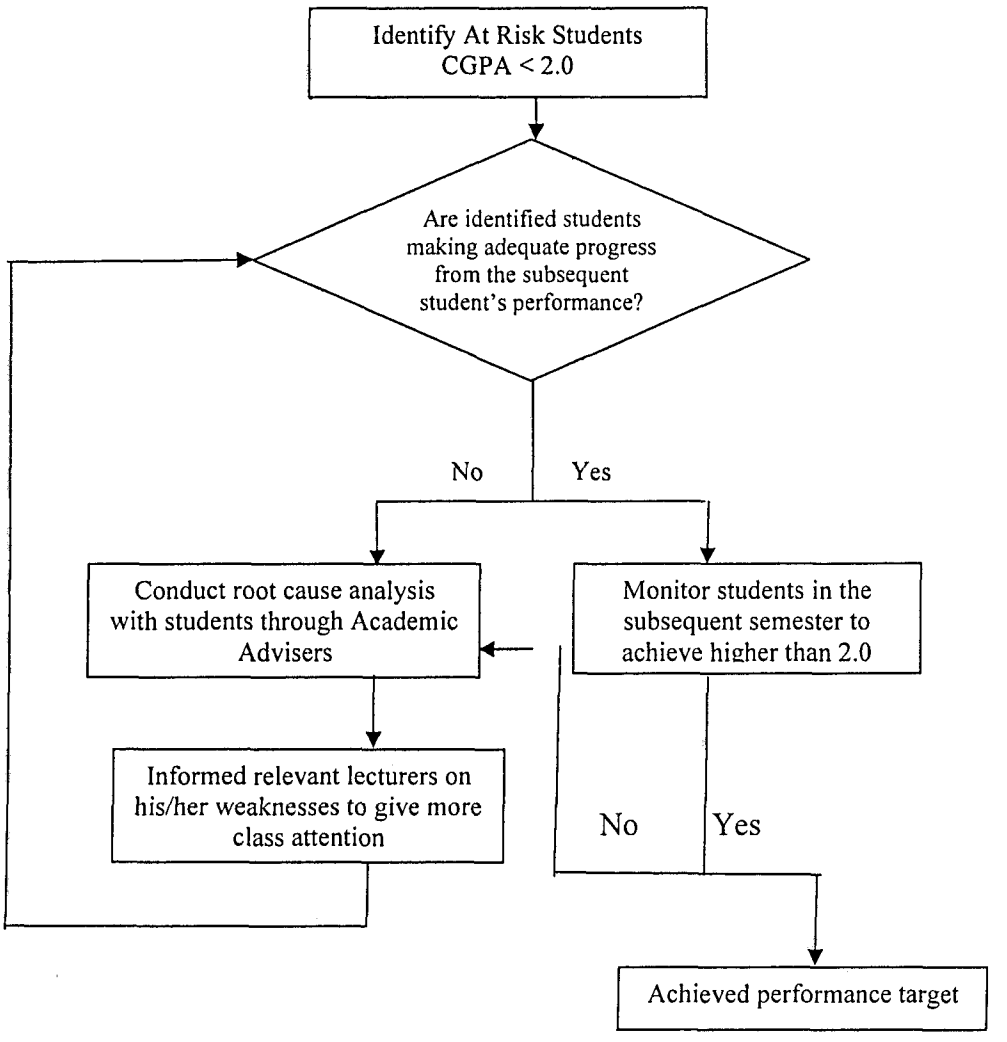

Figure 3: At-Risk Process Flow Chart

These guidelines are used in the Cross-Functional Process Map CFPM process when assessment approaches are designed and developed. An online assessment tool is one approach use for formative assessment. It is an improvement based on lecturers need to know more about how well students are progressing immediately and at the same time, reduce the data management load.

Lecturers ask students to assess instructional strategies, techniques and learning/enthusiasm through verbal feedback. Lecturers use this feedback to improve or change instructional approaches. Monthly formative assessments guide lecturer in making instructional decisions that enhance student learning.

Targeted staff development is provided for new curriculum, instruction and assessment adoptions. New lecturers receive staff development that includes academic training programme such as the Basic Teaching Course (organized by ILQAM) to address their needs to support classroom instruction. Classroom

observations and coaching are part of our mentoring program (mentor-mentee system). Best practices is shared and lecturers use ideas for learning activities from successful strategies. Academic meetings are held monthly to discuss students' differences in learning styles and rates. Administrators are involved in staff development activities designed to enhance their role as instructional leaders.

(3)
The CFPM is the main process used to design and deliver all new curriculum, instructional, and assessment programs requiring the Ministry of Education's approval. This design and delivery process have been applied to the development of a new and current programme has increased effectiveness and efficiency and results in results in a consistent and viable integration of curriculum, instruction, and assessment at all grade levels (Figure 2).

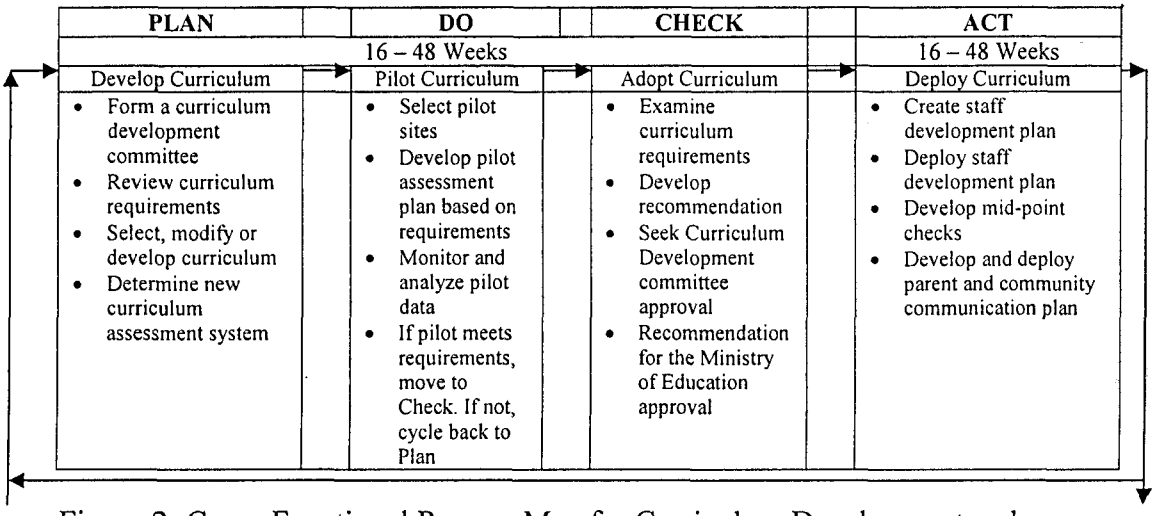

Figure 2: Cross-Functional Process Map for Curriculum Development and Deployment

An analysis of student enthusiasm and satisfaction data, grade level articulation, stakeholder needs and expectation and lecturers feedback through the Curriculum Advisory Committee is used to determine if the current curriculum, instruction, and assessment designs have the capacity for supporting students in meeting or exceeding the student performance targets. For example, the committee received lecturer satisfaction feedback that suggested there was too much curriculum content to teach in one semester. To determine what the gap was between the current and "right" amounts of curriculum content, a workshop will be conducted and addressed these issues so as not to overload the contents of the curriculum and deter students' achievement.

(4 and 5)
A systematic process for controlling and improving the CFPM is built into the design, development, decision-making and deployment steps. Process owners follow the

CFPM flow chart and all day-to-day management measures as well as longer term measures are programmed into the process (Figure 3).

The CFPM process, as is true for all processes, measures process performance based on the ability of the process to produce products (or services) that meet or exceed requirements and standards. The process owner is responsible for continuously measuring process performance and for initiating improvements to the process when performance is not meeting requirements and/or standards. A PDCA is developed if the improvement needs are incremental and benchmarking is used if a more radical improvement strategy is needed. Improvements in this, and other processes, are agenda items for interrelated communication group meetings.

Learner-centered Process	Requirements	Measures	Standards	Control Strategies
CFPM	• Ministry of Education for Higher Learning requirement • University requirement • Student requirement • Lecturers requirement	• Level of student enthusiasm for learning • Curriculum Advisory Committee satisfaction • Board of Engineers Satisfaction, EAC outcome based learning and Washington Accord compliances.	• Meets or exceeds faculty curriculum standards • Meets or exceeds student, and lecturers requirements	• CFPM flow chard checklist • Communication system checklist • CFPM evaluation checklist

Figure 3: CFPM Management Matrix

6.2 Support Processes

(1) Support Processes

Key support processes are determined to be those that support students as they become world-class learners. Key support processes include *purchasing, transportation, technology, central stores, food service, custodial*, and *maintenance services.*

(2-6)

Support services identify the key requirements their customers need and expect of the service, determine measures to assess gaps between customer needs and expectations and current levels of performance, describe the standards or targets the service should meet, and identify strategies service managers use to manage and track service performance and needed improvements (Figure 4).

Support process improvement uses the same approach described in 6.1 (4-5). At the beginning of the cycle of improvement, a meeting between the support process leader and the quality team is held to assess current performance in relation to targets established in the faculty's operational definitions. As gaps are identified, the quality

team assists the leader by facilitating the development of a PDCA improvement cycle to close the gap. This process starts with a discussion about current quality characteristics and the collection of data found in the faculty's operational definitions. These are checked for relevancy and their usefulness in helping the faculty maintain or improve services. The identified gaps in service quality are then addressed by developing a PDCA improvement cycle. Included in that discussion is the identification of benchmark organizations. Specific processes where benchmarking information can be used to create improvement ideas are identified.

The PDCA improvement cycle that is co-developed by the faculty's leader and the quality team is brought to the staff by the faculty leader and validated through discussion. Staff suggestions are recorded and suggested changes in the PDCA improvement cycle are made during the meeting. Those suggestions, if agreed to by the faculty staff, are incorporated into a revised PDCA plan.

Two to three times during the year, the Dean calls a meeting with all faculty heads of programmes and centre of studies. The purpose of the meeting is to review improvement projects, the use of PDCA improvement cycle and most importantly, the results achieved. These meetings are opportunities for each heads to share their progress and to learn from other heads. Conversations have created cross-functional cooperation and process improvements.

Support Process	Requirements	Measures	Standards	Control Strategies
Student transportation (within the University/ campus location)	• On-time arrival and delivery (punctuality) • Bus accidents	• On-time arrival is tracked frequently by route by the transportation unit staff • Bus accidents are recorded monthly • Students satisfaction survey • Benchmark other services	• Customer – staff, parent and student expectations and satisfaction • University code mandate	• Frequent monitoring of on-time arrival and accidents • Monthly monitoring of customer's satisfaction
Food service (canteen and hostel)	• Provide meals that are nutritious • Provide meals that are cost effective	• Informal meetings with students • Inspections by state and local officials • Monthly tracking of meals served and participation • Student sampling • Benchmark other Universities	• State mandate • Customer – staff, parent and student satisfaction • New product evaluation	• Daily, weekly or monthly monitoring of all measures • Resident staff and canteen operators meeting to review data
Infrastructure (university and faculty)	▪ Provide the following infrastructure: Student Hostel Sport Facilities	• Informal meetings with students • Inspections by respective	• Customer– staff, parent and student expectations and	• Daily, weekly or monthly monitoring of all measures

	Clinic Security within the campus. Faculty's services: Student Learning Area Student Excellent Center Support and organize activities for students	personnel • Customer satisfaction surveys	satisfaction	
Custodial & Maintenance		• Annual and semi-annual inspections by local officials • Staff inspection • Customer satisfaction surveys • Benchmark other universities and faculties	• State and local codes • Customer – staff, community (visitors) and student	• Monthly monitoring customer satisfaction • Weekly and quarterly monitoring measures • Staff meetings to review data

Figure 4: Support Process Flow Chart

b. Operational Planning

(1) The faculty is allocated with yearly budget funds from the university. The faculty budgets are prepared in accordance to our Strategic Planning 2006-2010. This budget also takes into accounts of the resources; staff and equipment requirements in the physical year and the subsequent year. The faculty is also allowed to request for more funds if there is a need due to change in the University's or Government policy such as an increase in the students' intake such as the latest government announcement of UiTM to increase its student population to 200,000 by the year 2015.

(2) For the Faculty of Mechanical Engineering, we are operating in two campuses; in Shah Alam as our main campus and the Penang branch. In terms of programmes offered, the Shah Alam campus will focus on degree and postgraduate programmes. The Penang branch will offer both the diploma and the degree programme. In terms of facilities, both campuses will equipped with similar laboratory equipment for teaching programmes.

7.0 STUDENT, STAKEHOLDER, AND MARKET FOCUS

7.1 Student, Stakeholder, and Market Knowledge

7.1a(1) Faculty of Mechanical Engineering (FKM) core value is student and stakeholder-driven quality. The Charting the Course leadership system begins by identifying stakeholder needs and expectations. Through the Seminar "Hala Tuju" that involved the stakeholders and alumni, feedback from stakeholder groups on their needs, expectations, and requirements are processed. The seminar is also a means to continue to verify those needs, they are shall be categorized as full-time or part-time students. The most significant expectations, and requirements to determine if they remain stable or change over time.

Student requirements and expectations are determined by their educational level backgrounds Diploma, Bachelor Degree, Master Degree, and Doctoral. Also the status of students entry, withdraw, dismiss, study leave and graduate for undergraduate degree students can be referred to Progress of Students – Flow Diagram (EM220) at IMechE Accreditation Application Form OS Issue 1: Appendix B7. It can also be seen that the graduates' entry to the program is increasing over time.

7.1a(2) In order to systematically determine stakeholder needs, expectations, and requirements, a detailed process, managed by the FKM management team and ISO team, have been established. This committee of dean, deputy deans, head of centers, head of programs, together with the Board of Academic, the External Examiner, and the Academic Advisers, has identified the following methods for determining satisfaction requirements, data collection processes, and data analysis (Table 7.1). The verification process described in Table 7.1 is our approach to understanding the needs, expectations, and requirements of each stakeholder group. Upon verifying and validating stakeholder requirements, leadership utilizes information gleaned to strategically align curriculum, instruction, information and assessment, development, decision-making, and budget systems.

The management team will have a few different channels of meeting in order to meet the staff, industry, government, parents for the purpose of obtaining feedback from them. These various channels for meetings will be mentioned again in the next section.

7.1a(3) The ISO committee, which is one of the Champion Team in FKM, meets officially at least twice a year to review staff and student surveys and data collection and analysis processes. Suggestions for improvement are received by committee members from internal staff and outsiders and used to improve the validity and reliability of survey questions and the data analysis process. All these will become the input for review and improvement in the subsequent revision of the FKM strategic planning. These changes are communicated to each staff prior to any revision. These changes have led to a robust system of data collection that gives actionable feedback

upon which to base priorities and decisions related to process improvements. In addition to the activities found in Table 7.1, the management team and senior staff are responsible for scanning local, state, and national issues and requirements that may have an immediate or long-range effect on the FKM. This information is incorporated into the subsequent FKM strategic planning process.

Student and Constituent Segment	Approach to Determining Satisfaction Requirements	Data Collection Processes	Information Requested
Community Members (including Senior Citizens and parents)	• Survey forms • during Academic Enrolment Mission (Misi Akademik)	• Distribution of forms to • prospective students and parents	Confirmation of suitable courses by the prospective candidates? Any courses that are of interest to the candidates and why?
Graduating Students	Exit Survey form for graduating students	Forms given to graduating students at the academic room student counter	Comment on Programme Outcomes? General questions about the faculty and programme? General questions about facilities?
FKM Alumni & Industries	• Survey forms for • UiTM-FKM • Alumni and Industries	• Forms sent by post to the • individual FKM Alumni • and industries • •	Comment on Programme Outcomes? Graduates knowledge competency? Capability on task given? Responsibility? Supervision and Initiative? Discipline? Self Confident? Commitment towards work? Oral Presentation capability? Writing Capability? Attendance?

Table 7.1

7.2 Student and Stakeholder Relationships and Satisfaction

7.2a(1 and 2) Student and Stakeholder Relationships

Because student- and stakeholder-driven quality is one of its core values, FKM actively seeks out relationships with stakeholder groups to identify needs and expectations, provide satisfaction and performance feedback, and elicit suggestions for improvement. Students have multiple opportunities to express their levels of satisfaction starting in the classroom with the collection of learning enthusiasm data that describes what helps them to learn, what hinders learning, and if enthusiasm for learning is growing over time. The use of quality tools such as the semester feedback form give students opportunities to share their perceptions about the teaching and learning system in the classroom. Principals conduct focus groups with students to collect data during the year and with the graduating class at the end of the year (exit survey). When the external examiner visits the faculty, he always talks to students about their satisfaction with the faculty and ideas for improving their educational experiences. Student satisfaction and enthusiasm survey data completes the comprehensive system which enables FKM to build relationships and enhance student learning. FKM staff and community shareholders can express levels of satisfaction through surveys, focus groups, the external examiner and academic adviser meetings, alumni gatherings, family day, student-staff faculty sport day, community service organization meetings attended by senior staff, regularly scheduled communication group meetings with the Board of Directors and Senate, HEA (Academic Matters) and HEP (Student Matters), IRDC, and InQKA. Satisfaction issues are addressed at the meeting if possible or shortly thereafter if research is necessary. Requests that are of an immediate or serious nature are channeled to the FKM management team (e.g any research issue to the URDC Coordinator and Deputy Dean for Quality and Research). It is his/her responsibility to follow up on the resolution of satisfaction issues and to determine if a resolution has been achieved. Together with the top faculty management, the ISO team will be in charge of addressing all the aforementioned issue. All these raising issues will be highlighted regularly in the monthly scheduled meeting.

This year, in order to increase knowledge of student, stakeholder, and market focus, surveys were segmented in order to have a better, more comprehensive understanding of our stakeholders. A survey was sent to the alumni to obtain the information with regard to their current status. With this survey then the marketability of the FKM graduates can be assessed.

Information was analyzed for trend data to assure that FKM continued to keep current with relevant programs and support services. By improving information-gathering approaches and further segmenting stakeholder base, FKM can better foster and maintain interactions and relationships with these stakeholder groups. Faculty is available for community activities five days a week during office hours. Programs to promote relationships with industries such as Golden Hope Diploma Palm Oil Mill Technology Program, Dunham Bush Bhd in research collaboration, Daimler Chrysler Internship Programme and Tyson Group Marine Technology programme are innovative collaborations. A telephone on each staff's desk connects staff to other internal departments and decreases cycle time to respond to any calls.

Students are also compulsory to undergo industrial trainings. Industries are also responding well in the needs of the university to sent students for training. At the end of the trainings,

students' performance during the training will be feedback to the faculty for further analysis and action to be taken to improve the faculty's future programme.

FKM and students learning, competing, and performing activities are very visible in FKM homepage. FKM proactively develops partnerships with National Instruments and Daimler Chrysler among others for many reasons. FKM has a close communications with accreditation boards such as IEM, BEM, and IMechE. Discussions with them help identify levels of satisfaction with FKM and address concerns if they arise. Every other year FKM intends to hosts a national seminar with other institutions and industries to boost the reputation that FKM has developed for its quality of education. FKM has just started a partnership and shared training with National Instrument. The FKM External Examiner and Advisory Committee includes members of various universities (local and oversea) as well as from local industry. Outside feedback on the student's quality are also obtained through inviting people from outside the university to judge/evaluate the students final project presentation.

The FKM is responsible for determining key stakeholder requirements. This is accomplished by formal discussions with stakeholders to define relationship objectives and key needs and expectations *(e.g the Declaration of Bukit Tinggi: Ke Arah Universiti Unggul, Bertaraf Dunia, Cemerlang, Gemilang dan Terbilang).* Through this process, each stakeholder group validates or modifies relationship objectives and/or needs and expectations. During the year, those needs and expectations are verified by the external examiner and academic advisers with students and staff during their visits.

7.2a(3) Relationship Management Process ensures stakeholder delight and complaint prevention is based upon the first point of contact being responsible for resolution. With this approach we maintain high levels of loyalty and stakeholder confidence by eliminating the need to escalate issues to higher levels in the organization. To ensure learning and improvement occur, the FKM management team conducts an analysis of each escalated complaint so that an identical complaint does not recur.

Relationship management is handled at the point of origin in an escalating process. FKM employees are encouraged to resolve stakeholder issues the moment they become evident. For example, because every staff has a telephone on his or her desk and is also accessible by e-mail, he/she is much more available to resolve any arising issues. For any matters that are related to parents, the Head of Programs will normally deal with those. If that level of resolution is not possible, the dean becomes involved in facilitating a resolution to the issue. Almost all stakeholder issues are resolved successfully at the building level. At times, issues are brought to FKM for resolution due to their legal or policy implications.

The relationship management process begins with the Ketua Pusat for all matters within the Pusat Pengajian. If necessary these can be escalated to the two Deputy Deans, Deputy Dean for Academic and Resources, and Deputy Dean for Quality and Research. They are responsible for areas of dissatisfaction. They will make every attempt to resolve each issue related to their respective responsibility. If further resolution is necessary, the issues will be brought up to the Dean of FKM. This process brings all participants involved in the issue together so that a final

resolution can be achieved. If resolution is not achieved through this process, dissatisfied stakeholders can ask to speak to the university top management.

Current processes and systems in place that help capture information from stakeholders to keep dissatisfaction from escalating include the existence of external examiner and academic advisers, Customer's Feedback Satisfaction Forms, Student's Feedback Form, Training/Industry Feedback Form, and feedback from alumni. FKM maintains a web that include the capability for the community user to send feedback of any type to FKM. The web was launched in January 2006. All complaints (through any means of communications) will be dealt with and the outcome will be informed to the person(s) that raise the issue.

7.2a(4) The senior management team and ISO team review student and stakeholder relationship management to ensure the process is meeting or exceeding standards. Based on the ISO 9001:2000 documents, the faculty has five main objectives which relate to student's performance, the academic level of the staff related to the program's requirement, student segmentations, increasing the staff professionalism through research and publication. Recently this year the FKM has successfully conducted the fourth Surveillance Audit to review the sound practices of management and to determine if the current practices are rigorous enough to meet the needs of all segmented stakeholders groups.

7.2b(1) Student and Stakeholder Satisfaction Determination
Figure 7.2 describes how FKM determines student and stakeholder satisfaction and dissatisfaction levels. Student satisfaction and enthusiasm, and staff conditions of teaching and shared decision-making survey results are used in every semester to adjust current goals or determine improvement goals for the coming terms. All surveys given to students and staff have a space for comments. One specific question asked of all survey respondents is to offer suggestions for improvement. Quantitative data are analyzed by question and scored by percentile rank.

All comments by staff and students directed to FKM are analyzed according to the qualitative analysis process. The data are used by the FKM management and ISO team to assess current performance and develop PDCA (Plan Do Check Act) improvement cycles. Survey information is part of the agenda for the Academic meetings Board, MKSP (Management Review Meeting), academic meetings, and other internal meetings. The management team and ISO team analyze staff focus group feedback.

7.2b(2) An administrative guideline in FKM is that anyone who has requested information, made comments, suggested improvements, and/or complained be contacted by telephone, almost always by telephone. Follow-up for requests and/or complaints is often delegated to the staff member with the expertise to best answer the request and/or complaint. Complaints are tracked systematically by the Committee of Customer Feedback to assure they are resolved.

Most student requests and/or complaints are resolved at the building level through any means (emails, phones, complaint boxes, etc.) or through committee structures (student council, student academic adviser, etc.).

Staff requests and/or complaints are channeled through the personnel office for resolution. Formal complaints are resolved using contract established due process procedures. Every attempt is made to resolve issues before the due process procedure is invoked. Regular meetings among FKM top management are conducted where complaints are discussed and resolved before they become university's issues. The purpose of these meetings is to share information and take preventive action so that complaints and issues do not escalate. Lecturer or support staff requests and/ or complaints are also delegated to the staff member with the expertise to best respond, but follow-up is tracked through the Administration Department.

7.2b(3) The continual improvement of all data collection processes that provide information about student and stakeholder relationships and satisfaction determination are reviewed by the First Champion Team (ISO Team) with input from the interrelated communication groups identified in Figure 7.2.

This systematic review of processes and procedures related to all aspects of data collection and analysis that track and inform improvements of relationships and satisfaction has resulted in an improvement of valid and reliable data that enhances priority determination and decision-making.

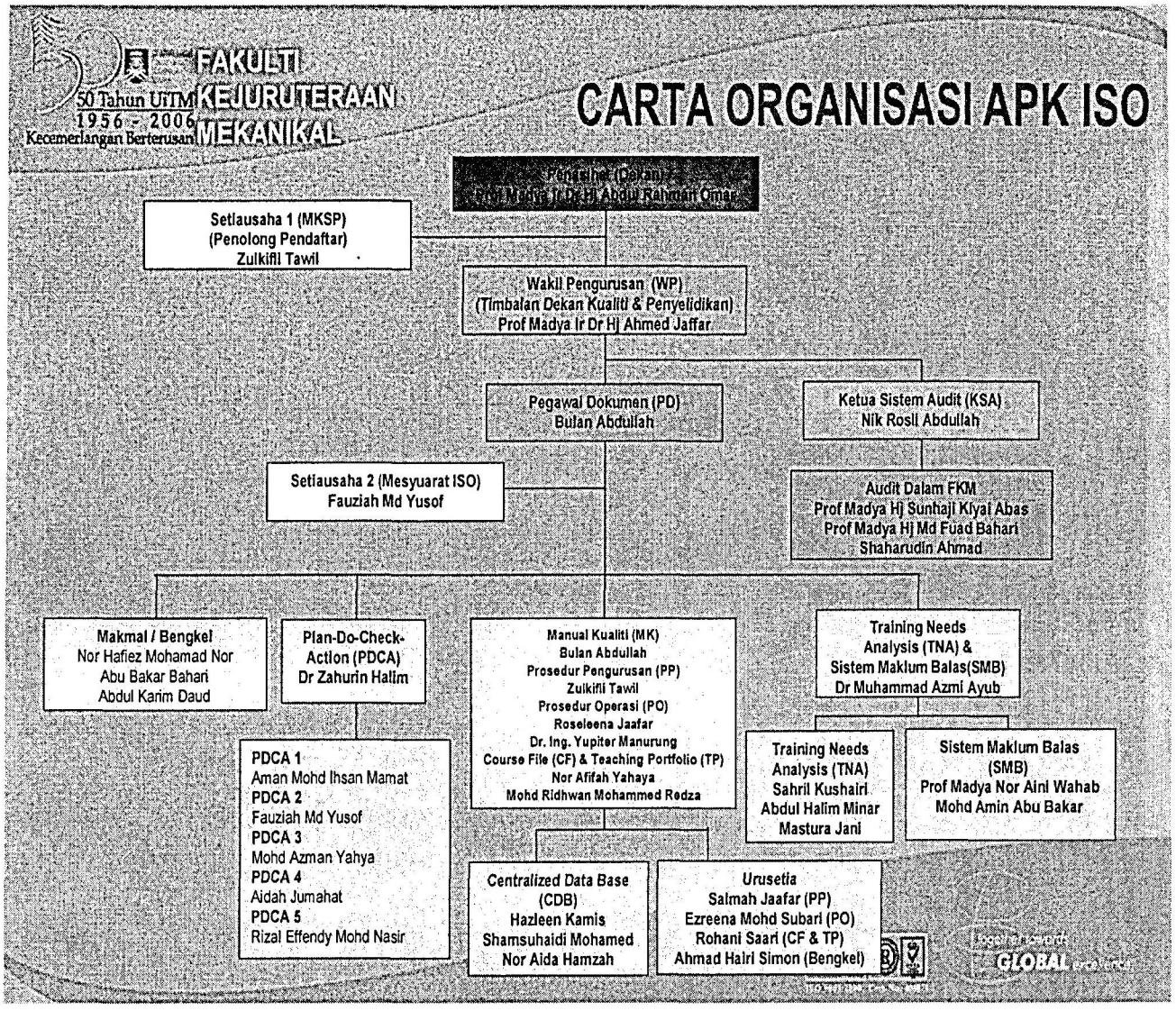

Figure 7.2: Faculty of Mechanical Engineering ISO Organizational Structure

8 .0 INNOVATIONS

8.1(a) Organizational Effectiveness Resulting from Innovations (Learning-Centered)

Student Performance

Prior to 2000, the number of student graduating on time had deteriorated to such an extent that the faculty had to innovate to improve the situation. Student performance as a result of the teaching and learning process was monitored from the aspects of test, laboratory work, assignment and final examinations. Test and assignment were coordinated and streamlined to achieve consistency and to assist students prepare more confidently. As the result, success rates were increased and students manage to complete their course on time.

Academic Advisor

To complement efforts to improve the cycle time, the Academic Advisor system was put in place and every student is assigned to a lecturer. Lecturers guide their mentees in terms of module or subject selections based on their performance of the previous semester so as to assist them to decide on subject registration and eventually to complete all subjects and graduate on time.

Student Chapters

In order to further expose our students to the competition outside the faculty, a student branch of the American Society of Heating, Refrigerating and Air-Conditioning Engineers was formed in 2000 to participate in discussions and intellectual discourses offered by the parent society when their distinguished lecturers visited this part of the world. The Malaysia chapter of ASHRAE is the sponsoring body for the formation of the UiTM student ASHRAE branch. On a similar note a student branch of the Institution of Engineers, Malaysia was formed in 2002 to enable participation of all mechanical engineering students in the numerous activities organized by IEM locally and abroad. Such exposures helped to mould the student's character and stand them well to face the job market when the time comes. The chair of the IEM student branch is also invited to attend all IEM Graduate and Students section monthly meetings and IEM headquarters and to co-organize events such as the annual Engineering Games tourney and G&S annual dinner amongst others.

Facilities

Innovations in providing facilities to students included a dedicated Engineering Library, computer and internet facilities for the post-graduate students as well as electronic notes supplemented via the i-Portal link in UiTM's main website.

Key Process	Key Indicators / Measures of Innovation	Current trend / Levels	Goal	Document File
8.1 (a) Organizational Effectiveness Results from Innovations (Learning-Centered)				
Students Performance: 1. Test 2. Laboratory work 3. Assignment 4. Final Exam	Cycle time: Percentage of number of students and CGPA on-time graduation / delayed graduation	Graduation on time: Diploma 31.2% Degree: 60.3%	Graduation on-time.	Graduation Statistics (EM110 & EM220 from 2000 – 2005)
Academic Adviser (*Penasihat Akademik*, PA) for each student.	Improved Cycle time.	All students are assigned to one PA.	Graduation on-time.	List of PA and teaching portfolio
Students Chapter for The Institution of Engineer Malaysia (IEM) and American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).	Awards won in competitions such as Student Design Competition by ASHRAE	IEM Gold Medal Award 2003 – 2005 won by FKM, UiTM.	Formation of a complete graduate.	HEP. On-going, monitored by respective societies.
Facilities: 1. Students Excellent Room 2. Library (PTAR 3) 3. E-learning (i-Portal)	1. Internet-ready cubicles. 2. Dedicated library for S&T. 3. All lecturers equipped with internet connected computer facilities.	1. Postgraduate Room at Level 5, FKM. 2. PTAR III is in place near the faculty. 3. Lecturers are in progress developing their web notes.	Up-to-date facilities and references for teaching and learning process to be in place.	Faculty handbook. UiTM website.

8.1(b) Organizational Effectiveness Resulting from Innovations (Lecturer Performance Oriented)

Publication Unit

A new faculty publication unit is set up since the breakup of the old school of engineering in 2000 into four separate faculties. The name of the new journal is Journal of Mechanical Engineering which has its own ISSN and enjoys the national level status. This standing was achieved via innovations brought about in the paper reviewing process to match that of an international journal. A list of paper reviewers both from within the faculty and identified highly reputable academia appointed by invitation was formalized. Letters and review documentations were standardized to reflect uniformity and to create a status of dignity for the Journal.

Unit for Research Development Commercialization (URDC)

Under the management of the new faculty, a research, development and commercialization unit is set up to take care of the faculty's research needs and operate the funding mechanism. Before 2000, research proposals were prepared based on group discussions and input from experienced researchers. Upon the establishment of URDC, attempts were initiated and implemented to educate young and other lecturers on techniques of preparing a successful proposal through specially organized workshops. Experienced and successful researchers acted as the resource person during these workshops. This methodological based innovation leads to tremendous increase in the number and quality of research proposals over the past five years in the Faculty of Mechanical Engineering. Another novelty developed by URDC is related to the review process of the new incoming proposals. Experts from respective disciplines within and whenever necessary, without the faculty, were listed as the Review Panel whom is provided the authority to critically appraise new proposals. A newly designed evaluation form which elaborates the strengths and weaknesses of the proposal and suggestions for amendment is used. This facilitates communication between the panel and the research team during presentation sessions after which amended proposals are re-submitted for grant application. The process proved to be useful to the lecturers especially in reinforcing crucial aspects of preparing a well-written proposal. The outcome of this innovation is evidenced by the quantity and quality of research projects in the faculty, which stands high in the overall ranking within the UiTM system and awards obtained during design and innovation competitions both locally and internationally.

Key Process	Key Indicators / Measures of Innovation	Current trend / Levels	Goal	Document File
8.1(b) Organizational Effectiveness Results from Innovations (Lecturer Performance Oriented)				
Publication Unit: An international advisory committee is being formed to replace the in-house (FKM) committee to overview the publication process and internationalization of the journal. Publication process is streamlined to match that of international journal standards.	A new board will be monitoring the process for each paper via a progress tracking form and feedback, both via email. All papers will be scrutinized by two independent panels (local & international). 2 reviewers per paper & multiplying effect; if one panel reject, the paper will be rejected).	Before this, no international panel.		
Unit for Research Development Commercialization (URDC): Review of new research project proposal. 1. A list of panel based on specific discipline is formed and endorsed by faculty. 2. A new evaluation form has been in place since February 2006.	Number of successful grants awarded.	52 IRDC Grants 9 IRPA Grants	Quantum of quality research outputs.	Progress tracking form is designed and used since then.

8.2(a) Self- Motivated/ Directed, Innovations / Inventions: (Improvement in product and services)

Innovations

1. Laboratory Work and Lectures handled separately.

Historically, the laboratory work is part of the delivery process in the lecturer's timetable. Beginning 2004 curriculum was changed to require the laboratories to be reflected as a separate subject given a 1 credit hour weightage. The purpose is to nurture the motor skills of the students so as to be able to design ones own experiment in line with Outcome Based Evaluation (OBE) method of the future. However due to time table and course structure constraints, some of these laboratory classes were running ahead of the lectures pretty much putting the cart before the horse. Hence further fine tuning is required in order to make this more effective.

2. Outcome Based Evaluation (OBE).

Recently the curriculum has been reviewed again in line with international development whereby an OBE system of evaluation is desired of all engineering faculties whose programs are accredited under a Washington Accord signatory. Malaysia under the efforts of Engineering Accreditation Council (EAC) made up of IEM and BEM is presently a provisional member of Washington Accord. The Accord is basically an agreement between signatories that the accreditation process carried out by one member country is good enough to be accepted by the others without question. Hence the qualifications so accredited are acceptable by other signatories without the need for further exercises. Effort towards outcome based evaluation shall drive the innovative spirit of lecturers to a higher level so as to be able to provide desired evidence to support those outcome statements and characteristics required of the graduates.

3. Mentor-Mentee Program

This recent development has just been implemented. As such the results are yet to be compiled. Under this programme, each junior staff is assigned a senior staff who shall guide the development of the junior staff. The success of this programme depended on the experience of the senior staff which may have both the positive or negative effects.

Methodological Processes / Systems	Results of innovation	Improvements realized out of the innovations	Document File / Remarks
8.2(a) Directed, Innovations / Inventions (Improvement in Products and Services)			
Innovations:			
1. Laboratory Work and Lectures handled separately.	Does not convey the desired outcome due to time table limitations.	More weightage assigned to acquiring motor skills.	Course file.
2. Outcome Based Evaluation (OBE).	Desired result is more innovative delivery.	To meet international benchmark required e.g. Washington Accord.	EAC file New Curriculum Course file. On-going revision of curriculum
3. Mentor-Mentee program	Mentee shares the experience of mentors.	Reassurance that younger staffs are properly guided by the senior staffs.	Staff Training FKM Dean's office

8.2(b) Self- Motivated/ Directed, Innovations / Inventions: (Other Innovations)

Self-Motivated Innovations

Among these, invitation of expertise from IEM to give career and technical talks to students is made possible via the student chapters. These are some forms of the student chapter activities which are ongoing. Career talks and sessions on meeting with future potential employers are carried out in-conjunction with the Faculty's exhibition hosted within the university.

Students Chapter for the Institution of Engineers Malaysia (IEM) and American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) are formed to further expose students and to interact with students from other varsities.

Industrial visits are arranged for the purpose of exposing students to the real-world environment and to create awareness of local industrial facilities and manufacturing processes. Students get opportunity to meet future employers and first hand experience in communicating with them. This will enhance their chance of securing a job in future.

A number of design competitions were carried out to stimulate the creative skills of students. Among this perhaps is the rocket design competition in which violation of air space was erroneously made when the model rocket went over its limit of height and exceeded 1km. Other competitions held were that for glider and robocon.

To assure the cycle time for project completion in the final year is within the target set, each final year project student is required to do a preliminary presentation of their projects midway through the project so as to address weaknesses and issues faced and to suggest methods to overcome them. Participation by faculty staff and other students is responsible for most of the useful suggestions to assist the students to move on.

Workshops were held in the faculty to identify the causes and reasons for the especially high failure rate subjects and to identify remedies for them yet not lowering the bar. Staff weaknesses and student weaknesses were separately addressed. In certain instances it is the entry requirement and general ability of the newer students to undertake independent thinking and analysis that weaknesses are noticed. One remedy would be to hold additional classes on discussion of difficult topics so as to make it more amiable to the students to grasp.

Methodological Processes / Systems	Results of innovation	Improvements realized out of the innovations	Document File / Remarks
8.2(b) Self- Motivated/ Directed, Innovations / Inventions: (Other Innovations)			
Self – Motivated Innovations: 1. Inviting expertise from IEM to give a special talk for students.	Students acquire more global views.	Networking opportunity with future employers.	EAC requirement.
2. Students Chapter for the Institution of Engineers Malaysia (IEM) and American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).	More interaction opportunities with other university students locally and abroad.	Awareness of local and regional competitions.	On-going Student Chapter activities Career advisory and technical visits involving students.
3. Industrial visits.	Awareness of local industrial facilities and manufacturing processes.	Opportunity to meet future employers and to decide on future careers.	Course file. Under special topics course file. Addresses issues of cycle time

4. Design Competitions: • Rocket • Glider • Robocon	Motivations of students' creative skills.	Inculcation of self confidence and satisfaction	File: 100-FKM (PTA-37/1) (Administration Office)
5. Implemented preliminary system to the Student Final Year Project.	Effective time management for preliminary system for student final year project.	To improve cycle time.	IMechE Accreditation Application Form OS Issue 1: page 8-11 Training Need Analysis Administrative & Support (ISO Room Level 10
6. Workshop for critical courses (high failure percentage) from 2003 onwards.	Failure rate of student for critical courses decreased.	Identified the weak links in student's performance.	

8.2(c) Self- Motivated/ Directed, Innovations / Inventions: (Organizational Effectiveness)

Poster presentations of Student's Final Year projects involving stakeholders.

Traditionally, the final year projects of students were orally presented and evaluated in front of an assembly of lecturers and fellow students. Purpose of the presentation was to provide opportunities to students to express themselves in public speaking and to be proud of their achievement with their projects. This method of evaluation is pretty much abandoned by the faculty in favour of a marketing approach which employed poster presentation. The posters prepared by the students on their projects are not only impressive but also informative for whoever stakeholder or otherwise to view and comment.

The second innovation is to hold workshop for the preparation of examination questions. This entails a limited number of staff who are setting the examination paper to discuss about the quality of the questions and to finalise on two versions, namely one for the final exam and another as standby paper. These are sealed and locked away until the final examinations. The method reduces errors in exam questions, vagueness and plagiarism and at the same time assures that the appropriate level of examination is maintained.

Methodological Processes / Systems	Results of innovation	Improvements realized out of the innovations	Document File / Remarks
8.2(c) Self- Motivated/ Directed, Innovations / Inventions: (Organizational Effectiveness)			
Innovations:			
1. Poster presentations of Students Final Year projects involving stakeholders.	More lively discussions all round.	Opportunity for outside employers to identify good candidates.	Course file.
2. Holding workshop preparation for examination questions	Better delivery time for examination questions	Fewer errors	Deans office, FKM

UNIVERSITI TEKNOLOGI MARA

FAKULTI KEJURUTERAAN MEKANIKAL

LAMPIRAN D

BALANCE SCORECARD

FAKULTI KEJURUTERAAN

MEKANIKAL

LEADERSHIP

GROUP MEMBERS:

i. PROF. DR. RAZMI CHIK **(LEADER)**

ii. PROF. MADYA IR. DR ABDUL RAHMAN OMAR

iii. PROF. MADYA IR. DR. AHMED JAFFAR

iv. DR. MUHAMMAD AZMI AYUB

Faculty of Mechanical Engineering STRATEGY REPORT

VISION

To strive in becoming an excellent Mechanical Engineering Faculty through world-class education.

MISSION

To produce graduates with deep understanding of basic engineering principles, endowed with different skills such as analytical, leadership, competitive, creative, innovative, and professionally ethical and will be successful in any services and capable of becoming entrepreneurs.

Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
STUDENTS & COMMUNITIES PERSPECTIVE	1. Environment that fosters legal and ethical behaviour: i. Students to be properly attired	100% FKM students follow the dress code	Students	Within UiTM campus	Every new semester	Dec 2005	100% abide	95%	Improved	Frequent monitoring by FKM staff
	ii. Student's feedback on curriculum and academic staff performance	Implement Survey form and OMR	FKM	EC Room & ISO Room	Twice/ year	April 2006	100% implementation	100%	On target	Continue getting and analyse feedbacks
	iii. Provide essential facilities to students	Facilities to be provided water coolers, rest areas, student center of excellence and notice board for students.	FKM student facilities	Facilities at designated areas	Twice/ year	April 2006	100% implementation	100%	On target	Provide other essential facilities

Group 1: Leadership

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INTERNAL PROCESS PERSPECTIVE	1. Action to reflect commitment to organization: I. Implementation of ISO9001:2000 Clean Audit	ISO9001:2000 Certification Zero NC	FKM	ISO Certification & documentation	Every 6 months	March 2006	ISO certification secured	Zero NC	Achieved (Clean Audit: 4 Surveillance Audit)	Maintain Quality Standard
	ii. Infrastructure for FKM Teaching & Learning facilities at S&T Complex	All Labs are equipped.	FKM	Equipment available in Labs.	Twice/ year (Budget allocation)	April 2006	100% Equipped	90%	Improved	Continuous Monitoring & Upgrading
	iii. Curriculum review of EM220 to meet BEM and Industry Requirements	EM220 Program Reviewed	FKM	FKM Administration Office	Every 5 years	April 2006	August 2006	95%	Near Completion	Continue until completion
	iv. Organizing International Conference on Advances in Mechanical Engineering	Conference on Advances in Mechanical Engineering	FKM	FKM Office	Every 2 years	April 2006	Next in 2007	100%	On Target	Start preparation in 2006

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INTERNAL PROCESS PERSPECTIVE	2. Environmental that fosters legal and ethical behaviour: I. Computers provided for lecturers	I. Computer for each lecturer. II. Computer at resource room.	FKM	i. Individual lecturer's room. ii. FKM resource room.	Every year	April 2006	I. 100% lecturers with computers ii. Resource room fully equipped	100%	Completed	Provide computers for new lecturers
	ii. Thumb print biometric system for attendance	To implement	FKM	FKM Thumb print biometric workspace	Monthly monitoring	January 2006	100% implementation	100%	Already implemented	Monitor effectiveness of the system
	iii. Setting up special committee to correct unethical behaviour of lecturers	To implement	FKM	FKM Administration room	Twice/ year	January 2006	100% implementation	100%	On going	Held meeting when necessary

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INTERNAL PROCESS PERSPECTIVE	3. Senior Leaders create a sustainable organization: I. Introduced flow diagram to monitor student progress and graduating students	A complete Student Flow Diagram	FKM	EC Accreditation Room	Every Semester	April 2006	Nov 2006	On Going	Done as scheduled	Compilation of data
	ii. Customers feedback is provided for continuous improvement.	Survey forms	FKM	EC Accreditation Room	Yearly	April 2006	April 2007	Completed for 2006	As scheduled	Review & analyze survey forms

Group 1: Leadership

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
INTERNAL PROCESS PERSPECTIVE	**4. Key factors in governance system:** i. Accountability for management's action	Scope of work for every staff	FKM Staff	Individual FKM Staff	Yearly	April 2006	100% FKM Staff	100% with Scope of Work	Completed but subject to revision	Review scope of work
	ii. Transparency in Management Operations	All matters make known to staff	FKM	Meetings, memo & Notice Board	Daily	April 2006	100% implementation	100% implemented	Done	Frequent relay of information
	iii. Independent Internal & External Audits	Implement Internal Audits & Lloyds	FKM	ISO Room	Twice/ year	April 2006	100% implementation	100% implemented	As Scheduled	Be prepared for auditing

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
HUMAN RESOURCE & INTERNAL GROWTH PERSPECTIVE	**1. Senior Leaders create an environment for performance improvement, accomplishment of strategic objectives, innovation and organizational agility:** i. SIG Groups led by senior staff/professors and come up with innovative research projects, seminars and consultancy.	No. of Seminars held	Head Center of Studies	SIG Group	Twice/ Year	April 2006	12 Seminars per Year	6 Seminar	On Going	SIG to organize more seminars
	ii. Organized IRPA workshop every year for all academic staff.	Yearly Workshop	UiTM	IRDC	Annually	Dec 2005	June 2006	Postpone	Waiting for IRDC further information	On Going

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HUMAN RESOURCE & INTERNAL GROWTH PERSPECTIVE	iii. Develop high-performing senior leaders and staff.	Staff evaluation through SKT and OMR	FKM	FKM Office	Twice/ Year	April 2006	100% Implementation	Done for ½ Year	On Target	Review End Year
	iv. Improving lecturer's computer's facility and personal needs	i. Computer provided for each lecturer ii. Computer resource room for lecturer iii. Stationery items are provided to the lecturers	FKM Lecturer	FKM	Twice per Year	April 2006	100%	100%	On Target	Maintained

Group 1: Leadership

MEASUREMENTS, ANALYSIS AND KNOWLEDGE MANAGEMENT

GROUP MEMBERS:

i. PROF. MADYA DR. RAHIM ATAN **(LEADER)**

ii. DR ING YUPITER HARANGAN PRASADA MANURUNG

iii. NOR HAFIEZ MOHAMAD NOR

iv. SHAHRIL KHUSHAIRI

v. DR THOMAS A. WARD

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
STUDENTS & COMMUNITIES PERSPECTIVE	1. Students graduating on-time	Monitor students with CGPA above 3.0	Students	Resource Room	Twice / Year	Last semester	25%	30%	Increasing	Maintain quality of teaching
	2. Students understanding on the taught courses	Result from OMR Analysis	Students	ISO Room	Twice / Year	Last semester	100%	80%	Steady	Maintain quality of teaching
	3. Developing Student Network	Students interaction with Stake Holder	Students Industry	FKM	Twice / Year	April 2006	100%	60%	Maintain	Student visit and practical training
	4. Acceptance/recognition by industry and employer	Percentage of Employment	Industry	Alumni EC Document	Yearly	Dec 2005	100%	90%	Steady	Modul 3 PPKP

Group 2: Measurement, Analysis and Knowledge Management

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
INTERNAL PROCESS PERSPECTIVE	1. Proper data management system	Number or types of data collected	FKM	Management Office	Twice / year	April 2006	100%	60%	Complete	Database system E-learning training for staff
	2. Promote excellence in teaching and research	I.Amount of research grants. II. Publication per year for each lecturer.	FKM Lecturers	URDC	Twice / year	Jan 2006	I. Grant RM1M / year II. Publication 1 / year	I. RM450K (2004) RM199.7K (2005) II. 62% (2005)	Upwards	FKM to submit more proposals under the RMK9 budget (2006)
	3. Maintaining the integrity and reliability of the data collected	Hardcopy and softcopy are made available	FKM	Management Office	Twice / year	April 2006	100%	90%	General improvement on data collecting system	Continuous improvement

Group 2: Measurement, Analysis and Knowledge Management

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
HUMAN RESOURCE & INTERNAL GROWTH PERSPECTIVE	1. Knowledgeable and esteem personality	Number paper presented and training attended	Academic and Admin Staff	Resource Room	56 hours/ year	April 2006	100%	70%	Moderate	Team Building Seminar Workshop SIG
	2. Internal growth improvement	Customer satisfaction data	FKM	Resource Room	2/ Year	31/ 7	100%	70%	Moderate	CITU Bina Ihsan Team Building

Group 2: Measurement, Analysis and Knowledge Management

STRATEGIC PLANNING

GROUP MEMBERS:

i. PROF. DR. SHAHRANI HJ. ANUAR **(LEADER)**

ii. DR ING YUPITER HARANGAN PRASADA MANURUNG

iii. NOR HAFIEZ MOHAMAD NOR

iv. SHAHRIL KHUSHAIRI

v. DR THOMAS A. WARD

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
STUDENTS & COMMUNITIES PERSPECTIVE	1.Deliver quality, flexible and innovative engineering education.	Reports from: i. External examiners ii. Academic advisors iii. Students feedback	FKM	Administration Office	Twice/year	April 2006	Satisfy requirement	Generally Comply	Satisfy	Mentor-Mentee Program & Academic Advisors
	2.Provide highly challenged intellectual educational experiences that simultaneously develop spiritual values.	Feedback from: i. External Examiners ii. Industry Feedback iii. Alumni Feedback	FKM	FKM Accreditation Room	Yearly	April 2006	100% Implementation	100% Implemented	Satisfy	Continuous Monitoring
	3.Foster a collegial, trusting, and tolerant environment to ensure high morale, productivity and efficiency.	Students academic achievement focusing on high failure rates	FKM Staff	Administration Office	Every semester	April 2006	Courses with more than 30% failure	Initial stage of implementation	On going	Monitor & Analyze
	4.Establish effective collaborative with industries and government agencies.	Number of Industrial linkages in 2006	FKM Administration Office	Administration Office	Twice / year	April 2006	3 linkages per year	4 linkages in 2006	Exceed	More industrial linkeges

Group 3: Strategic Planning

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
PERSPECTIVE	1.Allocation of resources (equipment) according to priority needs. (Cost effective & spend smart)	All labs are fully equipped for teaching and learning	FKM	Budget 2005	Yearly	Dec 2005	100% approval	85% achieved	On going	All KPP to propose budget for 2006/07

Group 3: Strategic Planning

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
INTERNAL PROCESS PERSPECTIVE	1.Offer more relevant curriculum with emphasis on multidiscipline and entrepreneurship.	Employability of graduates Industry and Alumni feedbacks	FKM	FKM Accreditation Room	Yearly	April 2006	100% employed	90% employed	Satisfactory	Review curriculum regularly
	2.Better recruitment and supervision to produce excellent graduate.	PhD holders	FKM	Administration Office	Twice/year	April 2006	60% PhD	17% PhD	Low	Aggressive recruitment
	3.Offer high quality challenging academic programmes that influence and respond to a changing society.	Introduce new engineering programmes	FKM	Strategic Planning 2006 -2010	Every 5 years (Strategic Planning)	April 2006	Two new programmes per cycle	Two new programmes (2006): i. Master in Engg Mgmt ii. Bachelor of Mech Engg (Hons) Mfg	Meets target	Look into current & future market needs

Group 3: Strategic Planning

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
HUMAN RESOURCE & INTERNAL GROWTH PERSPECTIVE	1.To develop high- performing staff.	Mentor-Mentee system	FKM	EC Room	Semester	April 2006	3 meeting / semester	3 meeting / semester	Consistent	Continuous Monitoring
	2.To maintain recruitment of high caliber Staff.	Number of PhD and Master Holder	FKM	Dean Office	Semester	April 2006	PhD, Master and Professional Engineers	PhD and Master	Consistent	TNA analysis Monitoring
	3.Establish strong team work to meet ever changing needs.	Number of staff involvement	FKM	Dean Office CITU office	Monthly	August 2006	100%	100%	Consistent	CITU Bina Ihsan Team Building
	4.To provide safe, healthy and gratifying job environment.	Students Feedbacks	FKM	Dean office	Semester	April 2005	Zero Complaint	Minor Problem	Continuous Improvement	Safety Officer Student Center

Group 3: Strategic Planning

FACULTY AND STAFF FOCUS

GROUP MEMBERS:

i. PROF. MADYA MOHD. YUSOFF MOHD **(LEADER)**

ii. PROF. MADYA ZAMRI ABDUL RAHMAN

iii. ZAINAL ABIDIN KAMARUL BAHARIN

iv. WAN MAZLINA WAN MOHAMAD

v. AMAN MOHD EHSAN MAMAT

vi. IDRIS SAAD

Faculty of Mechanical Engineering STRATEGY REPORT

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
INTERNAL PROCESS PERSPECTIVE	1. Improve Organization and Management of Work (Administration) i. Work assigned according to job specifications	Attending courses relating to job specifications	FKM	Training Needs Analysis ILQAM ISO Document	Twice / year	April 2006	100% abide	80%	Improved	More participation & initiatives
	ii. Work system for Final Year Projects, Industrial Training, Enrolment, etc.	Collection and storage of data	FKM	FKM Academic Office	Every semester	April 2006	100% implementation	80% implementation	Improved	Continuous Monitoring & Improvement
	iii. Effective communication and skills	Dissemination of information to all staff. Meeting with staff	FKM	FKM Notice Board Minutes of meetings FKM Office	Daily & Monthly	April 2006	100% implementation	90%	Improved	Continuous Monitoring & Improvement
	2.. Faculty and Staff Performance Management System i. SKT, Performance Indicators	SKT, TNA	FKM	FKM Office, Personal File	Twice / year	April 2006	100% implementation	100%	Improved	Continuous Monitoring & Improvement

FACULTY AND STAFF FOCUS

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
INTERNAL PROCESS PERSPECTIVE	3. Hiring & Career Progression i. Characteristic and skills needed	Research activities. Technical programmes organized.	FKM	SIGs, URDC	Monthly	April 2006	100% Implementation	80%	On going	Continue activities
	ii. Recruitment of staff	Highly capable and experienced staff	FKM	FKM Office	Twice / year	April 2006	100% Implementation	90%	On going	Continuous recruitment
	iii. Effective succession planning for leadership and supervisory position	Training Need Analysis	FKM	FKM Office	Yearly	Dec 2005	100% Implementation	100%	On Target	Continuous Monitoring & Improvement

FACULTY AND STAFF FOCUS

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
INTERNAL PROCESS PERSPECTIVE	4. Working environment i. Workplace improvement in laboratories	Proper personnel in-charge of laboratories and safety measurements	Head Centre of Studies	Centre of Studies	Twice / year	April 2006	100% implementation	70%	On going	Continuous improvement
	ii. Preparation for disasters and emergencies	Activities relating to safety and health	FKM	FKM Office	Annually	2005	100% implementation	No activity yet for this year	On going	Continuous improvement
	5. Support and Satisfaction i. Key factors affecting staff wellbeing, satisfaction and motivation	Awards achieved, motivational courses conducted	FKM staff	FKM Office	Annually	Dec 2005	100%	100%	Maintained	Continuous improvement
	ii. Service, benefits and policies	Compensation and benefits	FKM staff	Registrar	Yearly	April 2006	100%	100%	Maintained	Continuous Monitoring

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
INTERNAL PROCESS PERSPECTIVE	iii. Formal and informal assessment method (Organizational performance result)	SKT, Academic meeting	FKM staff	FKM Office	Monthly & Yearly	April 2006	12 meetings / year; 2 SKT evaluation/ year	100%	Maintained	Continuous implementation

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Data	Target	Actual	Trend	Initiatives
HUMAN RESOURCE & INTERNAL GROWTH PERSPECTIVE	i. Education, Training and Development i. Performance measurement for FKM Strategic Planning and knowledge, expertise and skills development	Training Need Analysis, FKM Strategic Planning	Head, Centre of Studies	FKM Office	Twice/Year	April 2006	100% PhD holder and Ir	23% - PhD Holder, 13% - Ir	On going	On going
	ii. New employee orientation	Training Need Analysis, Mentor System	Head, Centre of Studies	FKM Office	Twice/Year	April 2006	6 meetings / year	50%	Improving	Continuous monitoring & improvement
	iii. Staff and Faculty development needs	FKM Strategic Planning	Head, Centre of Studies	FKM Office	Twice/Year	April 2006	100% input from management staff	Achieved	On going	On going
	iv. Deliver Education Training	Training Need Analysis	FKM	FKM Office	Twice/Year	April 2006	100%	20%	On going	Continuous monitoring & improvement
	v. New knowledge and skills on the job	Training Need Analysis	Lecturers	SIG URDC	Twice/Year	April 2006	Each lecturer 1 research	60%	On going	Continuous monitoring & improvement

FACULTY AND STAFF FOCUS

Faculty of Mechanical Engineering STRATEGY REPORT

VISION

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Data	Target	Actual	Trend	Initiatives
HUMAN RESOURCE & INTERNAL GROWTH PERSPECTIVE	vi. Evaluation of Individual and organizational performance	SKT, Students Evaluation (OMR)	FKM Lecturers	FKM Office	Twice/Year	April 2006	100%	100%	Maintained	Continuous monitoring
	2.. Motivation and career feedback Staff motivation and career development	Training Needs Analysis	Head, Centre of studies	Centre of Studies	Twice/Year	April 2006	1 Senior Staff : 1 New Lecturer	100%	Maintained	Continuous Monitoring

FACULTY AND STAFF FOCUS

ORGANIZATIONAL PERFORMANCE RESULTS

GROUP MEMBERS:

i. DATO' PROF. IR. MOHAMED DAHALAN MOHAMED RAMLI **(LEADER)**

ii. DR. ZAHURIN HALIM

iii. JUNAIDAH RAHMAD

iv. JAMALUDDIN MAHMUD

v. NIK ROSLI ABDULLAH

vi. JURI SAEDON

vii. WAN AHMAD NAJMI WAN MOHAMED

Faculty of Mechanical Engineering STRATEGY REPORT

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
STUDENTS & COMMUNITIES PERSPECTIVE	1. To make the faculty a preferred choice of study	Number of students with good grades enrolled in the programme (CGPA > 3)	UiTM	Admission Office and Dean	Semester	Dec 2005	70% of students	60% of students	Indication of % increasing	Continuous improvement to bring up UiTM's name & image
	2. To increase students' retention rate	Number of students retained in the programme	FKM	FKM office	Semester	Dec 2005	100% retention	99% retention	Good indicator	Continuous monitoring
	3. To improve students' performance	Recruitment of lecturer with PhD & Masters qualification	Lecturers Students	FKM Office	Semester	Dec 2005	90% PhD & Masters holder	86%	Indication of % increasing	Continuous improvement
	4. To increase the employability of graduates	Number of students employed after graduation	UiTM Student Employers	Surveys	Semester	April 2006	100% employed after 6 months	80% employed after 6 months	Indication of % increasing	Continuously improve on the curriculum content and delivery

ORGANIZATIONAL PERFORMANCE RESULTS

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
STUDENTS & COMMUNITIES PERSPECTIVE	5. To develop students' engineering attributes	i. Employability ii. Position Held in Work Place iii. Industrial related activities	FKM Students Employers	FKM	Semester	April 2006	i. 100% employed after 6 months graduation ii. Engineer or better position iii. Engineering	i. 95% (estimation) ii. Diploma: Assistant Engineer Degree: Engineer & better iii. Engineering	Successful	Continuously improve curriculum content and delivery
	6. Activate faculty - community relationship	i. Visits and interaction with local and outside communities. ii. Number of open day held. iii. Organize technical programmes for industries/public.	FKM	FKM	Yearly	April 2006	One activity for each category	i. Orphanage Home ii. Misi Akademik iii. Welding Workshop	Successful	Promote faculty community service activity

ORGANIZATIONAL PERFORMANCE RESULTS

Faculty of Mechanical Engineering STRATEGY REPORT

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
PERSPECTIVE	1. To solicit adequate yearly budget to the various centre of studies	Annual budget allocation	FKM	Dean Head Centre of Studies	Yearly	Dec 2005	Budget uniformly distributed and according to priorities	Fairly distributed	Maintained	To consider the needs of the curriculum
	2. To generate more contract researches	i. Number of grants and value of funds procured ii. Number of lecturers involved	FKM	Dean Head Centre of Studies Lecturers	Yearly	Dec 2005	i. RM 3 million ii.100% lecturers	i. RM 1.5 million ii. 62% lecturers	Increasing	Aggressive participation from lecturers

ORGANIZATIONAL PERFORMANCE RESULTS

Faculty of Mechanical Engineering STRATEGY REPORT

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
PERSPECTIVE	3. To run more revenue by generating collaborative programs	Number of programs and revenue generated	FKM Outside Organization	Dean Head Centre of Studies	Continuous	Dec 2005	Once in every 4 years	Once in every 6 years	Slow progress	Aggressive promotion of faculty new programmes
	4. To generate more consultancy projects	Amount of grants received by FKM	FKM Outside Organization	URDC - FKM	Yearly	Dec 2005	RM500K	RM1.3M	Increase	Promote FKM's directory of expertise

ORGANIZATIONAL PERFORMANCE RESULTS

Faculty of Mechanical Engineering STRATEGY REPORT

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
INTERNAL PROCESS PERSPECTIVE	1. To *improve* Faculty Management and Administrative Capability	*i.* ISO 9001:2001 Certification Zero NC	FKM UiTM	ISO Certification & Documentation	Twice / year	April 2006	ISO Certification Secured	Zero NC	Maintained	Maintain Quality Standard
	2. To enhance teaching and learning capabilities	i. Dean's List ii. Vice Chancellor's Award iii. Employability	FKM UiTM	Deputy Dean (Resource & Student)	Semester	April 2006	i. 25% ii. 1% iii. 100%	i. 34% ii. 0% iii. 90%	Maintained	Continuous updating & upgrading of facilities
	3. To improve students' study ambience	Students' satisfaction through feed-back, program outcome, faculty academic facilities, faculty academic services	FKM UiTM	Classroom, laboratory and external environment	Continuous	April 2006	100% satisfaction	Positive sign	Maintained	Student feedback & action taken
	4. To improve staff well-being	*Staffs' satisfaction: faculty* facilities, internal relationship, award and recognition	FKM	Dean	Continuous	April 2006	100% satisfaction	Positive response	Improving	Staff feedback & action taken

ORGANIZATIONAL PERFORMANCE RESULTS

Faculty of Mechanical Engineering STRATEGY REPORT

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
INTERNAL PROCESS PERSPECTIVE	5. Transparency in administration by *improving* faculty inter and intra communication	*Number of complaints*	*FKM*	*FKM*	*Monthly*	April 2006	Zero complaint	Minor complaints	*Maintained*	To initiate more *meetings* with students

ORGANIZATIONAL PERFORMANCE RESULTS

Faculty of Mechanical Engineering STRATEGY REPORT

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
HUMAN RESOURCE & INTERNAL GROWTH PERSPECTIVE	1. Increase research & consultancy capability	i. No. of research projects ii. No. of consultancy projects	Lecturers FKM *UiTM*	Dean Head Centre of Studies SIGs	Every Semester	Dec 2005	i.5 projects per year ii. 2 projects per year	i. 12 projects per year ii. 4 projects per year	Increasing	Encourage extensive research activities through workshops generating *project titles*
	2. Update and upgrade support and technical staff competency	No. of courses attended	Support and Technical Staff *FKM*	Training Needs Analysis, ISO Room	Yearly	April 2006	To follow schedule	90%	Maintained	Upgrade staff competency by proper planning
	3. To upgrade academic staff qualification	Percentage of PhD, master holders & Professional qualification	FKM UiTM	Deputy VC (Academic) Dean	Yearly	Nov 2005	90%	86%	Increasing	Continuous Encouragemen t

ORGANIZATIONAL PERFORMANCE RESULTS

Faculty of Mechanical Engineering STRATEGY REPORT

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
HUMAN RESOURCE & INTERNAL GROWTH PERSPECTIVE	5. To maintain lecturer student ratio	Lecturer student ratio set by EAC	FKM	PDCA 2 ISO room	Yearly	Nov 2005	1: 15	1:10	Improving	Proper human resource planning

ORGANIZATIONAL PERFORMANCE RESULTS

PROCESS MANAGEMENT

GROUP MEMBERS:

i. PROF. MADYA DR. AHMAD AZLAN MAT ISA **(LEADER)**

ii. PROF. MADYA IR. LOO HUCK SOO

iii. ABDUL HALIM MINAR

iv. ZULKIFLI TAWIL

v. ROSELEENA JAAFAR

vi. YAKUB MD. TAIB

vii. BULAN ABDULLAH

Faculty of Mechanical Engineering STRATEGY REPORT

VISION

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
STUDENTS & COMMUNITIES PERSPECTIVE	1. Learning-Centered Process i.Enhance student's learning process by providing good facilities in UiTM & FKM	Satisfaction of students in the provision of services such as student's learning area, library, etc.	Students Lecturers	OMR Surveys	Yearly	Dec 2005	100% Satisfaction	80% Satisfaction	Maintained	Continuous improvement
	ii. Improve student's performance by monitoring student's progress every semester	Student Advisor system	Students Lecturers	Academic Advisors Files	Every Semester	Dec 2005	Every semester	100% implementation	Maintained	Continuous improvement & monitoring
	iii. Improve student's performance by providing good teaching delivery process and assessment	Instruction method & assessment	Lecturers	Teaching Portfolio & Course file (ISO Room)	Every semester	April 2006	To complete & update all files	94%	Improving	Continuous improvement & monitoring

Faculty of Mechanical Engineering STRATEGY REPORT

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
STUDENTS & COMMUNITIES PERSPECTIVE	iv. Student academic learning rates, capability, performance, achievements, etc.	Faculty's Objective Quality (ISO). Percentage of students achieving CGPA more than 3.	FKM	ISO documents	Every 6 months	April 2006	25% of students	Exceed 25%	Up	Continuous Monitoring & Improvement

Group 6: Process Management

Faculty of Mechanical Engineering STRATEGY REPORT

VISION

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
FINANCIAL PERSPECTIVE	**1. Learning-Centered Process** To equipped the laboratories/workshops with up to date equipment, machineries & software	Procurement of equipment and software for teaching purposes.	FKM & UiTM	Yearly budget	Annually	Dec 2005	Yearly	100% purchased	Maintained	Continuous improvement

Group 6: Process Management

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
INTERNAL PROCESS PERSPECTIVE	*1.Curriculum* i. Enhance student's learning process by reviewing current curriculum structure to meet *industry needs so as to make* students more viable.	Review curriculum to meet industrial needs and world class university standard	FKM	External examiner & Academic Advisor's report, FKM Office	Yearly	Dec 2005	Review yearly	Review yearly	Maintained	Continuous monitoring & improvement
	ii. Viability of the programme (student performance measures)	Good feedback from surveys and questionnaires	FKM	Survey feedback and analysis report	Yearly	April 2006	Yearly	First cycle	Maintained	Continuous practice
	iii. Improve lecturers instruction methods	Number of multi-media visual teaching aid, and On-line e-learning involvement	Lecturers	FKM ISO Room	Every semester	April 2006	20% of the lecturers involve in E-Learning	2% First stage	Increasing	Aggressively push lecturers

Group 6: Process Management

Faculty of Mechanical Engineering STRATEGY REPORT

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
HUMAN RESOURCE & INTERNAL GROWTH PERSPECTIVE	**1.Staff Professional Development** i. Staff personal development & knowledge enhancement	Provide training and development programme on courses such basic teaching course, research areas, etc.	FKM staff	Schedule from ILQAM /External organizations / Internal programmes	Twice / Year	April 2006	Minimum Twice a Year	80%	On going	Personal commitment
	ii. Staff teaching skills and techniques	Lecturers performance (Analysis on OMR)	Lecturers	FKM ISO Room	Every Semester	April 2006	80% of lecturers having performance 80% - 100%	75% of lecturers having performance 80% - 100%	Not achieved yet	Continuous monitoring of OMR

Group 6: Process Management

STUDENT, STAKEHOLDER AND MARKET FOCUS

GROUP MEMBERS:

i. PROF. MADYA IR. DR. AHMAD SUHAIMI ABDUL RAHIM **(LEADER)**

ii. PROF. MADYA IR. MOHD KHALID HASSAN

iii. PROF. MADYA DR. IR. WAHYU KUNTJORO

iv. PROF. MADYA DR. WIRACHMAN WISNOE

v. PROF. MADYA IR. MOHD. SHIF ISMAIL

vi. NOR HAYATI SAAD

Faculty of Mechanical Engineering STRATEGY REPORT

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
STUDENTS & COMMUNITIES PERSPECTIVE	1.To ensure the satisfaction of students & industries.	Indication of satisfaction through survey and market feedback	FKM	IMechE Accreditation Room Application: Form OS Issue 1: Appendix B3 Feedback forms: Exit Survey, Alumni and Industry	Yearly	April 2006	100% satisfaction	80% satisfaction	First implementation	Continue yearly survey
	2.To collaborate with industries.	Number of collaboration with industries.	Students & Industries	IMechE Accreditation Room Application: Form OS Issue 1: Appendix B4	Yearly	April 2006	1 industry per year	4 in 2006 (Daimler Chrysler, Thyssen Crupp, Golden Hope, Nuriveet)	Exceed	More collaboration with industries
	3.To maintain and improve the academic quality.	Positive feedback from accreditation bodies	FKM	Accreditation Room (Visit Report from professional bodies) EAC Accreditation Application (Full Time): Appendix L File:100-FKM (PTA 35/9)	Every 5 years	2004	All programs accredited	EM220	On going	Ready for next accreditation (11-12 Sep., 18-21 Sep. 2006)

Group 7: Students, Stakeholder & Market Focus

Faculty of Mechanical Engineering STRATEGY REPORT

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
INTERNAL PROCESS PERSPECTIVE	1.To ensure that the faculty can provide education for the current and future needs	Employability of graduates, Feedback from industries	FKM, government, industries	FKM Accreditation Room	Yearly	April 2006	100% employed	90% employed	Satisfactory	Continue yearly survey
	2.To address complaints and finding the solution	Reduction number of complaints and identical complaints do not reoccur.	FKM	FKM Accreditation Room, External Examiners' report, customers' feedback	Twice/ year	April 2006	Reduce number of complaints	Less and positive complaints	Satisfactory	Receive and analyze complaints

Group 7: Students, Stakeholder & Market Focus

Faculty of Mechanical Engineering **STRATEGY REPORT**

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
HUMAN RESOURCE & INTERNAL GROWTH PERSPECTIVE	1.To increase staff professionalism for ensuring customer satisfaction	Number of Professional Engineers, member of professional bodies, number PhD and Master holders,	FKM, Ministry of Higher Education (MOHE), Board of Engineers	Accreditation room, ISO room	Twice/ year	April 2006	100 % staffs	90% PhD and Master holders, 15% Professional engineers	Increase	Promote staff to become member of professional bodies

Group 7: Students, Stakeholder & Market Focus

INNOVATIONS

GROUP MEMBERS:

i. DATUK PROF. IR. DR. OW CHEE SHENG **(LEADER)**

ii. PROF. MADYA DR. DARIUS GNANARAJ SOLOMON

iii. PROF. MADYA NOR AINI WAHAB

iv. VALLIYAPPAN DAVID A/L NATARAJAN

v. RAMZYZAN RAMLY

vi. NOR AFIFAH YAHAYA

vii. AZLIN AZMI

Faculty of Mechanical Engineering STRATEGY REPORT

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
STUDENTS & COMMUNITIES PERSPECTIVE	1.Graduating on-time.	Percentage of students graduating on time	Students	Dean's Office	Twice / year	April 2006	100%	74%	Maintained	Continuous monitoring & improvement
	2.Formation of a complete graduate competency	Number of student activities with professional societies / bodies	Students	Deputy Dean (Resource & Student)	Every semester	April 2006	One activity per semester (Mega Day, Academic Excellence Award)	100%	Upward	Continuous effort on activities to be organized
	3.Developing student network.	Student interaction with industry	Students Industry	FKM HEP	Twice / year	April 2006	Two activities per year (Seminars & career talks with industries)	100%	Upward	Continuous effort on activities to be organized

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
STUDENTS & COMMUNITIES PERSPECTIVE	4.Inculcating appropriate students attitude and creativity	Number of awards achieved	Students	FKM	Yearly	Dec 2005	Two awards / year	More than two awards / year (Pameran Persidangan Pendidikan Fakulti, UiTM & Geneva Award, MTE, ITEX)	Successful	Continuous aggressive participation in competitions.

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
INTERNAL PROCESS PERSPECTIVE	1.Up-to-date facilities and references for teaching and learning process to be in place.	All lecturer's room equipped with Internet facilities	FKM	Individual Academic staff rooms	Twice / year	April 2006	100%	100%	Completed	Continuous upgrading
	2.Fostering excellence in research, scholarship and expansion of knowledge.	Number of research grants, journal & publication	FKM	URDC FKM	Twice / year	Nov 2005	One publication per academic staff	62%	Upwards	Continuous effort & involvement
	3.Develop more relevant curriculum with emphasis on Outcome Based Evaluation.	Stakeholders' feedback	External Academic Advisor	FKM	Once every 5 years	April 2006	Every 5 Years	On Target	On Target	Continuous improvement
	4.Maintaining the integrity of examination system.	Follow ISO procedure & reduce problems	FKM	Deputy Dean (Resource & Student)	Every semester	April 2006	100% comply & no problems	100% comply & minor problem	Maintained	Continuous improvement

Group 8: Innovations

Faculty of Mechanical Engineering STRATEGY REPORT

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Perspective	Objective	Measurement	Stakeholder	Source	Frequency	Recent Date	Target	Actual	Trend	Initiatives
HUMAN RESOURCE & INTERNAL GROWTH PERSPECTIVE	1.Establish strong team work able to adopt to changes.	Number of academic staff involvement	FKM	FKM	Yearly	Jan 2006	100%	80%	Not satisfactory	To reward accordingly

Group 8: Innovations

UNIVERSITI TEKNOLOGI MARA

FAKULTI KEJURUTERAAN MEKANIKAL

LAMPIRAN E

AKTIVITI BERGAMBAR

Trio off to Germany

By FLORENCE A.SAMY
educate@thestar.com.my

Jess (left) talking to Mohd Noor, Mohd Ridzu and Mohd Rahimi as Prof Ibrahim (third from right) and Norlida (rig look on.

THE chance to do an internship overseas is something too good to be missed for Mohd Rahimi Yaacob.

The 23-year-old mechanical engineering student is among three from Universiti Teknologi Mara (UiTM) who will be doing a four-month internship at DaimlerChrysler AG in Stuttgart, Germany.

Mohd Rahimi, Mohd Ridzuan Saari and Mohd Noor Firdaus Ismail will be leaving for Germany on Thursday.

"I am excited as I have never been overseas. We have already undergone a two-month intensive course in German.

"It's going to be an eye-opener for us to learn how they do things there," Mohd Rahimi said when met at the memorandum signing ceremony between the university and a few local and foreign companies recently.

Mohd Ridzuan said internships were important as it gave students a chance to gain some experience before entering the working world.

Mohd Noor said they had to undergo a two-month training at DaimlerChrysler locally before they were short-listed for the stint in Germany.

The students also had a chance to meet German ambassador Herbert Jess.

Jess said he was pleased to see an exchange in the academic field between Malaysia and Germany, which he felt was still inadequate.

He commended Malaysia for sending their students to non-English speaking countries to gain knowledge and education.

"The German education system is a combination of theory and practical training.

"We have between 700 and 800 Malaysian students in Germany, which is more than a 100% increase compared with two or three years ago," he added.

UiTM vice-chancellor Prof Datuk Seri Dr Ibrahim Abu Shah said the students were the first batch from the university to do their internships with DaimlerChrysler in Germany.

"To compete in the global arena, we must be prepared to take risks, to tread new paths and have local and international collaborations with foreign organisations and industries," he added.

DaimlerChrysler Malaysia Sdn Bhd human resource senior manager Norlida Shariff said this was the first time that they were sponsoring local students for an internship in Germany.

"We sent five UiTM students to our training centre in Pekan before selecting the three," she said.

On Wednesday, UiTM signed a memorandum of agreement (MoA) with Golden Hope Plantations Bhd and a memorandum of understanding (MoU) with three other companies - Thyssenkrupp Marine Systems, Nurivest CNC Mechanization Sdn Bhd and Shimadzu (Asia Pacific) Pte Ltd.

"The MoA will enable the Golden Hope Academy to conduct UiTM's diploma in mechanical engineering option in palm oil milling technology at the campus on Carey Island," said Prof Ibrahim.

The first batch of 22 students, he said, would be graduating this semester while another 30 would undergo the programme in July.

"Golden Hope Plantations also awards a one-year RM5,000 scholarship for students and guarantees them jobs upon graduation," he added.

Prof Ibrahim said the MoU with Nurivest would pave the way for the setting up of a UiTM-Nurivest e-mechanisation centre, which would provide training and research facilities for the manufacturing and process industries, including those involved with robotic technology and automated production.

The memorandum with Shimadzu will lead to the setting up of a material research and consultation centre at UiTM, which include testing and inspection.

This will provide post-graduate students, academics and researchers access to high-e facilities.

Prof Ibrahim said the MoU with Thyssenkrupp Marine Systems would promote joint research with UiTM and the Technical University Hamburg, which is Thyssenkrupp's partner university.

"Thyssenkrupp has also provided placements for our five mechanical engineering students and they will be leaving for their practical training in Hamburg in June."

Thyssenkrupp senior vice president Winfried Dreger said so far, 103 Malaysian students had undergone internships at the firm's home base.

The vice-chancellor also said they were a sending their professors to Germany to further promote education exchange.

"It is compulsory to learn a third languag at UiTM and German is an important language for us," he added.

KOSMO Khamis 3 Mac 2007

Peluang belajar kecanggihan dunia Mercedes di Jerman

SHAH ALAM - "Bagai bulan jatuh ke riba."

Itulah kesimpulan perasaan tiga pelajar Fakulti Kejuruteraan Mekanikal Universiti Teknologi Mara (UiTM), Shah Alam yang terpilih ke Jerman pada 15 Mac nanti.

Mereka akan menjalani latihan industri di syarikat pengeluar kereta mewah DaimlerChrysler AG selama empat bulan bagi mendalami selok belok bidang kejuruteraan automotif Jerman.

Pemilihan mereka dibuat berdasarkan kecemerlangan akademik serta lulus beberapa ujian yang telah dijalankan oleh syarikat tersebut.

Di samping itu, pemilihan syarikat tersebut merupakan salah satu agenda UiTM bagi mendedahkan pelajarnya ke peringkat tertinggi dunia automotif.

Seorang pelajar tersebut, Mohd. Rahimi Yaacob, 23, memberitahu, beliau sememangnya berkerja keras memberikan yang terbaik kerana tidak ingin melepaskan peluang keemasan itu.

"Memang bertuah sebab diberi peluang dari awal hingga akhir membuat sendiri sambil dibantu penyelia dalam pembuatan Mercedes S Class," katanya.

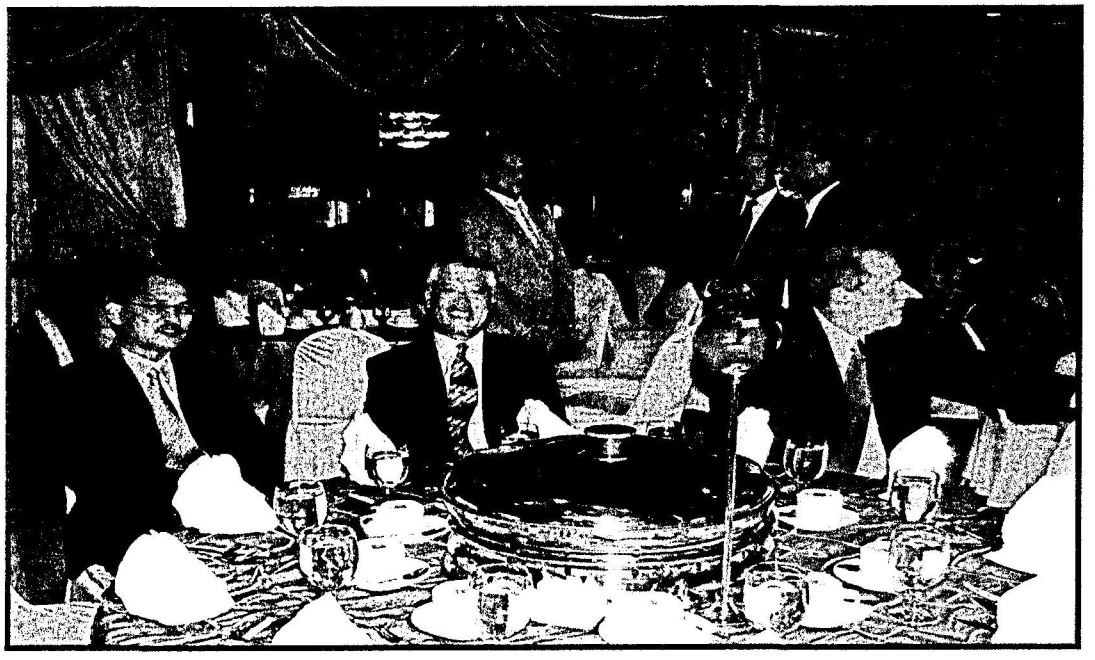
Berbeza pula dengan Mohd. Noor Firdaus Ismail dan Mohd. Ridzuan Saari yang mana langsung tidak menyangka terpilih.

"Ini satu tanggungjawab amat besar dan paling penting kami perlu mantapkan lagi penguasaan bahasa Jerman bagi memudahkan komunikasi di sana nanti," kata Mohd. Noor.

Mereka ditemui ketika sidang media pada majlis menandatangani perjanjian UiTM dan DaimlerChrysler AG di sini semalam.

Majlis turut dihadiri Duta Jerman ke Malaysia, Herbert Jess dan Naib Canselor UiTM, Profesor Datuk Dr. Ibrahim Abu Shah.

JESS mengucapkan tahniah kepada Mohd. Ridzuan sambil disaksikan oleh Mohd. Noor Firdaus (tiga dari kiri) dan Mohd. Rahimi (dua dari kanan) di Shah Alam semalam.



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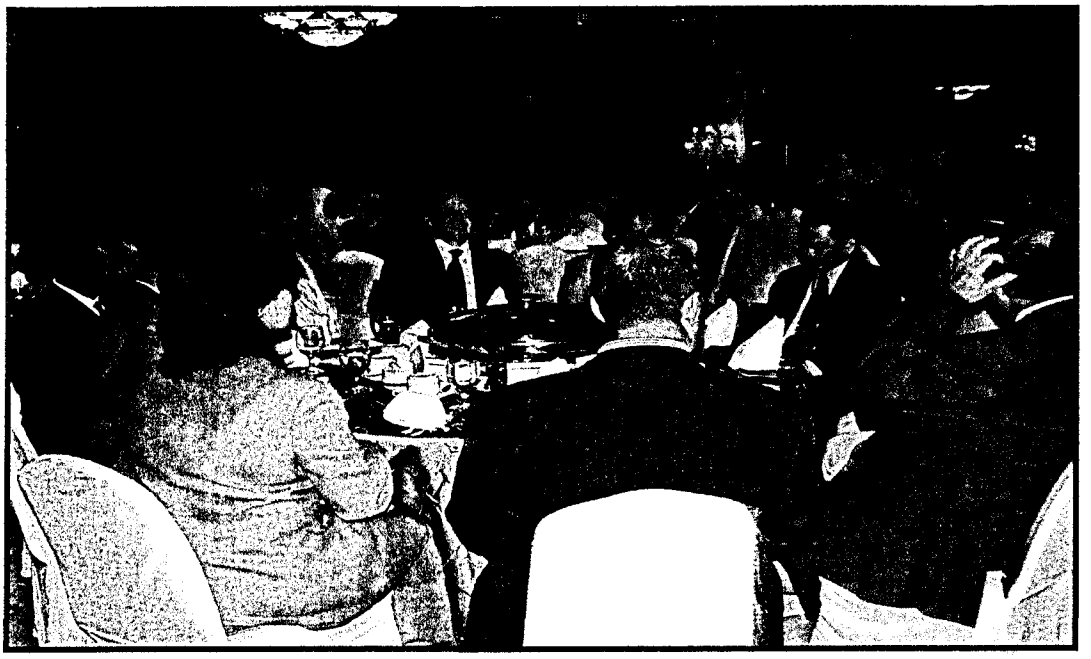

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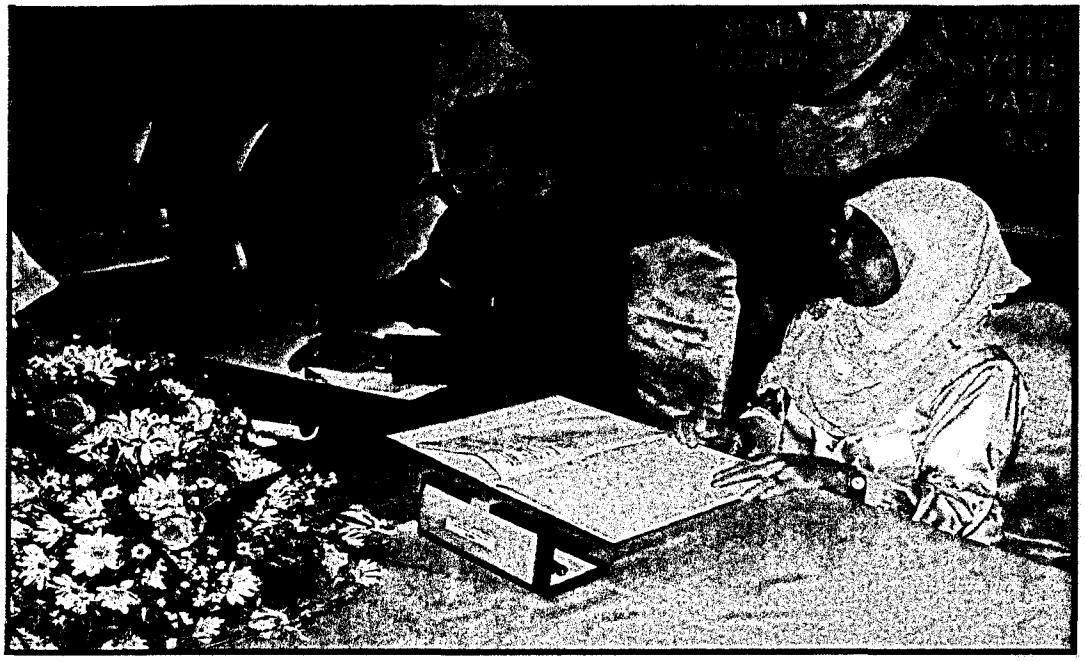

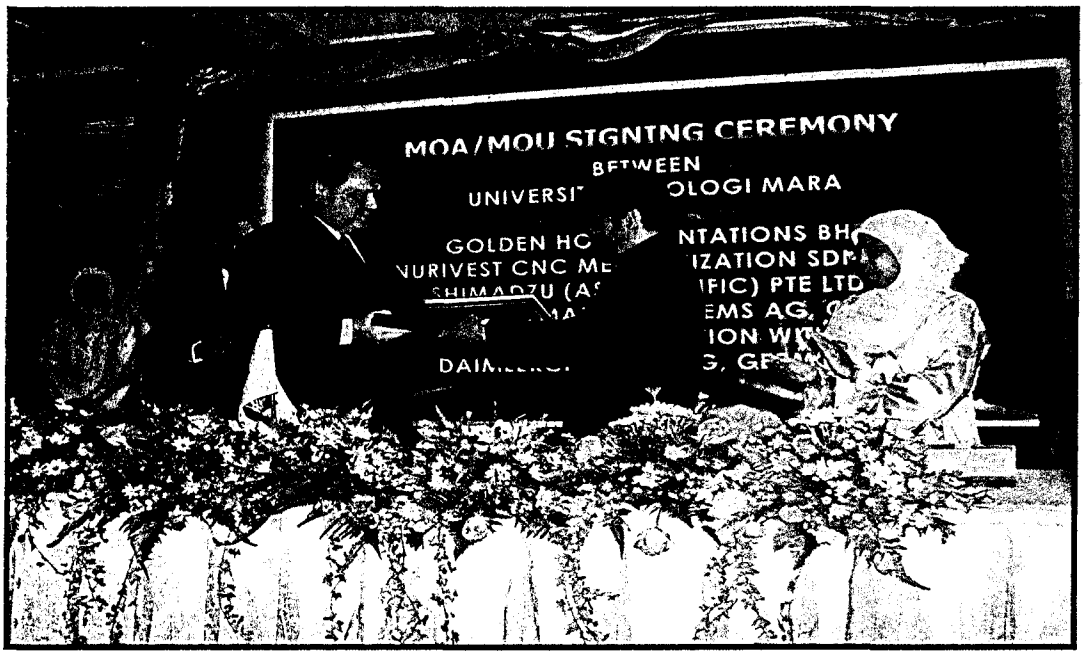

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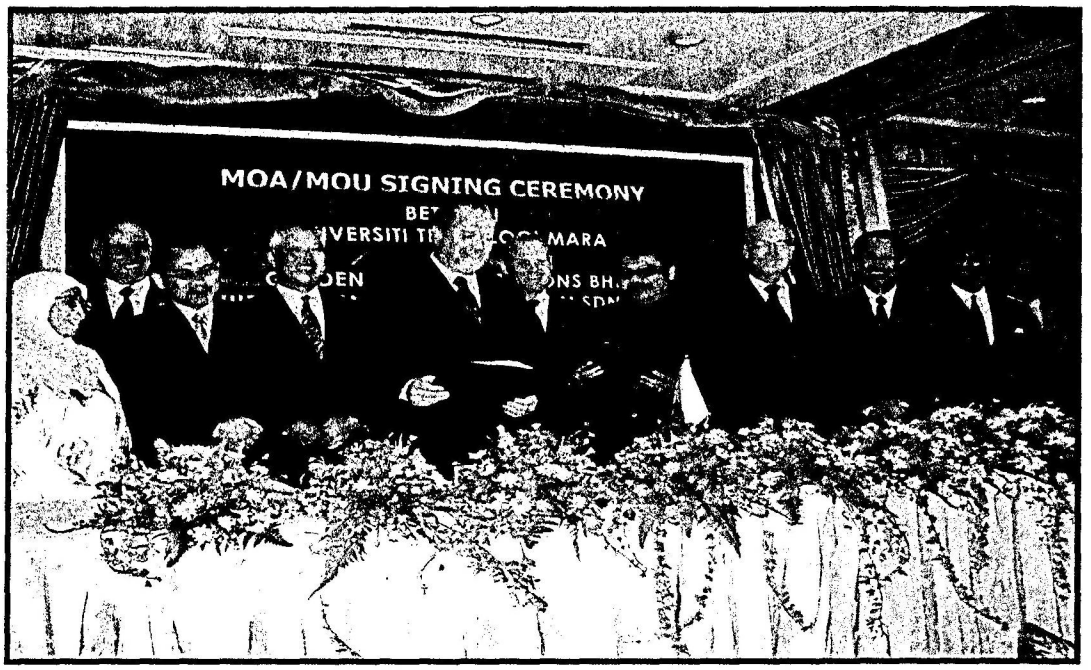

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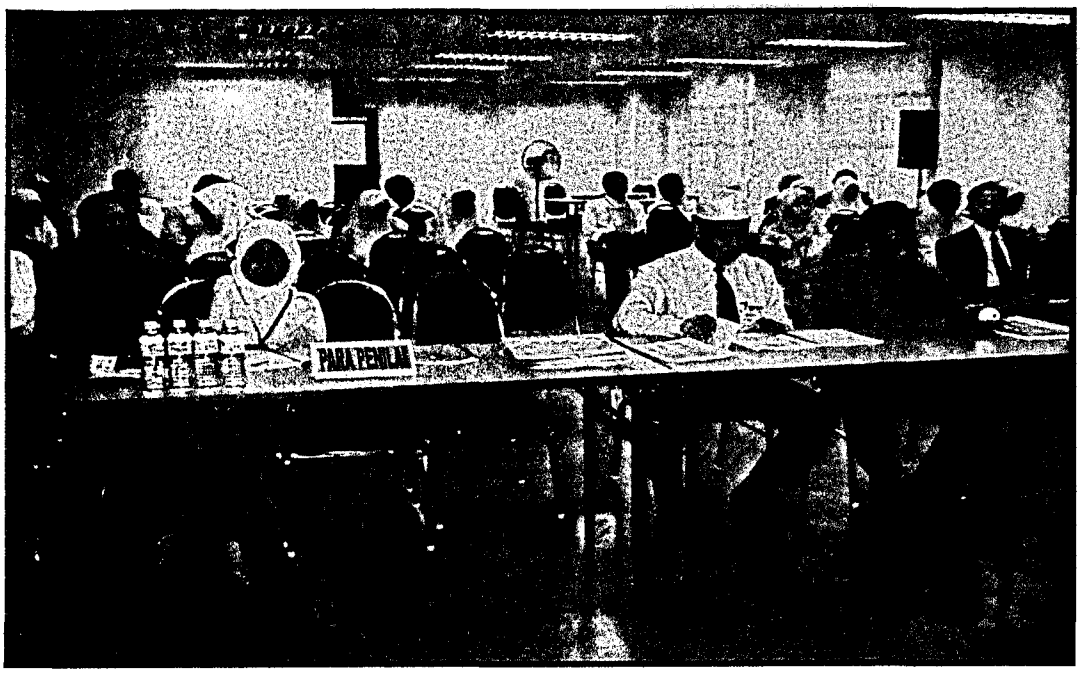

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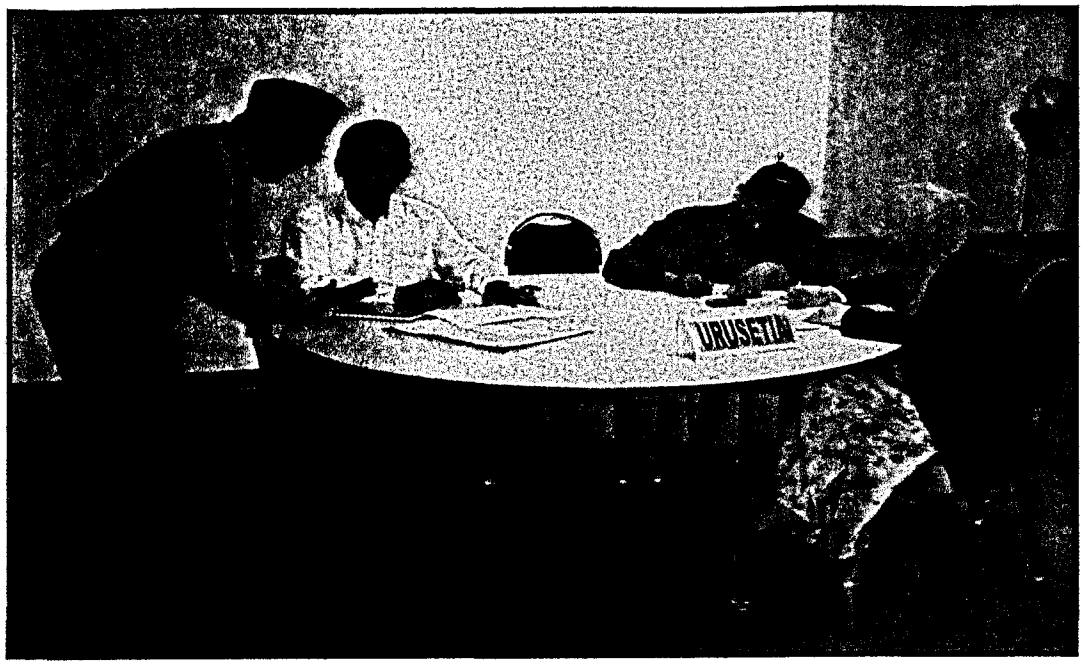

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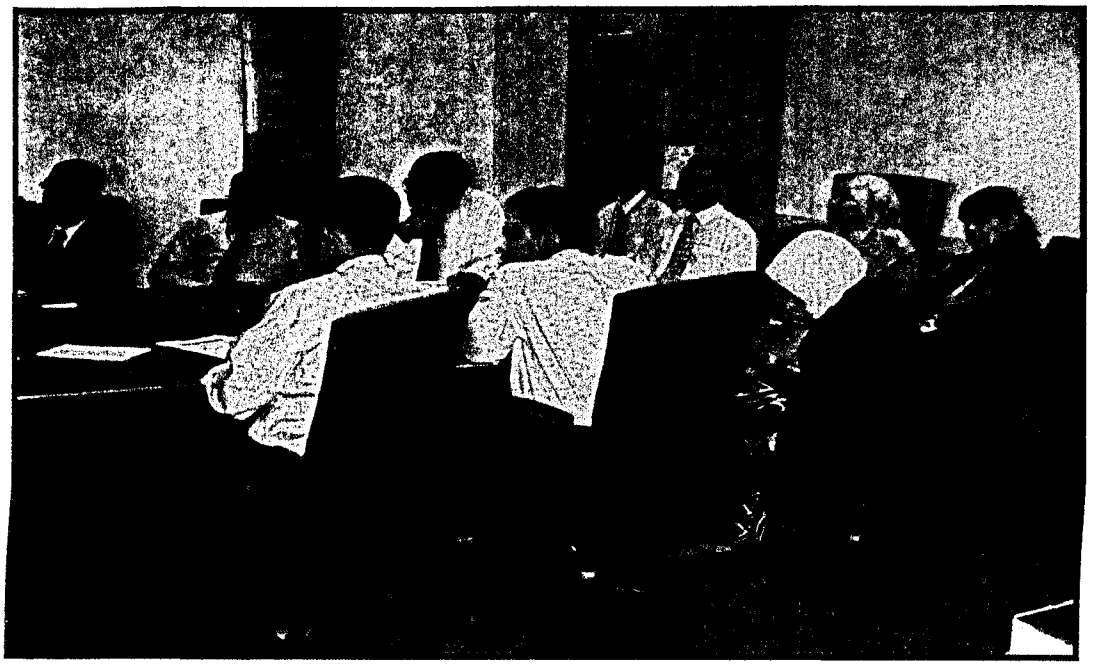

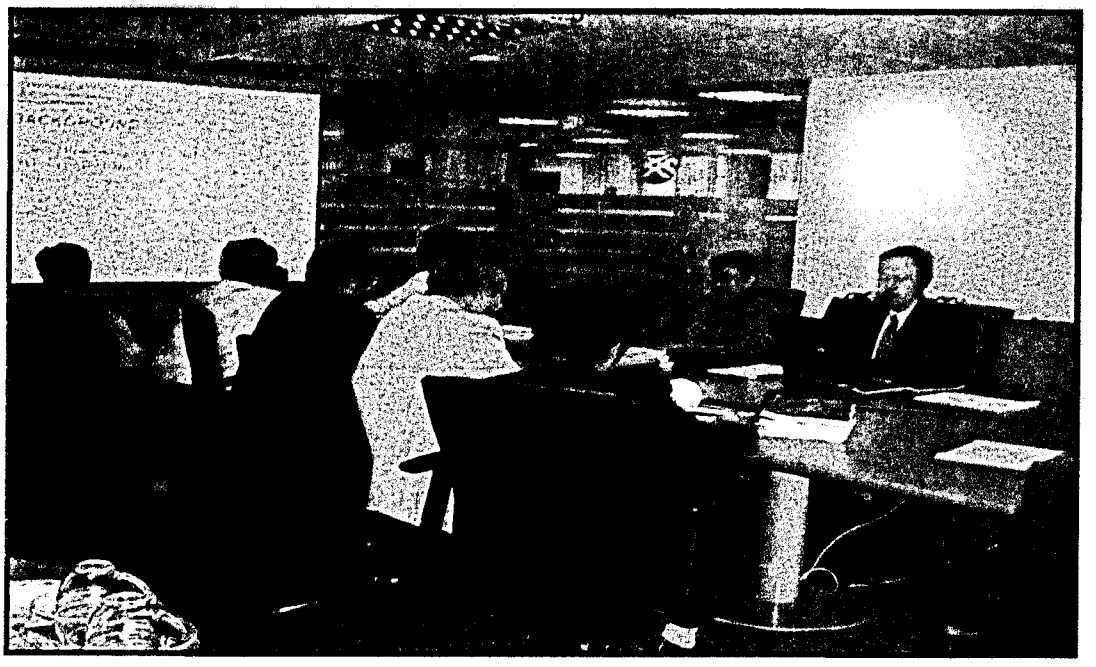

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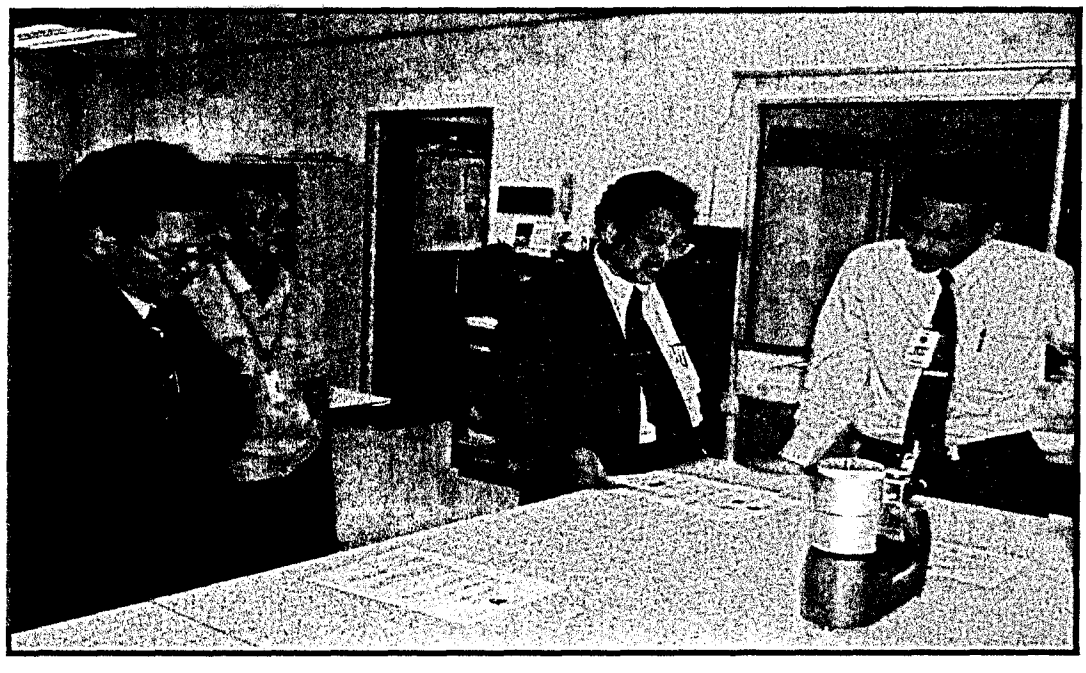

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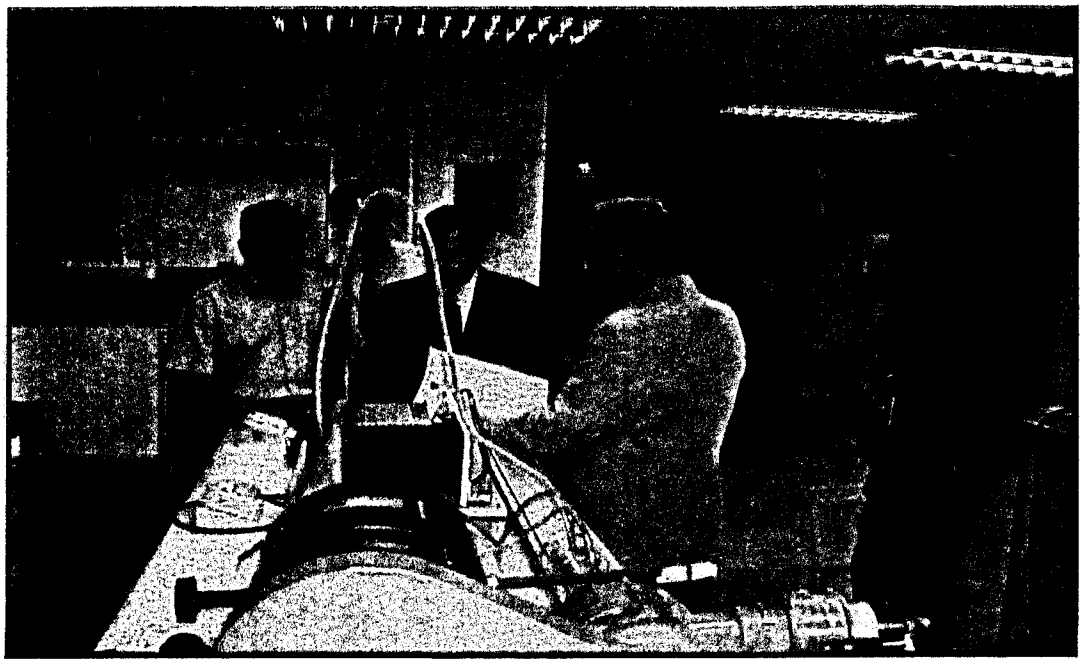

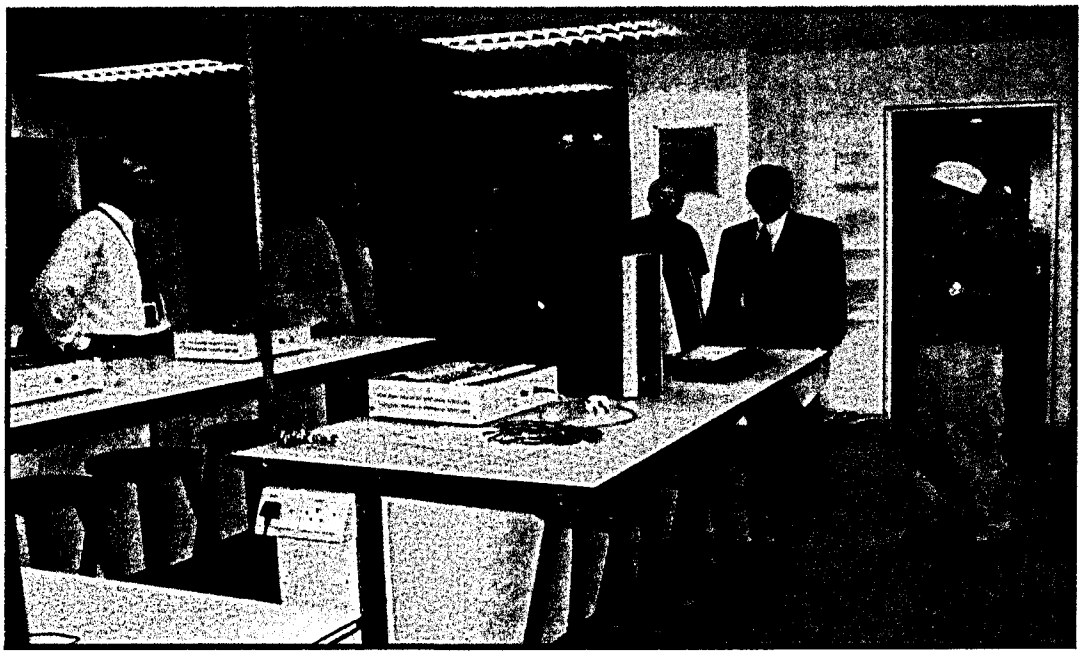

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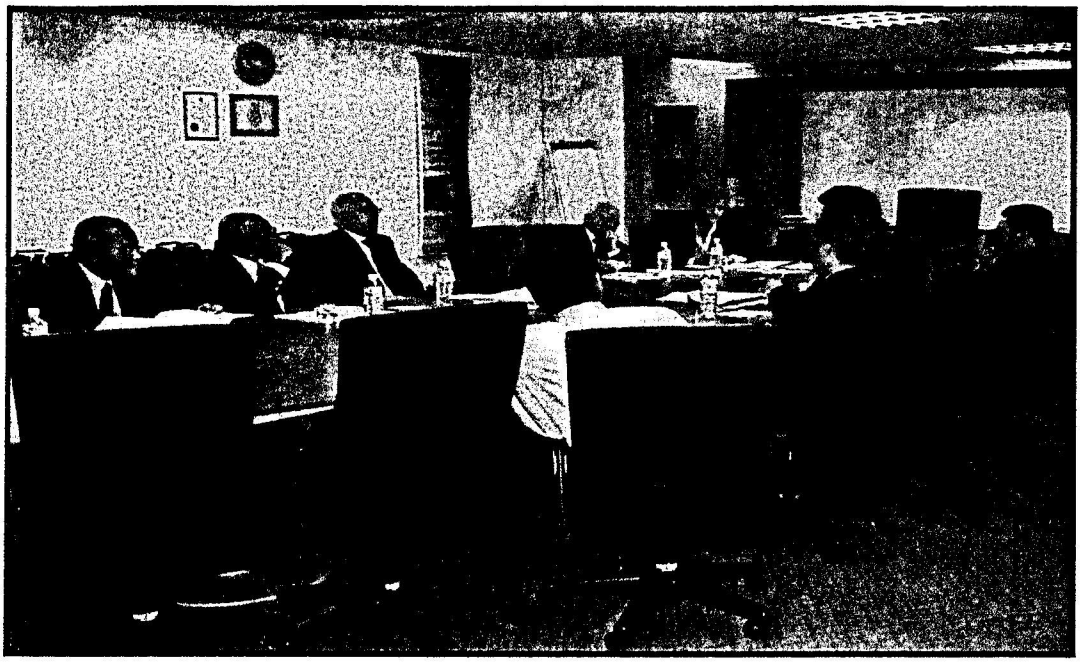

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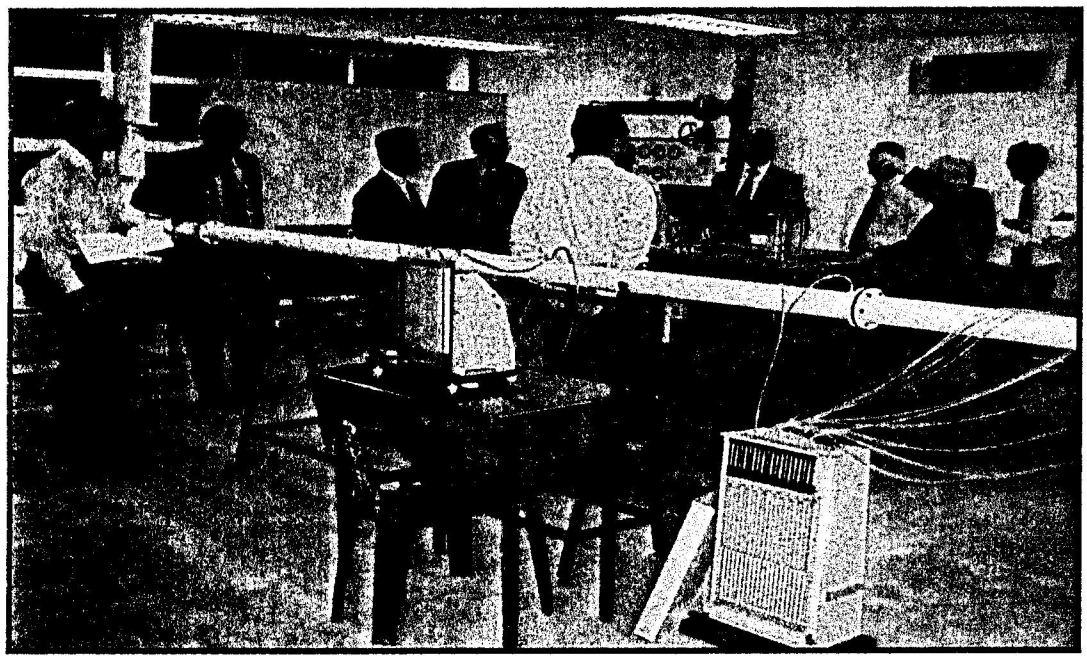

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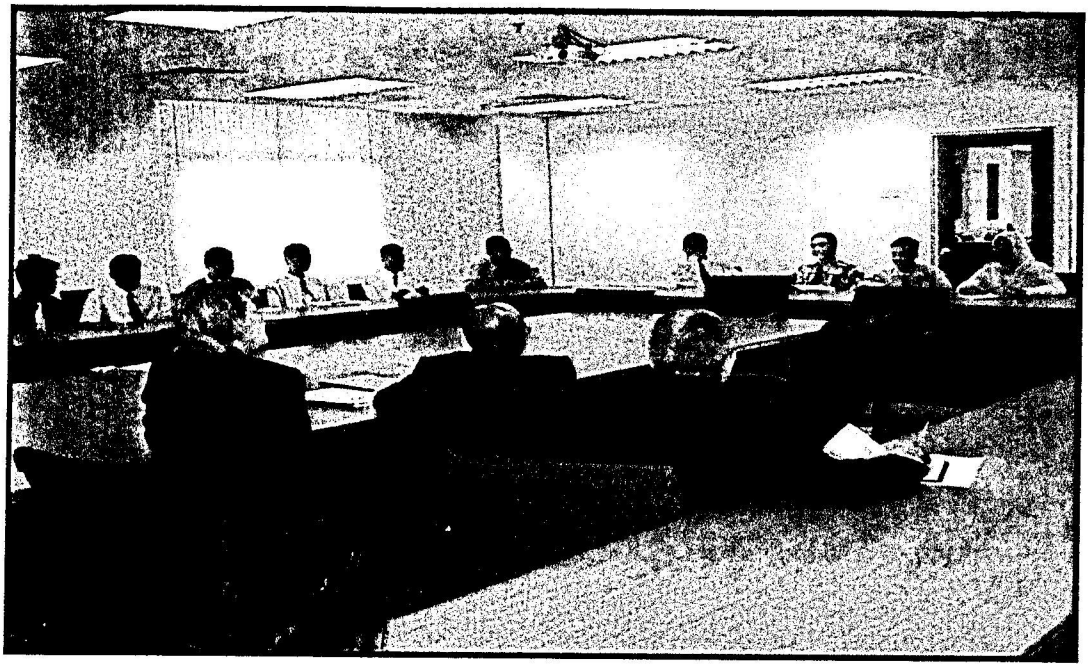

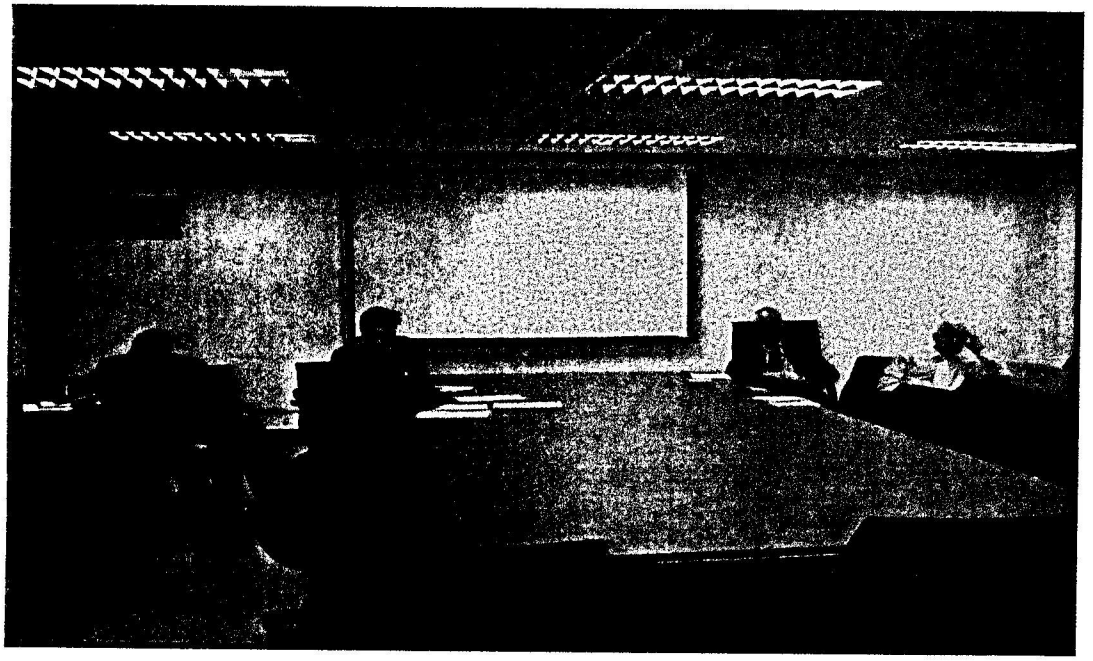

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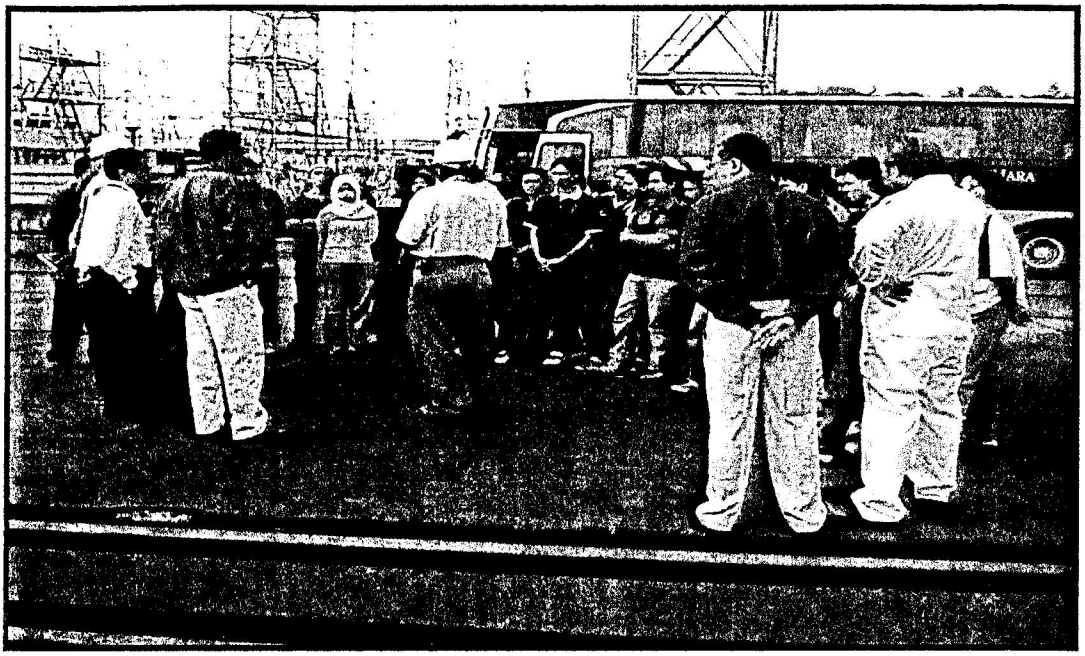

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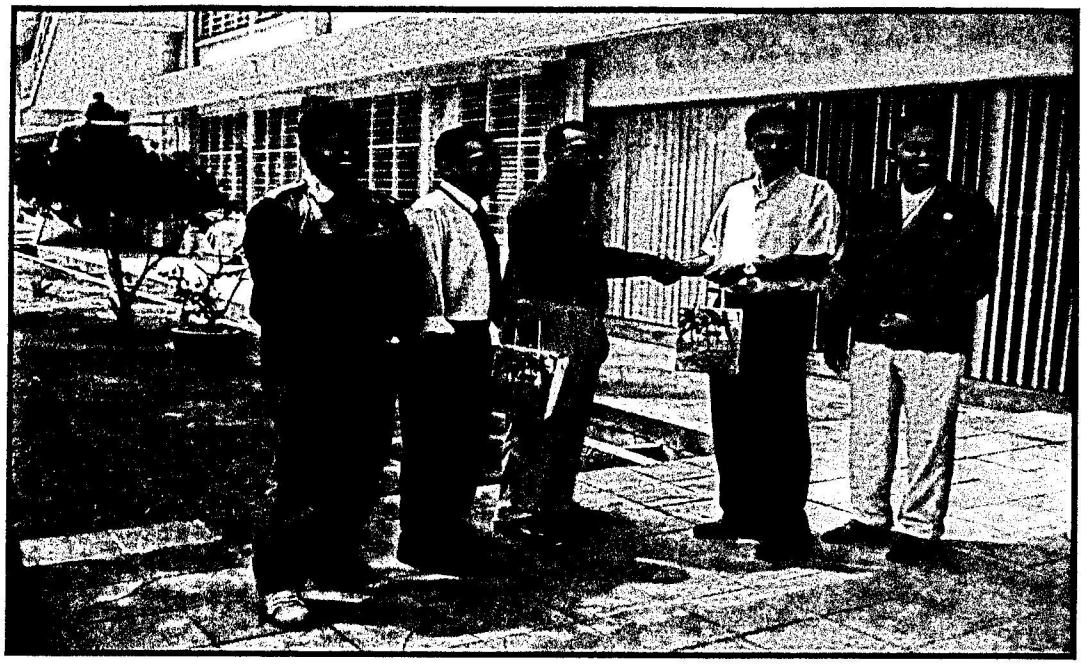

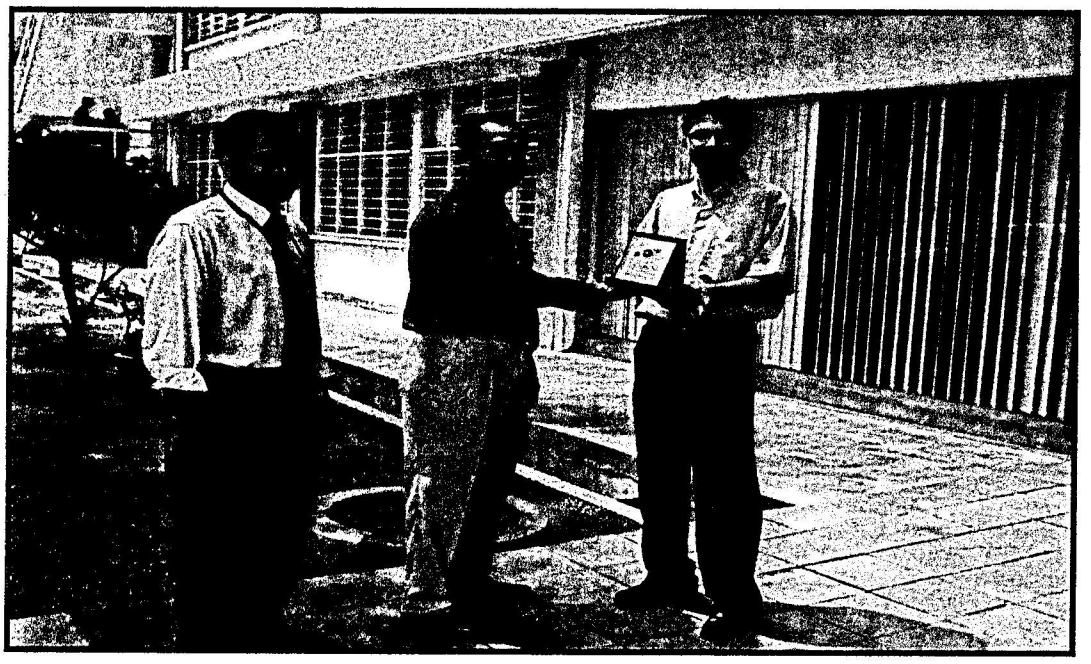

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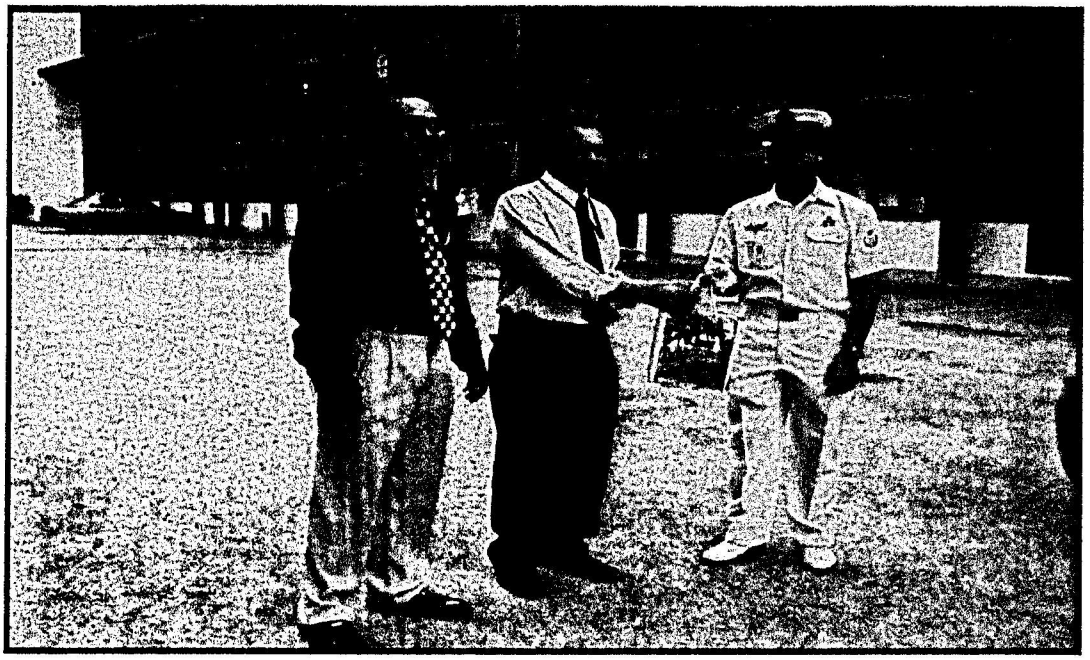

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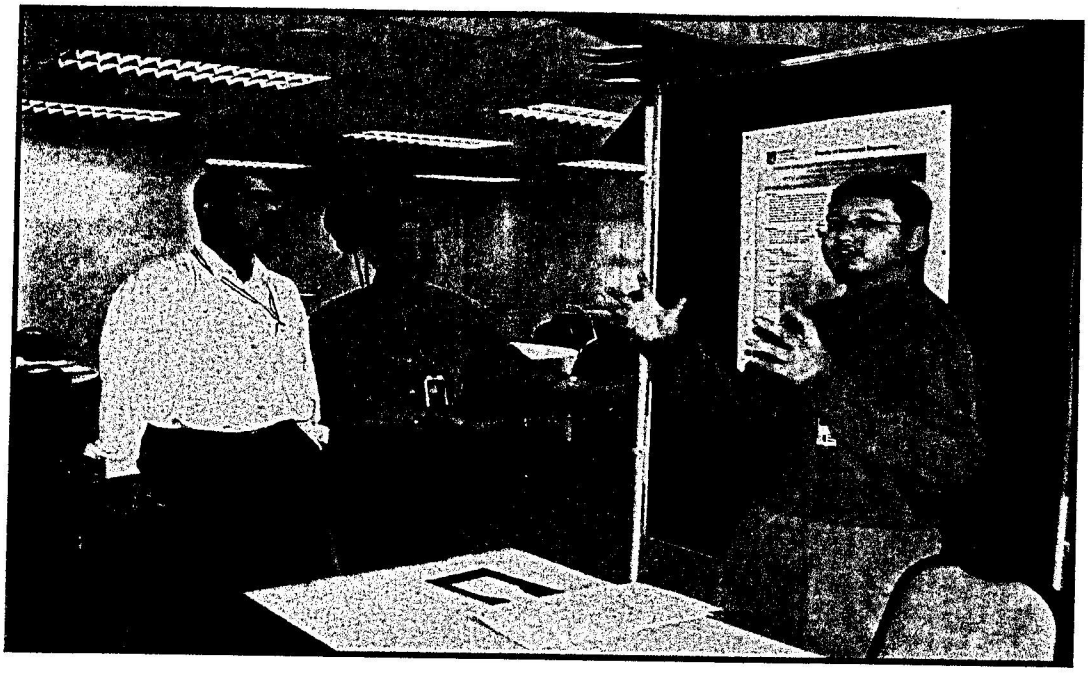

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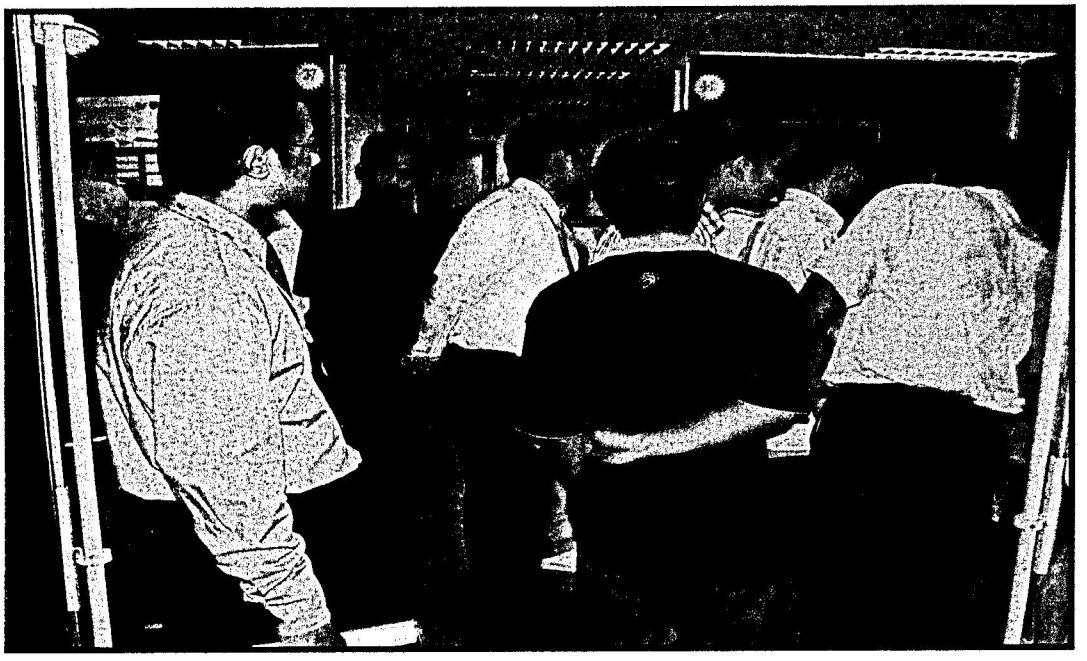

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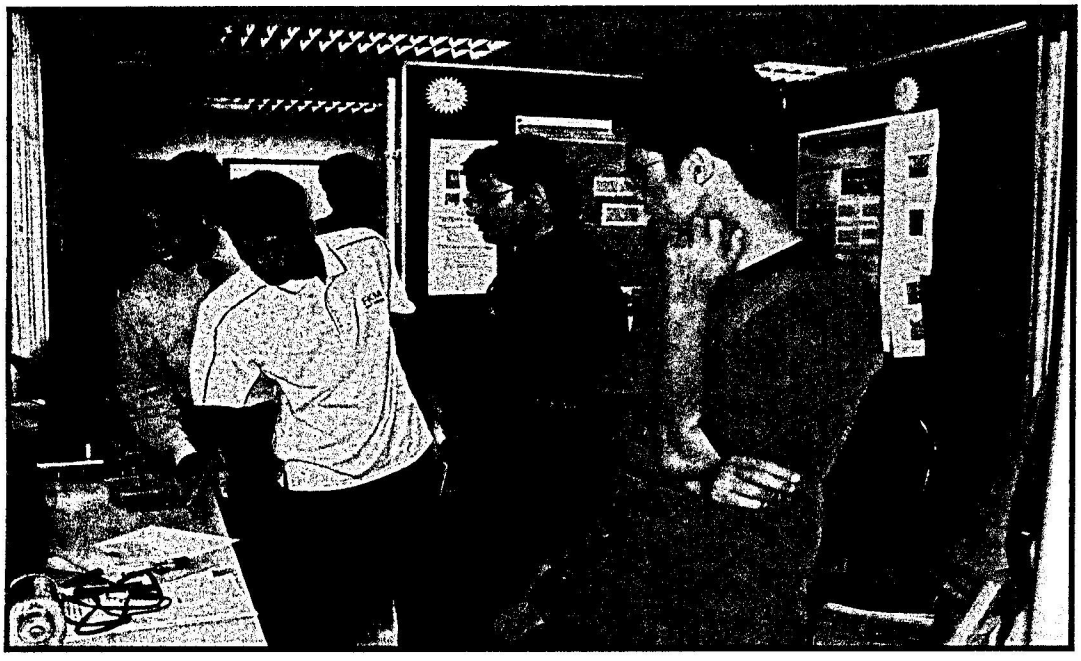

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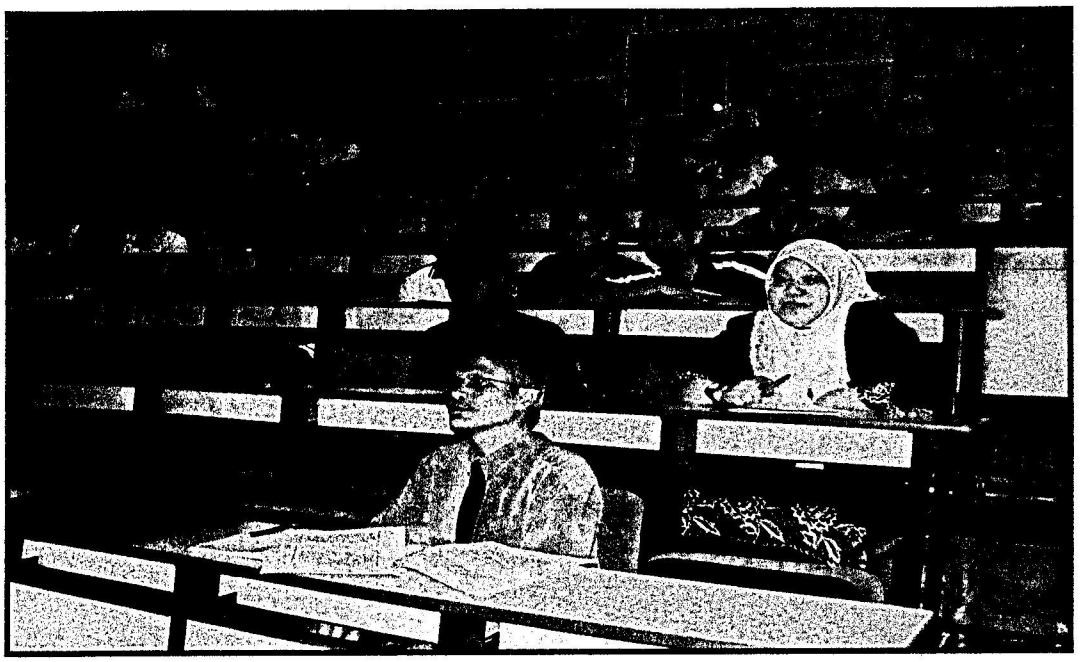

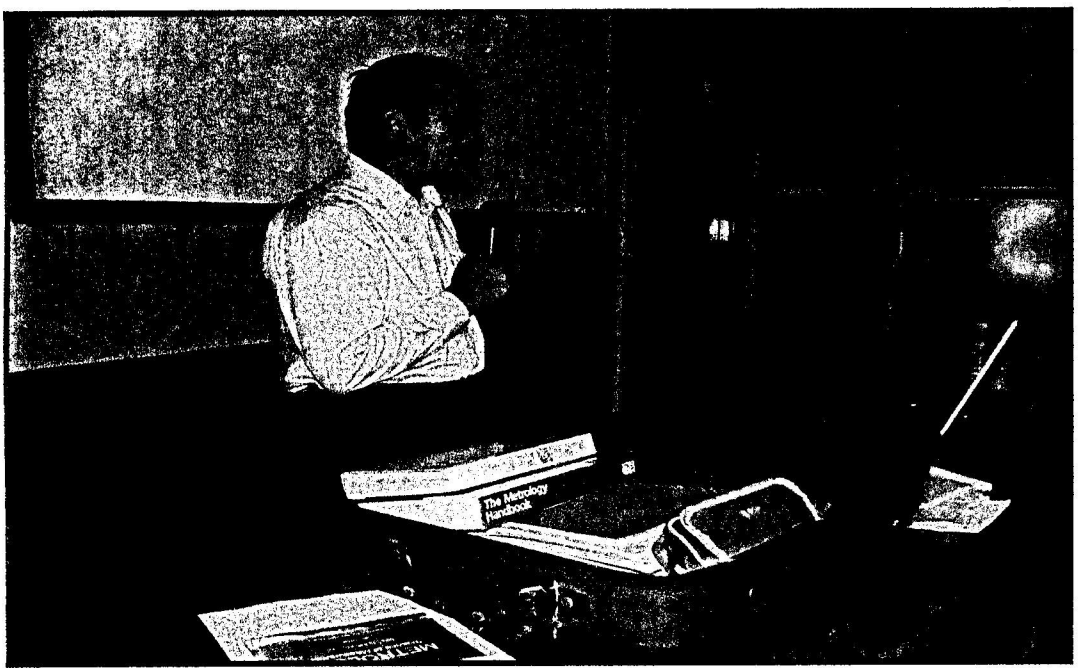

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