



# 1999

Laporan Tahunan  
Annual Report



**U**NIVERSITI **P**UTRA **M**ALAYSIA



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## MISI

Misi Universiti adalah menjadi Pusat Pembelajaran dan Penyelidikan yang unggul yang menyumbangkan bukan sahaja kepada kemajuan manusia dan penerokaan ilmu tetapi juga kepada pembentukan kekayaan dan pembangunan negara.



## OBJEKTIF

- Membangunkan dan menyediakan prasarana lengkap yang menggalakkan penggunaan teknologi terkini kepada pelanggan-pelanggan Universiti.
- Menawarkan program-program yang kompetitif pasarnya.
- Mengadakan pakatan-pakatan strategik dengan institusi-institusi awam dan swasta sama ada dari dalam atau luar negara bagi kebaikan bersama.
- Menawarkan pendidikan tinggi kepada pelanggan-pelanggan seramai mungkin dalam semangat pendemokrasian pendidikan negara.
- Mempromosi dan menawarkan program-program untuk pasaran antarabangsa.
- Meningkatkan bilangan pengambilan pelajar di peringkat ijazah tinggi.
- Mengekalkan UPM sebagai universiti termaju dalam aktiviti penyelidikan.
- UPM berada di barisan hadapan menerajui perkembangan Koridor Raya Multimedia.
- Memantapkan lagi pengurusan UPM di bahagian-bahagian yang dikenal pasti termasuk pengurusan kewangan, fakulti dan kolej kediaman.

## MISSION

The University's mission is to be a leading Centre of Learning and Research, contributing not only towards human advancement and discovery of knowledge but also to wealth creation and nation building.

## OBJECTIVES

- To provide infrastructure that encourages the use and application of state-of-the-art technology for the University's clients
- To offer competitive programmes for learning and training
- To forge and strengthen mutually beneficial strategic linkages with private and public sector institutions, both national and international
- To offer tertiary education to a maximum number of clients based on the premise of democratization of national education
- To promote and offer programmes for an international market
- To steadily increase student enrolment for postgraduate degrees
- To establish UPM as the foremost centre of research
- To be in the forefront of efforts to develop the Multimedia Super Corridor.
- To further consolidate management in the areas of finance, faculty and college accommodation.

# CARTA ORGANISASI ORGANISATIONAL CHART

**NAIB CANSOLOR  
VICE CHANCELLOR**

**TIMBALAN NAIB  
CANSOLOR AKADEMIK  
DEPUTY VICE CHANCELLOR  
ACADEMIC AFFAIRS**

**TIMBALAN NAIB  
CANSOLOR  
HAL EHWAL PELAJAR  
DEPUTY VICE CHANCELLOR  
STUDENT AFFAIRS**

**TIMBALAN NAIB  
CANSOLOR  
PEMBANGUNAN  
DEPUTY VICE CHANCELLOR  
DEVELOPMENT**

**PENDAFTAR  
REGISTRAR**

**BENDAHARI  
BURSAR**

**DEKAN/PENGARAH  
DEAN/DIRECTOR**

**KETUA  
PUSTAKAWAN  
CHIEF LIBRARIAN**

**FAKULTI EKOLOGI MANUSIA  
FACULTY OF HUMAN ECOLOGY**

**FAKULTI EKONOMI DAN PENGURUSAN  
FACULTY OF ECONOMICS AND MANAGEMENT**

**FAKULTI PERUBATAN VETERINAR  
FACULTY OF VETERINARY MEDICINE**

**FAKULTI KEJURUTERAAN  
FACULTY OF ENGINEERING**

**FAKULTI PENGAJIAN PENDIDIKAN  
FACULTY OF EDUCATIONAL STUDIES**

**FAKULTI PENGAJIAN BAHASA MODEN  
DAN KOMUNIKASI  
FACULTY OF MODERN LANGUAGE STUDIES  
AND COMMUNICATION**

**FAKULTI PERTANIAN  
FACULTY OF AGRICULTURE**

**FAKULTI PERHUTANAN  
FACULTY OF FORESTRY**

**FAKULTI PERUBATAN DAN SAINS KESIHATAN  
FACULTY OF MEDICINE AND HEALTH SCIENCE**

**FAKULTI REKA BENTUK DAN SENI BINA  
FACULTY OF DESIGN AND ARCHITECTURE**

**FAKULTI SAINS DAN PENGAJIAN ALAM SEKITAR  
FACULTY OF SCIENCE AND ENVIRONMENTAL STUDIES**

**FAKULTI SAINS MAKANAN DAN BIOTEKNOLOGI  
FACULTY OF FOOD SCIENCE AND BIOTECHNOLOGY**

**FAKULTI SAINS KOMPUTER DAN TEKNOLOGI MAKLUMAT  
FACULTY OF COMPUTER SCIENCE AND INFORMATION  
TECHNOLOGY**

**INSTITUT PENDIDIKAN DAN PEMBELAJARAN  
JARAK JAUH  
INSTITUTE FOR DISTANCE EDUCATION AND LEARNING**

**PUSAT PENGAJIAN SISWAZAH  
GRADUATE STUDIES CENTRE**

**PUSAT KOMPUTER  
COMPUTER CENTRE**

**PUSAT PENGAJIAN MATRIKULASI  
MATRICULATION STUDIES CENTRE**

**PUSAT ISLAM  
ISLAMIC CENTRE**

**PUSAT PEMBANGUNAN PERNIAGAAN UNIVERSITI  
UNIVERSITY BUSINESS DEVELOPMENT CENTRE**

**PUSAT KEBUDAYAAN DAN KESENIAN SSAAS  
SSAAS ARTS AND CULTURE CENTRE**

**PUSAT PROGRAM LUAR  
EXTERNAL PROGRAMMES CENTRE**

**INSTITUT BIOSAINS  
BIOSCIENCE INSTITUTE**

**PUSAT PENGAJIAN SISWAZAH PERUBATAN  
GRADUATE MEDICAL CENTRE**

**PUSAT PENGAJIAN SISWAZAH PENGURUSAN MALAYSIA  
MALAYSIAN GRADUATE SCHOOL OF MANAGEMENT**

**TAMAN PENYELIDIKAN UNIVERSITI  
UNIVERSITY RESEARCH PARK**

**PENERBIT UPM  
UPM PRESS**

**UPM TERENGGANU  
TERENGGANU UNIVERSITY COLLEGE**

## LEMBAGA PENGARAH UNIVERSITI BOARD OF DIRECTORS

### PENGERUSI

#### CHAIRMAN

Y. Bhg. Datuk Ramly bin Ahmad

### ANGGOTA-ANGGOTA

#### DIRECTORS

Y.Bhg. Prof. Tan Sri Dato' Dr. Syed Jalaludin Syed Salim  
(Naib Canselor/Vice Chancellor)

Y.Bhg. Dato' Dr. Abdul Aziz bin Sheikh Abdul Kadir

Y.Bhg. Dato' Dr. Noor Laily bt. Dato' Abu Bakar

Y.Bhg. Dato' Patrick Lim Soo Kit

Y.Bhg. Datuk Hj. Isahak bin Mohd Yusuf

Y.Bhg. Tan Sri Dr. Johari bin Mat

Y.Bhg. Tuan Hj. Ithnin bin Hj. Hassan

## PEGAWAI UTAMA PRINCIPAL OFFICIALS

### CANSELOR

#### CHANCELLOR

TYT Tun Dato' Seri (Dr) Hj. Hamdan Sheikh Tahir  
S.M.N., P.S.M., D.U.P.N.P., D.P.M.N., K.M.N.

### PRO-CANSELOR

#### PRO-CHANCELLORS

Y.Bhg. Tan Sri Dato' Hj. Hashim Aman  
P.M.N., P.S.M., D.P.M.K., D.S.N.S., D.P.M.J., D.C.S.M.,  
S.S.S.A.

Y.Bhg. Tan Sri Dato' Thong Yaw Hong  
P.S.M., S.I.M.P., D.I.M.P., J.M.N., S.M.P., J.B.S., A.M.N.

### NAIB CANSELOR

#### VICE-CHANCELLOR

Y.Bhg. Prof. Tan Sri Dato' Dr. Syed Jalaludin Syed Salim  
D.S.S.A., D.P.M., J.S.M.  
B.Vet. Sc. & A.H. (Punjab), M.Phil., Ph. D. (London), F.A.S.

### TIMBALAN NAIB CANSELOR

#### DEPUTY VICE-CHANCELLORS

#### Hal Ehwak Akademik

##### Academic Affairs

Prof. Dr. Kamel Ariffin Mohd. Atan J.S.M.  
B.A.(Malaya), M.A. (Western Ontario), Ph. D.  
(New South Wales)

#### Pembangunan

##### Development

Y.Bhg. Prof. Dato' Dr. Ir. Mohd. Zohadie Bardaie D.S.S.A.  
Dip. Agric. (Malaya), B.S., M.S. (California, Davis),  
Ph.D.(Cornell) M.I.E.M., P.Eng.  
(hingga/till 31/7/1999)

Prof. Dr. Muhamad Awang  
Drs. (ITB) Ph. D. (Sheffield)  
(mula/beginning 1/10/1999)

#### Hal Ehwal Pelajar

##### Student Affairs

Prof. Dr. Rahim Md. Sail J.S.M., D.S.M.  
Dip. Agric.(Malaya), B.S. (California, Davis),  
M.S. Ph.D.(Wisconsin)  
(hingga/till 31/8/1999)

Prof. Dr. Abdul Rahman Md. Aroff  
B.A., Dip.Ed. (Malaya), M.Ed.(Sheffield)  
Ph.D.(Southampton)  
(mula/beginning 1/10/1999)

**PENDAFTAR****REGISTRAR**

Ahmad Zekri Abdul Khalil, K.M.N., P.M.P., A.M.N.  
 B.Econ. (Malaya), Dip. in Mgmt Analysis (INTAN),  
 M.M.I.M.,  
 Cert. in Small Bus. Mgmt.(MIM)

**BENDAHARI****BURSAR**

Hjh. Noormah Hj. Mohamed, A.M.N.  
 Corporation of Secretaries (UK)  
 ADIA (ITM), R.A. (M)

**KETUA PUSTAKAWAN****CHIEF LIBRARIAN**

Kamariah bte Abdul Hamid  
 A.L.A.(London), M.L.S. (Hawaii)

**DEKAN****DEAN****Fakulti Ekologi Manusia****Faculty of Human Ecology**

Prof. Madya Abdullah Al-Hadi Hj. Muhamed  
 B.A.(Hons.) (UKM), M.S.(Eastern Michigan),  
 Ph.D. (Malaya)

**Fakulti Ekonomi dan Pengurusan****Faculty of Economics and Management**

Prof. Nik Mustafa Raja Abdullah  
 Dip.Agric.(UPM), B.S. California-Davis), M.S., Ph.D.  
 (Oregon State)

**Fakulti Perubatan Veterinar****Faculty of Veterinary Medicine**

Prof. Dato' Dr Sheikh Omar Abdul Rahman  
 D.P.S.K., S.M.S., J.S.M.,  
 B.V.Sc. (Queensland), M.V.Sc. (Saskatchewan),  
 M.R.C.V.S. (London)

**Fakulti Kejuruteraan****Faculty of Engineering**

Prof. Ir. Abang Abdullah Abang Ali  
 B.Sc. (Hons.) (Brighton), M.Sc. (Manchester), F.I.E.M.,  
 P.Eng., M.I.C.E., C.Eng.  
 (hingga/till 1/8/1999)

Prof. Madya Ir. Dr. Radin Umar Radin Sohadi  
 B.Eng. (Hons.), M.Eng.(Sheffield), Ph.D. (Birmingham),  
 M.I.E.M., P.Eng., M.I.H.T. (UK), M.R.E.A.A.A.,  
 M.A.A.A.M. (USA)  
 (mula /beginning 1/10/1999)

**Fakulti Pengajian Bahasa Moden dan Komunikasi****Faculty of Modern Language Studies and Communication**

Prof. Haji Amat Juhari bin Moain, K.M.N., A.M.N.  
 Cert. Ed., B.A. (Hons), M.A., Ph.D. (Malaya), D.P.I.(UKM)

**Fakulti Pengajian Pendidikan****Faculty of Educational Studies**

Prof. Dr. Abdul Rahman Md. Aroff, K.M.N.  
 B.A., Dip.Ed.,(Malaya), M.Ed.(Sheffield),  
 Ph.D. (Southampton)  
 (hingga/till 30/9/1998)

Prof. Madya Dr. Kamariah Hj. Abu Bakar  
 Cert. Ed. (Malaya), B.Sc., M.Sc. (SUNY), Ph.D. (SIU)  
 (mula/beginning 1/10/1998)

**Fakulti Perhutanan****Faculty of Forestry**

Prof. Madya Dr. Rusli bin Mohd.  
 B.Sc.(For.) (UPM), M.Phil.(Edinburgh),  
 Ph.D.(North Carolina State)

**Fakulti Pertanian****Faculty of Agriculture**

Prof. Dr. Mohd. Yusof Hussien  
 Dip.Agric. (Malaya), B.S., M.S.(Louisiana State),  
 Ph.D. (Adelaide)

**Fakulti Sains dan Pengajian Alam Sekitar**

Faculty of Science and Environmental  
Studies

Prof. Dr. Muhamad Awang  
Drs.(Bandung I.T.B.), Ph.D.(Sheffield)  
(hingga/till 30/9/1999)

Prof. Wan Md. Zin Wan Yunus  
(mula/beginning 1/10/1999  
SmSn.(UKM), M.Sc., Ph.D.(Salf.)

**Fakulti Sains Makanan dan Bioteknologi**

Faculty of Food Science and Biotechnology

Prof. Gulam Rasul bin Rahmat Ali  
D.V.M. (Pakistan), M.Sc. (Reading), M.Ed. Admin.,  
Ph.D. (Wisconsin)

**Fakulti Reka Bentuk dan Seni Bina**

Faculty of Design and Architecture

Prof. Madya Mustafa Kamal bin Mohd. Shariff  
Dip. Agric. (UPM), B.S. (Louisiana State), M.S.  
(Tennessee), Ph.D.(Colorado State)

**Fakulti Perubatan dan Sains Kesihatan**

Faculty of Medicine and Health Science

Y.Bhg. Prof. Datuk Dr. Sham Kassim  
P.J.N., K.M.N., P.M.C.  
M.B.B.S. (Sydney), D.C.H.(Glasgow), M.R.C.P., AM  
(Malaysia), F.R.C.P.(Edinburgh) (hingga/till 1/9/1999)

Prof. Madya Dr. Jammal Ahmad Essa  
(mula/beginning 1/11/1999)  
M.B.B.S. (Singapore), M.R.C.O.G. (London), F.R.C.O.G.  
(London), A.M. (Malaysia), F.A.M.S.(Singapore),  
F.I.C.S.(USA)

**Fakulti Sains Komputer dan Teknologi Maklumat**

Faculty of Computer Science and  
Information Technology

Prof. Madya Dr. Abd. Azim Abd. Ghani  
B.Sc. (Indiana State), M.Sc. (Miami), Ph.D.(Strathclyde)

**Pusat Pengajian Siswazah**

Graduate Studies Centre

Prof. Madya Dr. Kamis Awang  
B.Sc. (For)Hons, (A.N.U.), Ph. D. (A.N.U.)

**Pusat Pengajian Siswazah Pengurusan Malaysia**

Malaysian Graduate School of Management

Prof. Dr. Md. Zabid bin Abdul Rashid  
B.S.(Agribus.), (UPM), M.Sc.(London), D.E.A.,  
Dr.de Troisième Cycle en Science de Gestion  
(Aix-Marseille ESSEC)

**PENGARAH**

DIRECTORS

**Institut Pendidikan dan Pembelajaran Jarak Jauh  
(IDEAL)**

Institute for Distance Education and  
Learning IDEAL)

Prof. Madya Dr. Azahari bin Ismail  
Dip. Agric. (Malaya), B.S.,M.Ag. (Agric.& Extension Ed.)  
(Univ. of Florida), Ph.D. (Florida State University)

**Taman Penyelidikan Universiti**

University Research Park

Prof. Dr. Jinap Selamat  
Dip. Sc. & Educ. (UPM), B.S., M.Sc. (Louisiana State),  
Ph.D.(Pennsylvania State)

**Pusat Islam**

Islamic Centre

Prof. Madya Dr. Hj. Muhd Fauzi bin Muhamad  
B.A. (Hons), (YPIK Nilam Puri), M.A. & Ph.D. (Al-Azhar)  
Dip. Ed. (Aina-Syams Kaherah)

**Pusat Pengajian Siswazah Perubatan**

Graduate Medical Centre

Prof. Datuk Mohd. Sham Kasim, P.J.N.,K.M.N., P.M.C.  
M.B.B.S. (Sydney), D.C.H. (Glasgow), M.R.C.P.,  
A.M.(Malaysia), F.R.C.P.(Edinburgh)

**Pusat Pengajian Matrikulasi**

Matriculation Studies Centre

Prof. Madya Dr. Elias Saion  
SmSn.(UKM), M.Sc. (Surrey), Ph.D.(St.Andrews)

**Pusat Pembangunan Perniagaan Universiti**

University Business Centre

Prof. Dr. Nik Muhamad Nik Ab.Majid  
Dip. Agri. (Malaya), B.S. (Agric), M.F.(Louisiana State)  
Ph.D. (British Columbia)

**Pusat Kebudayaan dan Kesenian Sultan Salahuddin  
Abdul Aziz Shah**

The SSAAS Centre for Culture and Arts

Prof. Madya Dr. Hj. Mohamed Ali Rajion  
B.Sc. (Hons.), M.Sc. (New England), Ph.D. (Melbourne)

**Pusat Pembangunan Perisian**

Centre for Software Development

Prof. Madya Dr. Bachok Taib  
B.Sc. (Hons.) (UKM), M.Sc.(Reading), Ph.D. (Wollongong)

**Pusat Program Luar**

External Programmes Centre

Prof. Dr. Wan Sulaiman Wan Harun, D.J.N.  
B.Sc. (Agric.), M.Sc.(Guelph), Dr. Agr.Sc. (Ghent)

**Unit Perancangan Korporat**

Corporate Planning Unit

Prof. Dr. Hj. Zainal Abidin bin Kidam  
B.Agric. Sc. (Hons.) (Malaya), M.B.A.(Wisconsin-  
Madison)

**Pusat Antarabangsa**

International Centre

Prof. Shaik Mohd. Nor Alam S.M. Hussien  
L.L.B. (Hons.), L.L.M., (Malaya), Ph.D.(IIU)

**Institut Biosains**

Biosciences Institute

Prof. Dr. Abdul Rani Bahaman, J.S.M.  
D.V.M.(Mymengsingh), B.Sc. (La Trobe), M.Phil. (Massey),  
Ph.D. (UPM)

**Institut Teknologi Maju (ITMA)**

Institute for Advanced Technology

Prof. Ir. Abang Abdullah bin Abang Ali  
B.Sc.(Hons.) (Brington),M.Sc. (Manchester), F.I.E.M.,  
P.Eng., F.I.C.E.,C.Eng.

**Institut Multimedia**

Multimedia Institute

Prof. Madya Dr. Makhdzir bin Mardan  
Dip. Agric. (UPM), B.S., M.S.(Louisiana State), Ph.D.  
(Guelph)

**E-Universiti**

E-University

Prof. Madya Dr. Han Chun Kwong  
B.S.(Agribus.), M.S.(UPM), Ph.D. (Cambridge)

**Penerbit Universiti Putra Malaysia**

Universiti Putra Malaysia Press

Sumangala Pillai  
B. Sc. (USM), Dip. Publishing (U.M.)

# PEGAWAI UTAMA UNIVERSITI PUTRA MALAYSIA TERENGGANU PRINCIPAL OFFICIALS OF UNIVERSITI PUTRA MALAYSIA TERENGGANU

## REKTOR

### RECTOR

Prof. Dato' Dr. Mohamed Mahyuddin Mohd. Dahan,  
D.P.M.T., J.S.M.  
D.V.M. (Mymensingh), M.S. (Mississippi State),  
Ph.D. (Kentucky)

## TIMBALAN REKTOR

### DEPUTY RECTOR

Prof. Dr. Sulaiman Hj. Mohd. Yassin, S.S.A., J.S.M.  
B.Agric. Sc.(Hons.) (Malaya),M.P.S.(C.A.),Ph.D.(Cornell)

## PENDAFTAR

### REGISTRAR

Mohd. Suib bin Hj. Maulud  
B.A.(Hons.) (Malaya)

## BENDAHARI

### BURSAR

Nor Azizah binti Kassim  
B.Econ. (Hons.) (Malaya)

## DEKAN

### DEAN

#### Fakulti Sains Gunaan dan Teknologi

#### Faculty of Applied Science and Technology

Prof. Dr. Hj. Mohd. Azmi Ambak, P.J.C.  
B.Agric. Sc. (Malaya), M.Sc. (Salford), Ph.D. (UPM)

#### Fakulti Pengurusan dan Ekonomi

#### Faculty of Economics and Management

Prof. Madya Dr. Abd. Majid Mohd. Isa  
B.Ed. (UPM), M.A. (Iowa), Ph.D. (Hull)

## PENGARAH INSTITUT OSEANOGRAFI

### DIRECTOR, INSTITUTE OF OCEANOGRAPHY

Prof. Madya Dr. Mohd. Zaki bin Mohd. Said  
Dip. Agric. (UPM), B.S., M.S. (Louisiana State),  
Ph.D.(UPM)

## HAL EHWAL KEMAHASISWAAN

### STUDENT AFFAIRS

Haji Zainal Ashirin bin Shaharudin, P.J.C.  
Dip. Fish. (UPM), B.S. (URI), M.S. (Kagoshima)

## KETUA

### HEAD

#### Pusat Pengajian Matrikulasi

#### Matriculation Studies Centre

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## LAPORAN NAIB CANSOLOR VICE CHANCELLOR'S REPORT



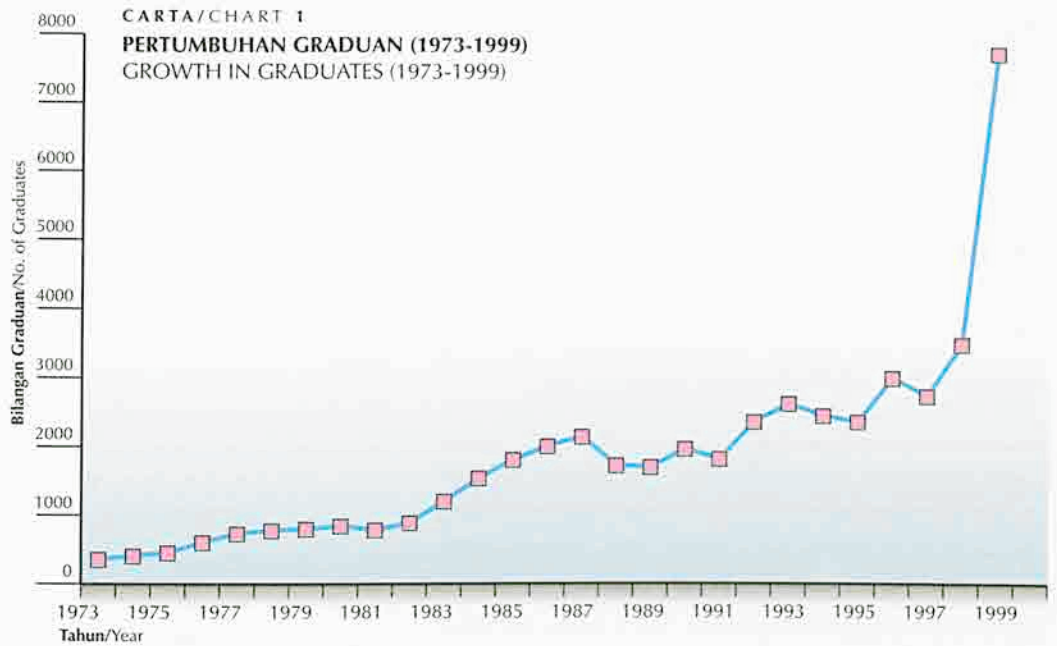
Universiti Putra Malaysia (UPM) yang bermula sebagai sebuah universiti yang berasaskan pertanian telah berkembang maju menerusi perluasan bidang-bidang pengajian yang mengambil kira keperluan semasa negara di samping melahirkan golongan profesional.

Jika ditinjau dari segi sejarah, UPM bermula sebagai Sekolah Pertanian Malaya pada tahun 1931 dan kemudiannya dinaik taraf kepada Kolej Pertanian. Seterusnya pada tahun 1971, ia bergelar Universiti Pertanian Malaysia. Selaras dengan perkembangannya yang begitu pesat dalam bidang pendidikan ditambah pula dengan peluasan bidang pengajian, pada tahun 1997 UPM telah menukar nama daripada Universiti Pertanian Malaysia kepada Universiti Putra Malaysia.

Menjelang tahun 1999, UPM telah berjaya melahirkan seramai 49,170 graduan dalam pelbagai bidang. Taburan kadar pertumbuhan graduan ditunjukkan dalam Jadual 1 dan Carta 1. Terdapat pertambahan sebanyak 122% graduan pada tahun 1999 iaitu 7,739 graduan berbanding 3,487 graduan pada tahun sebelumnya. Jumlah ini menunjukkan pertambahan tertinggi yang pernah dicapai oleh UPM. Keadaan ini juga menunjukkan bahawa UPM mampu membekalkan tenaga profesional dalam pelbagai bidang pada masa akan datang berdasarkan kepada pertumbuhan pelajar yang begitu pesat sekali.

Historically Universiti Putra Malaysia was founded as an Agricultural School in 1931, upgraded to an Agricultural College and subsequently promoted to become the University of Agriculture in 1971. Today the courses offered at the university have expanded to include a wide range of disciplines. This was a natural development of the University aligning itself with the national objectives of producing more tertiary-level trained individuals to meet the burgeoning demand for professionals. In view of these developments, a name change was deemed necessary. Universiti Pertanian Malaysia was renamed Universiti Putra Malaysia in 1997.

As of 1999, 49,170 graduates have successfully completed various fields of studies in UPM. Table 1 and Chart 1 reflect these impressive figures. In 1999, the number of graduates was 7,739 compared to 3,487 in 1998. This was an increase of 122%, the highest ever recorded in UPM's history. This is a clear indication that UPM has the capability and capacity to produce professional manpower in various fields.



**JADUAL/TABLE 1**

**PERTUMBUHAN PELAJAR (1973 HINGGA 1999)**  
**GROWTH IN GRADUATES (1973-1999)**

Tahun Year	Bilangan Graduan No. of Graduates
1973	346
1974	398
1975	446
1976	597
1977	725
1978	771
1979	793
1980	838
1981	780
1982	883
1983	1197
1984	1537
1985	1804
1986	2000
1987	2137
1988	1720
1989	1694
1990	1958
1991	1813
1992	2352
1993	2619
1994	2445
1995	2358
1996	2997
1997	2736
1998	3487
1999	7739
<b>JUMLAH/TOTAL</b>	<b>49,170</b>

Pertumbuhan pesat dalam pengeluaran graduan pada tahun 1999 menyebabkan UPM mengadakan dua sidang konvokesyen. Daripada 7,739 pelajar yang bergraduat, jumlah graduan Doktor Falsafah seramai 41 orang, Sarjana 906 orang, ijazah pertama 6,233 orang dan diploma 559 orang. Di samping pengeluaran siswazah yang tinggi, UPM juga mementingkan kualiti pelajarinya. Ini dibuktikan oleh UPM dengan kejayaan melahirkan seramai 127 pelajar ijazah kelas pertama dan 3,472 ijazah kelas kedua tinggi pada tahun 1999. Peratus pelajar mengikut peringkat pengajian adalah seperti dalam Carta 2.

Pengambilan pelajar seramai 15,907 orang pada tahun 1999 juga menunjukkan peningkatan sebanyak 18.79% berbanding tahun sebelumnya. Daripada jumlah tersebut 236 ialah pelajar Doktor Falsafah, 2,036 pelajar Sarjana, 10,393 pelajar ijazah pertama, 1,170 pelajar diploma dan 2,072 pelajar Matrikulasi. Dari segi enrolmen pelajar, UPM mempunyai seramai 35,263 pelajar berbanding 30,902 pelajar pada tahun 1998, meningkat 14.1%. Hal ini menunjukkan UPM begitu aktif dalam usaha ke arah mewujudkan masyarakat yang berpendidikan tinggi di negara ini.

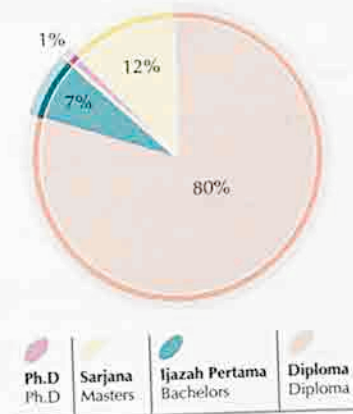
Pusat Pengajian Siswazah UPM memainkan peranan penting dalam melahirkan pelajar dalam bidang pascasiswazah apabila pada tahun 1999, seramai 2,272 telah mendaftar mengikuti pelbagai bidang pengajian dan menjadikan enrolmennya seramai 4,677 orang. Daripada jumlah tersebut, seramai 525 atau 11.2% adalah pelajar luar negara yang terdiri daripada lebih 40 negara di seluruh dunia. Hal ini selaras dengan hasrat menjadikan UPM sebagai pusat kecemerlangan pendidikan di peringkat antarabangsa.

UPM telah mengikuti beberapa program promosi melalui pameran program pengajian di dalam dan di luar negara seperti di Pusat Dagangan Dunia Putra, Kuching, Surabaya, Bangkok, Haadyai, Beijing, Shanghai dan Ho Chi Minh City. Tujuannya ialah untuk mempertingkatkan penyebaran maklumat tentang UPM terutama dari segi perkembangan terkini program pengajian serta kemajuan yang telah dicapai kepada semua peringkat masyarakat di dalam dan di luar negara.

Pada tahun 1999, program Pendidikan Jarak Jauh (PJJ) menunjukkan prestasi yang memberangsangkan dengan pertambahan dalam pengambilan pelajar sebanyak 59.5% berbanding tahun sebelumnya dan ini menjadikan enrolmennya berjumlah 7,977 orang. Lapan program baru telah diperkenalkan melalui program PJJ ini di samping mengekalkan enam program lama. Dengan ini sebanyak 14 program ditawarkan. Permintaan terhadap program PJJ yang semakin meningkat menunjukkan bahawa masyarakat mulai sedar tentang keperluan mempunyai pendidikan tinggi.

In 1999, due to the large number of graduating students, UPM had to organise two convocation sessions. Of the 7,739 students who graduated, 41 were Ph.Ds, 906 Masters, 6233 Bachelors and 559 Diploma holders. Whilst recording a phenomenal increase in graduates, a concurrent increase in the quality of the graduates was also achieved. For the first time, 127 were conferred first class honours while 3,472 were conferred second upper class honours. The breakdown of graduate students by category is shown in Chart 2.

**CARTA / CHART 2  
PENGELUARAN SISWAZAH  
GRADUATE OUTPUT**



The intake of 15,907 students in 1999 indicates a 18.79% increase over 1998. Of this total, 236 were Ph.D students, 2,036 Masters, 10,393 first degree, 1,170 Diploma and 2,072 were pursuing Matriculation programmes. UPM's enrolment increased from 30,902 in 1998 to 35,263 students in 1999; a 14.1% increase. This increment reflects UPM's commitment towards creating a well-educated society.

The Graduate Studies Centre has played an important role in attracting more post-graduate students to the University. In 1999, 2,272 students registered for various courses bringing the total enrolment to 4,677. Of this figure, 525 or 11.2% were foreign students from 40 different countries. This augurs well for UPM as it works towards establishing itself as a reputable International University Centre.

Kerjasama dengan kolej swasta juga dipertingkatkan dengan menambah pengambilan pelajar. Sejumlah 1,950 pelajar telah mendaftar dengan 30 kolej-kolej berkenaan yang menawarkan 14 program bachelors dan sembilan program diploma. Manakala jumlah enrolmen keseluruhan ialah 7,606 orang. Melalui program kerjasama ini, UPM telah berjaya mengeluarkan seramai 732 graduan.

UPM begitu aktif dalam aktiviti penyelidikan sehingga menjadikannya antara penerima peruntukan tertinggi penyelidikan IRPA selama beberapa tahun. Terdapat sebanyak sembilan sektor tumpuan utama penyelidikan IRPA di UPM iaitu agroindustri, galian dan tenaga, pembuatan, perkhidmatan dan teknologi maklumat, ekonomi, kesihatan, sosial, alam sekitar dan sains yang melibatkan 106 projek penyelidikan dengan peruntukan diluluskan sebanyak RM13,051,700. Selain itu UPM juga menerima peruntukan sebanyak RM2.1 juta bagi membiayai 231 projek penyelidikan jangka pendek.

Mulai 1 Jun 1999, UPM telah memperkenalkan skim penyelidikan untuk pensyarah lantikan baru. Melalui skim ini, peruntukan maksimum pensyarah lantikan baru ialah RM10,000 bagi memudahkan penyelidikan di bawah bimbingan dan pengawasan seorang profesor atau pensyarah kanan. Ia bertujuan memastikan kakitangan akademik UPM terlibat secara aktif dalam aktiviti penyelidikan di samping aktiviti pengajaran yang sedia ada.

Pertumbuhan pesat pengambilan pelajar memerlukan pertambahan kakitangan dalam pelbagai peringkat pengurusan bagi mengendali pelajar dan mengurus kemudahan untuk pelajar. Sehubungan dengan itu, UPM mempunyai sejumlah 4,414 kakitangan di pelbagai peringkat pengurusan. Seramai 75 kakitangan dalam kumpulan pengurusan dan profesional (akademik) yang terdiri daripada warganegara tempatan dan asing telah dilantik secara kontrak, manakala kakitangan sokongan seramai 37 orang telah dilantik secara kontrak bagi menjamin aktiviti universiti berjalan lancar.

Seramai 324 orang telah dilantik untuk mengisi jawatan kosong. Dari jumlah tersebut, 293 orang adalah untuk kumpulan pengurusan dan profesional dan selebihnya (31 orang) untuk kumpulan sokongan. Selain itu sejumlah 38

UPM's efforts to promote and market its programmes locally as well as overseas is an on-going affair. It has held road shows at Putra World Trade Centre, Kuching, Surabaya Bangkok, Haadyai, Beijing, Shanghai and Ho Chi Minh City. These promotional activities are largely aimed at creating awareness as well as providing updated information on programmes, courses and progress of the University.

The Distance Learning Programme (PJJ) registered a tremendous increase in student intake for 1999. There was a 59.5% increase over 1998 resulting in a total of 7,977 distance learning students in UPM. Besides the existing six courses, eight new courses have been introduced bringing the total to 14. The increase in demand for PJJ courses reflects an increase in awareness among Malaysians on the need to acquire higher education.

Collaborations with private colleges has been intensified. A total of 1,950 students have registered with 30 franchised colleges, which offer 14 Bachelor's programmes and 9 Diploma programmes. The overall enrolment stands at 7,606. Through this collaborations, 732 students graduated from UPM.

UPM has always been very active in research. For several years the University has received the highest IRPA research allocation. The 9 priority areas for IRPA research are IT, agroindustry, minerals and energy, manufacturing services, economics, health, social, environment and science. These research areas encompass 106 research projects with a total allocation of RM13,051,700. A further RM2.1 million has been allocated for short-term research projects.

Since 1 June 1999, a new research scheme was introduced for newly appointed lecturers. Under this scheme, a new lecturer is allocated RM10,000 to undertake research under the guidance and supervision of a senior lecturer or professor. This is to enable lecturers to be actively involved in both research and teaching.

The tremendous increase in student intake has seen the appointment of additional staff to ensure that adequate services and facilities are provided for the students. The University currently has 4,414 staff in various management categories. In the Professional and Management Group

orang telah dinaikkan pangkat. Tujuh orang dinaikkan pangkat kepada professor (VK7), 10 orang kepada professor madya dan 21 orang dalam skim yang sama. Seramai 27 orang telah meletakkan jawatan sementara 64 orang lagi telah bersara dari perkhidmatan. Mereka yang terlibat ialah 21 dalam kumpulan pengurusan dan profesional dan 43 orang dalam kumpulan sokongan.

Pembangunan merupakan salah satu agenda utama UPM dalam memastikan kemudahan prasarana dan infrastruktur untuk pelajar dapat disediakan mengikut perkembangan dan teknologi semasa. Ia juga bagi menjamin kualiti pelajar yang dikeluarkan nanti memenuhi keperluan negara akan datang. Sehubungan dengan itu, UPM telah melaksanakan beberapa projek termasuk pembinaan stadium mini, Kompleks Kejuruteraan dan Teknologi, Kompleks Akademik Pusat, bangunan Fakulti Sains Komputer dan Teknologi Maklumat, Bangunan Hal Ehwal Pelajar, Bangunan Kompleks Sains Sosial, Bangunan Fakulti Reka Bentuk dan Seni Bina dan Bangunan Pusat Penyelidikan dan Pembangunan.

Hubungan kerjasama dengan pelbagai pihak sama ada dari dalam atau luar negara dalam pelbagai bidang seperti penyelidikan, pendidikan, teknologi, teknologi maklumat dan sebagainya memberi ruang kepada UPM mempertingkatkan kemajuan dalam banyak aspek. Oleh yang demikian dalam tahun 1999 sebanyak 14 memorandum persefahaman telah ditandatangani bagi tujuan tersebut, manakala sebanyak 29 delegasi dari seluruh dunia telah melawat UPM bagi mewujudkan kerjasama.

Usaha ini yang dilaksanakan agar UPM bergerak seiring dengan perkembangan teknologi maklumat pada masa akan datang telah menjadikan UPM begitu kreatif dalam merancang program pendidikan dan penyelidikan yang boleh menyumbang kepada pembangunan negara. Sehubungan itu, Institut Multimedia ditubuhkan bagi tujuan mengkoordinasi, melaksana, melatih dan merangkaikan sumber-sumber di UPM bagi pembangunan multimedia dari segi pengajaran dan pembelajaran, pembangunan kandungan multimedia, penyelidikan, perundangan dan perkhidmatan profesional.

Kecemerlangan pelajar-pelajar UPM di peringkat antarabangsa membuktikan UPM mampu melahirkan pelajar yang setanding dengan universiti-universiti lain di

(Academics), 75 local and expatriate staffs and 37 support staff were appointed on a contract basis for the efficient and effective functioning of the University's activities.

Another 324 staff were appointed to fill in vacancies in various positions. Of this, 293 were for the Management and Professional Group and 31 for the Support Service Group. In addition, 38 others were promoted. Seven lecturers have been promoted to professors (VK7) and a further 21 to Associate Professors. Twenty-seven permanent staff had resigned whilst another 64 staff retired. These include 21 from the Management and Professional and 43 from Support Service Groups.

The rapid increase in student population necessitates a commensurate development in infrastructure and facilities that keeps abreast with current technological developments. UPM has embarked on a number of projects, viz. construction of a mini stadium, an Engineering and Technology Complex, Student Affairs Building, Central Academic Complex, Computer Science and IT Complex, Social Sciences Complex, Faculty of Design and Architecture, and Research and Development Centre Buildings.

UPM's numerous joint-venture and collaborative programmes and undertakings with local and foreign organisations in research, education, technology and IT has given a definite advantage in charting its growth. In 1999 alone, 14 MOU were signed with several organisations/institutions while 29 delegates from various parts of the world visited UPM to explore areas for cooperation and linkages.

To keep abreast with the rapid developments in IT, UPM has taken a creative approach in planning educational and research programmes that will help the country's development efforts. Additionally, the Multimedia Institute has been established to coordinate, implement, train and network resources in UPM for multimedia development in learning/teaching, multimedia content development, research, consultancy and professional services.

Several UPM graduates have received international accolades, indicative of our ability to produce high calibre students who can compete successfully in the international arena. The University is proud to place on record that two

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peringkat antarabangsa. Dua pelajar UPM telah berjaya mendapat tempat pertama dalam pertandingan "International Student Design Competition" anjuran International Federation of Landscape Architects (IFLA) di Bali, Indonesia dan di Korea.

Sukan yang menjadi aktiviti kokurikulum pelajar juga menjadi agenda utama UPM selain daripada akademik dan penyelidikan. Pembinaan Kolej Atlit di UPM hasil kerjasama UPM dengan MSN telah memberi peluang kepada ahli sukan untuk mempertingkatkan ilmu di samping memajukan lagi bidang sukan negara. Kecemerlangan dalam bidang sukan ditunjukkan melalui kejayaan-kejayaan yang dicapai sepanjang tahun 1999 apabila UPM menerima Anugerah Olimpian International Olympic Council (IOC) kerana kecemerlangan dalam bidang akademik dan sukan.

Selain itu UPM juga muncul sebagai johan keseluruhan sukan antara institusi pengajian tinggi negara dan sebahagian besar para atlit UPM telah mengganggotai Kontinjen Malaysia ke sukan antara universiti ASEAN pada 1 hingga 6 Disember 1999 dan telah meraih banyak kejayaan.

Akhir sekali, saya mengucapkan terima kasih kepada semua pihak yang telah memberikan kerjasama terutamanya kepada Lembaga Pengarah Universiti, Pegawai Utama Universiti, kakitangan akademik, kakitangan pengurusan dan kakitangan sokongan yang telah memberikan kerjasama dalam memastikan keunggulan UPM dalam pembelajaran, penyelidikan dan pembangunan.

Sekian terima kasih.



**Profesor Tan Sri Dato' Dr. Syed Jalaludin Syed Salim**

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B.Vet. Sc. & A.H. (Punjab), M.Phil., Ph. D.(London), F.A.S.

UPM students emerged champions in the *International Student Design Competition* organised by the Federation of Landscape Architects (IFLA) of Bali, Indonesia and Korea.

Sports as a co-curricular activity is important in UPM's agenda for the development of the individual. The construction of the Athletes' College at UPM, a joint venture between the National Sports Council (MSN) and UPM has provided sportsmen with an opportunity to hone both their academic knowledge and sporting talents. The award bestowed by the International Olympic Council for excellence in Sports and Academic fields on UPM is evident of the University's efforts towards developing the whole individual.

UPM emerged the overall champion in the Inter-University Sports Meet and a number of UPM sportsmen donned the national colours at the ASEAN University Meet from 1 – 6 December 1999.

Finally I wish to place on record my sincere appreciation to all especially the Board of Directors, the University's Principle Officers and academic and professional management and support service staffs who have contributed towards developing UPM as leading a centre of learning, research and development.

Thank you

## HAL EHWAL AKADEMIK ACADEMIC AFFAIRS



### SISWAZAH

Pada tahun 1999 seramai 7,739 pelajar telah bergraduat dan dianugerahkan ijazah serta diploma masing-masing. Secara keseluruhan, pertambahan siswazah yang bergraduat pada tahun 1999 ialah sebanyak 121.9% berbanding tahun 1998 iaitu yang tertinggi pernah dicapai oleh UPM. Pecahan bilangan siswazah mengikut peringkat pengajian adalah seperti terdapat di Jadual 2 dan Carta 3.

Pengeluaran graduan ijazah pertama UPM meningkat 131% berbanding tahun 1998, manakala graduan siswazah meningkat sebanyak 119.7% dan graduan diploma juga meningkat sebanyak 56.1% berbanding tahun 1998.

### GRADUATES

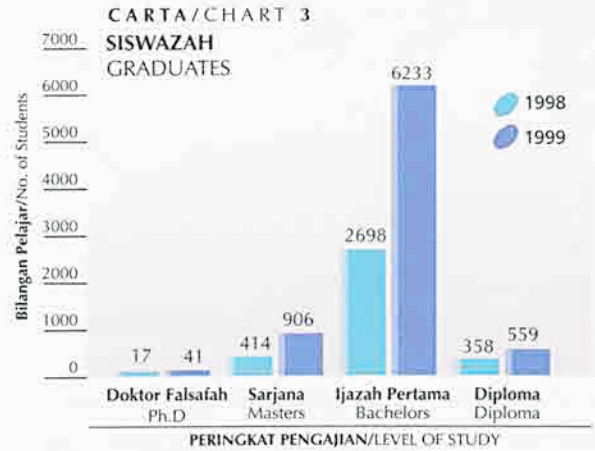
In 1999, a total of 7,739 students graduated and were conferred degrees or diplomas. Generally, the number of students who graduated in 1999 increased by 121.9% compared to 1998, which is the highest achieved by UPM. The breakdown of graduates according to various study programmes is shown in Table 2 and Chart 3.

Compared to 1998, the number of degree graduates increased to 131%, while for the postgraduate, the increase was 119.7% and for Diplomas, it was 56.1%.

JADUAL/TABLE 2

BILANGAN SISWAZAH MENGIKUT KATEGORI  
NUMBER OF GRADUATES BY CATEGORY

	1998	1999
Doktor Falsafah Ph.D	17	41
Sarjana Masters	414	906
Ijazah Pertama Bachelors	2698	6233
Diploma Diploma	358	559
JUMLAH/TOTAL	3487	7739



### Pengambilan Pelajar

Pada sesi 1999, Universiti Putra Malaysia telah mengambil seramai 15,907 pelajar dengan pecahan seperti di Jadual 3 dan Carta 4.

JADUAL/TABLE 3

PENGAMBILAN PELAJAR MENGIKUT PROGRAM  
STUDENT INTAKE BY PROGRAMME

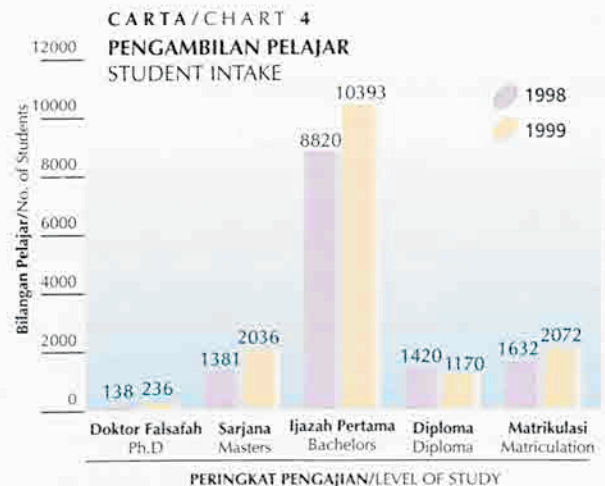
	1998	1999
Doktor Falsafah Ph.D	138	236
Sarjana Masters	1381	2036
Ijazah Pertama Bachelors	8820	10393
Diploma Diploma	1420	1170
Matrikulasi Matriculation	1632	2072
Jumlah/Total	13391	15907

### Student Intake

For the 1999 session, a total of 15,907 students registered for various study programmes in UPM. This is shown in Table 3 and Chart 4.

Overall, the student intake for UPM increased by some 18.79% compared to the previous year. According to the figures, the increase is particularly obvious for the post graduate programmes which saw a 49.57% increase while the Degree programme registered a 17.6% increase. However, the Diploma level programmes fell by 17.6% while the matriculation programmes saw 29.6% increase in student intake.

Secara keseluruhan, pertambahan dalam pengambilan pelajar ialah sebanyak 18.79% berbanding tahun sebelumnya. Mengikut pecahan, program siswazah menunjukkan pertambahan sebanyak 49.57%, ijazah pertama meningkat 17.8%, manakala diploma menurun sebanyak 17.6% dan program matrikulasi mengalami peningkatan sebanyak 26.9% dalam pengambilan pelajar.





## Enrolmen Pelajar

Pada tahun 1999, UPM mempunyai bilangan pelajar seramai 35,263 orang iaitu secara keseluruhannya meningkat sebanyak 14.1% berbanding tahun sebelumnya. Pelajar program Doktor Falsafah meningkat sebanyak 26.36% manakala bagi program Sarjana pula peningkatan adalah sebanyak 27.6%. Enrolmen bagi Program Ijazah Pertama juga menunjukkan peningkatan sebanyak 13.4%, Diploma meningkat 2.3% dan program Matrikulasi meningkat 10.7% berbanding tahun 1998. Enrolmen pelajar mengikut peringkat pengajian adalah seperti di Jadual 4 dan Carta 5.

JADUAL/TABLE 4

### ENROLMEN PELAJAR STUDENT ENROLMENT

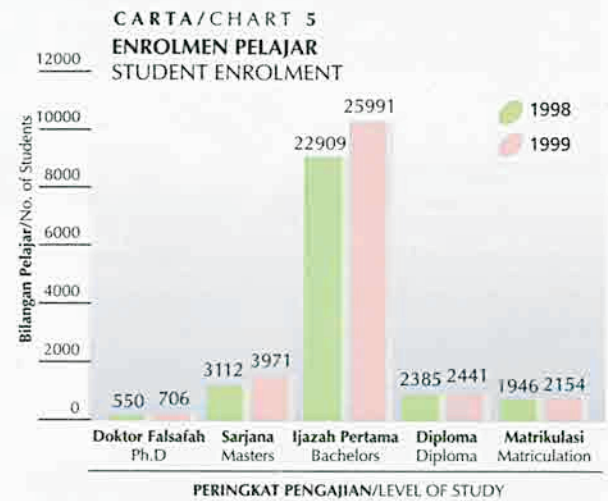
	1998	1999
Doktor Falsafah Ph.D	550	706
Sarjana Masters	3112	3971
Ijazah Pertama Bachelors	22,909	25991
Diploma Diploma	2385	2441
Matrikulasi Matriculation	1946	2154
<b>Jumlah/Total</b>	<b>30902</b>	<b>35263</b>

## PUSAT PENGAJIAN SISWAZAH

Universiti Putra Malaysia (UPM) telah berjaya menarik minat pelajar-pelajar daripada lebih 44 negara untuk mengikuti program pengajian siswazah di sini. Sehingga bulan Disember 1999, enrolmen pelajar siswazah ialah seramai 4,677 orang. Daripada jumlah tersebut, seramai 595 adalah pelajar luar negara (Jadual 5). Pecahan mengikut program pengajian (Master dan Doktor Falsafah) dapat dilihat seperti di dalam Jadual 6, sementara jumlah pengambilan pelajar baru bagi semester Mei dan November 1999 adalah seperti di Jadual 7.

## Student Enrolment

For the year 1999, the student population stood at 35,263 which represents a 14.1% increase over the previous year. Compared to 1998 figures, Ph.D students increased by 26.36%, while those pursuing their Masters increased by 27.6%, Bachelors by 13.4%, Diploma by 2.3% and the Matriculation programmes by 10.7%. The enrolment figures for various level of programmes are as shown in Table 4 and Chart 5.



## GRADUATE STUDIES CENTRE

UPM has been successful in drawing graduate students from 44 countries for its graduate studies programme. Up to December 1999, the graduate enrolment totalled 4,677. Of this total, 595 are foreign students (Table 5). The breakdown according to level of programmes (Ph.D and Masters) is as shown in Table 6 while the new intake of students for semesters May and November 1999 is as shown in Table 7.

JADUAL/TABLE 5

**ENROLMEN PELAJAR TEMPATAN & LUAR NEGARA**  
**ENROLMENT OF LOCAL AND FOREIGN STUDENTS**

	1998	1999
<b>Pelajar dalam negara</b> Local students	3137	4082
<b>Pelajar luar negara</b> Foreign students	525	595
<b>Jumlah/Total</b>	<b>3662</b>	<b>4677</b>



JADUAL/TABLE 6

**ENROLMEN PELAJAR SISWAZAH MENGIKUT**  
**PERINGKAT PENGAJIAN**

GRADUATE STUDENTS BREAKDOWN BY LEVEL OF STUDY

	1999
<b>Sarjana</b> Masters	3971
<b>Doktor Falsafah</b> Ph.D	736
<b>Jumlah/Total</b>	<b>4707</b>

JADUAL/TABLE 7

**JUMLAH KEMASUKAN PELAJAR BARU**  
**(MEI DAN NOVEMBER 1999)**  
**TOTAL INTAKE OF GRADUATE STUDENTS**  
**(MAY AND NOVEMBER)**

	1998	1999
<b>Sarjana</b> Masters	1107	929
<b>Doktor Falsafah</b> Ph.D	103	133
<b>Jumlah/Total</b>	<b>1210</b>	<b>1062</b>

Dalam usaha untuk memperkenalkan program pengajian siswazah UPM di luar negara, Pusat Pengajian Siswazah telah menyertai beberapa pameran pendidikan yang dianjurkan oleh Kementerian Pendidikan Malaysia dan juga organisasi luar. Pada tahun 1999, Pusat Pengajian Siswazah telah menyertai Pameran Pendidikan Malaysia yang telah diadakan di beberapa lokasi di dalam dan juga di luar negara (Jadual 8).

Pengalaman UPM dalam pengajian siswazah selama 24 tahun telah berjaya mengeluarkan ramai graduan Master dan Doktor Falsafah dalam pelbagai bidang Sains dan Teknologi serta Sains Sosial. Pada tahun 1999 seramai 947 pelajar siswazah telah bergraduasi.

In an effort to promote the graduate studies programme overseas, the Centre for Graduate Studies has participated in various educational fairs organised by the Ministry of Education and other foreign organisations. In 1999, UPM participated in the Malaysian Educational Exhibitions held locally and overseas (Table 8).

The Graduate Studies Centre in its 24 years of experience has successfully produced Masters and Ph.D students in various disciplines including Science and Technology, and the Social Sciences. In 1999, 947 graduates convocated with Masters and Ph.D degrees

JADUAL/TABLE 8

**LOKASI PAMERAN**  
**LOCATION OF EXHIBITIONS**

<b>PAMERAN DALAM NEGARA</b> LOCAL EXHIBITIONS	<b>PAMERAN LUAR NEGARA</b> OVERSEAS EXHIBITIONS
<b>Kuching, Sarawak</b>	<b>Surabaya, Indonesia</b>
<b>Pusat Dagangan Dunia Putra, Kuala Lumpur</b> Putra World Trade Centre, Kuala Lumpur	<b>Bangkok dan Haadyai, Thailand</b>
<b>Kementerian Pertahanan Malaysia, Kuala Lumpur</b> Ministry of Defence, Kuala Lumpur	<b>Beijing dan Shanghai, China</b>
	<b>Bandar raya Ho Chi Minh, Vietnam</b>



## PENDIDIKAN JARAK JAUH (PJJ)

Pada tahun 1999, lapan program baru ditawarkan oleh IDEAL menjadikan jumlah yang ditawarkan ialah 14 program iaitu:

### Program 1998

- Sarjana Sains Pembangunan Sumber Manusia (MSHRD)
- Bacelor Pendidikan (PBMP)
- Bacelor Pendidikan (TESL)
- Bacelor Pendidikan (B&K)
- Bacelor Sains Komputer (BSK)
- Bacelor Komunikasi

### Program baru yang ditawarkan pada tahun 1999

- Sarjana Komunikasi Korporat
- Bacelor Sastera (Bahasa dan Linguistik Melayu)
- Bacelor Sastera (Bahasa Inggeris)
- Bacelor Sains (Kepujian) Matematik
- Bacelor Sains (Kepujian) Major Statistik
- Bacelor Sains dengan Pendidikan (Kepujian) Matematik
- Bacelor Sains dengan Pendidikan (Kepujian) Statistik
- Diploma Pembangunan Belia (Antarabangsa)

Tahun 1999 merupakan tahun pengambilan pelajar paling ramai iaitu seramai 2,874 orang menjadikan bilangan keseluruhan pelajar PJJ berjumlah 7,977. Ini menunjukkan peningkatan sebanyak 59.5% berbanding tahun sebelumnya. Pecahan bilangan pelajar mengikut program seperti di Jadual 9.

## INSTITUTE FOR DISTANCE EDUCATION AND LEARNING (IDEAL)

In 1999, Distance Education and Learning (PJJ) offered eight new programmes bringing the total programmes to 14.

### Programmes offered in 1998

- Masters of Science in Human Resource Development
- Bachelor of Education (PBMP)
- Bachelor of Education (TESL)
- Bachelor of Education (B&K)
- Bachelor of Computer Science (BSK)
- Bachelor of Communication

### New Programmes offered in 1999

- Masters in Corporate Communication
- Bachelor of Arts (Language and Malay Linguistics)
- Bachelor of Arts (English Language)
- Bachelor of Science (Honours) Mathematics
- Bachelor of Science (Honours) Statistics Major
- Bachelor of Science in Education (Honours) Mathematics
- Bachelor of Science in Education (Honours) Statistics
- Diploma in Youth Development (International)

The year 1999, saw the highest student intake i.e. 2,874 students bringing the total enrolled in distance learning programmes to 7,977. This is an increase of 59.8% over the previous year. The breakdown of students pursuing various programmes is as shown in Table 9.

JADUAL/TABLE 9

**BILANGAN PELAJAR MENGIKUT PROGRAM**  
**NUMBER OF STUDENTS BY PROGRAMME**

PROGRAM PROGRAMME	1995/96	1996/97	1997/98	1998/99	1999/2000	JUMLAH
<b>BABE</b> BABE	0	0	0	0	251	251
<b>BABM</b> BABM	0	0	0	0	598	598
<b>BCOMM</b> BCOMM	0	0	0	395	580	975
<b>BPB&amp;K</b> BPB&K	0	431	636	248	313	1,628
<b>BPPBMP</b> BPPBMP	0	456	660	564	278	1,958
<b>BPTESL</b> BPTESL	0	277	450	385	424	1,536
<b>BSK</b> BSK	25	190	0	135	64	414
<b>BSM</b> BSM	0	0	0	0	19	19
<b>BSS</b> BSS	0	0	0	0	2	2
<b>BSEM</b> BSEM	0	0	0	0	190	190
<b>BSES</b> BSES	0	0	0	0	5	5
<b>MSCCOMM</b> MSCCOMM	0	0	0	0	29	29
<b>MSHRD</b> MSHRD	12	96	69	74	76	327
<b>Dip. Belia</b> Dip. Youth	0	0	0	0	45	45
<b>JUMLAH/TOTAL</b>	<b>37</b>	<b>1,450</b>	<b>1,815</b>	<b>1,801</b>	<b>2,874</b>	<b>7,977</b>

### Pengajaran dan Pembelajaran PJJ

Kaedah pengajaran dan pembelajaran PJJ adalah berteraskan pembelajaran fleksibel melalui modul belajar sendiri (self-instructed modules). Modul tersebut yang ditulis oleh pensyarah-pensyarah UPM bagi setiap kursus disediakan dalam bentuk cetak dan diedarkan kepada semua pelajar.

Pada tahun 1999, sebanyak 196 modul telah disediakan bagi kesemua program pengajian. Pada tahun ini juga IDEAL telah melantik seramai 317 tutor di seluruh negara. Dua latihan intensif telah dikendalikan oleh IDEAL untuk memastikan setiap tutor didedahkan kepada modul yang disediakan dan hal-hal yang berkaitan dengan kursus yang diajar.

Sehingga tahun 1999, IDEAL telah menyediakan sebanyak 40 pusat pembelajaran di bandar-bandar strategik di seluruh negara dengan kerjasama Yayasan Pelajaran Mara (YPM),

### Teaching and Learning in Distance Learning

The teaching and learning methodology for distance learning is based on flexible self-instructional modules. These self-instructional modules are written by UPM lecturers and are bound and distributed to all PJJ students.

In 1999, 196 modules were published for all the programmes. In the same year, IDEAL enlisted 317 tutors throughout the nation and organised two intensive courses to familiarise them with the modules as well as other aspects related to the programmes.

As of 1999, IDEAL had established 40 centres at strategic locations throughout the nation in collaboration with MARA Educational Foundation (YPM), CELCOM and several other private corporations. These centres are equipped with lecture and conference halls, examination halls, resource rooms, computers with internet facilities, and communication system and other audiovisual aids for teaching.

CELCOM dan beberapa syarikat swasta. Pusat-pusat pembelajaran dilengkapi dengan kemudahan bilik tutorial dan perbincangan, bilik peperiksaan, pusat sumber, komputer dengan kemudahan internet, kemudahan perhubungan, alat mengajar dan lain-lain.

### Promosi Program PJJ

Promosi program PJJ UPM telah dijalankan oleh IDEAL sama ada di dalam atau luar negara. Aktiviti promosi dan penerangan telah ditujukan kepada guru-guru, tentera, jururawat, polis serta pegawai kerajaan dan swasta di maktab perguruan, pusat pembelajaran, sekolah, pusat latihan tentera dan sebagainya. Promosi melalui radio terutama di Sabah dan Sarawak juga telah diadakan. Di samping itu, promosi luar negara juga telah diadakan seperti di Singapura, Thailand, Indonesia, Brunei dan China. IDEAL turut menerima pengunjung dari luar negara seperti dari Myanmar, Mauritius, United Kingdom dan South Florida serta Amerika Syarikat.

Di samping itu, pegawai IDEAL turut sama melibatkan diri secara aktif seiring dengan perkembangan dan kemajuan PJJ. Antara aktiviti yang disertai ialah Bengkel Pendidikan Jarak Jauh di Pulau Pinang, Sarawak Education Fair dan Seminar/ Mesyuarat PJJ di Brunei, Thailand, Filipina, China dan Indonesia.

### Perkhidmatan Sokongan

Pada tahun 1999 juga, IDEAL telah mempromosikan segala kemudahan dan perkhidmatan termasuk Dewan Persidangan, kemudahan catering dan bilik penginapan. Pelbagai kursus dan seminar peringkat antarabangsa telah diadakan di IDEAL. Antaranya:

- Seminar Halatuju Pendidikan Tinggi – Kementerian Pendidikan
- Bengkel Halatuju Program Sains IPTA
- Bengkel Antarabangsa “Wireless Internet Acces”
- Pelancaran Tabung Kosovo
- Jamuan Makan Jemaah Konvokesyen UPM
- Majlis-majlis perkahwinan.

### PJJ Promotional Activities

IDEAL has undertaken extensive campaigns both locally and overseas to promote its distance learning programmes. These campaigns were targeted at teachers, military personnel, government staff, private teacher training colleges, educational centres, schools and military training centres. PJJ programmes have also been aired in Sabah and Sarawak. Overseas promotional campaigns were undertaken in Singapore, Thailand, Indonesia, Brunei and China. IDEAL has also been visited by delegates from Myanmar, Mauritius, United Kingdom and South Florida, and the United States.

In addition, IDEAL officers have contributed actively to the development and promotion of PJJ. Among the activities that these officers have been involved in were a Distance Learning Workshop in Pulau Pinang, Sarawak Education Fair and Seminars and Conferences on Distance Learning in Brunei, Thailand, Philippines, China and Indonesia.

### Support Services

In 1999, IDEAL has also promoted its services and facilities which include a Conference Hall, Catering Service and Accommodation Blocks. Various international courses and seminars were held at these facilities such as:

- Seminar on the Direction of Higher Education – Ministry of Education
- Workshop on the Direction of Science Programmes – IPTA
- International Workshop on “Wireless Internet Access”
- Kosovo Fund Launch
- Convocation Board Dinner
- Wedding Functions

## HAL EHWAL PELAJAR STUDENT AFFAIRS



### Biasiswa dan Pinjaman Pelajar

Bahagian Hal Ehwal Pelajar telah mendapatkan penajaan biasiswa dan pinjaman kepada pelajar bagi tahun 1999 melalui penganjur seperti di Jadual 10.

### Scholarships and Loans

For the year 1999, the Student Affairs Division has assisted in seeking financial support for students in the form of scholarships and loans through numerous sponsors (Table 10).

**JADUAL/TABLE 10**  
**BILANGAN BIASISWA/PINJAMAN YANG DITAWARKAN KEPADA PELAJAR**  
**UPM BAGI TAHUN 1999**  
**SCHOLARSHIPS/LOANS AWARDED TO UPM STUDENTS IN 1999**

Bil. Penganjur No. Sponsors	Bilangan Tawaran No. Awarded
1. Perbadanan Tabung Pendidikan Tinggi Nasional (PTPTN) (Pinjaman/Loan)	8527
2. Kementerian Pendidikan Malaysia (KPM) (Pinjaman/Loan)	544
3. Kementerian Pendidikan Malaysia (KPM) (Biasiswa/Scholarship)	120
4. Jabatan Perkhidmatan Awam (JPA) (Biasiswa/Scholarship)	161
5. Petronas (Pinjaman/Loan)	8
6. Sime Darby (Biasiswa/Scholarship)	4
7. Kerajaan /Yayasan Negeri dan Badan-badan Penaja Swasta yang lain (Pinjaman/Loan)	126
<b>JUMLAH/TOTAL</b>	<b>9490</b>

## Aktiviti Sukan

### Sukan Kolej Kediaman

Sukan kolej kediaman telah bermula pada 15 Julai 1999 dan dijangka berakhir pada 26 Januari 2000. Sebanyak 24 acara sukan padang dan gelanggang telah dipertandingkan.

### Kejohanan-kejohanan Terbuka

Pusat Sukan sentiasa menyokong penuh kelab sukan pelajar menyertai Kejohanan-kejohanan Terbuka di Lembah Kelang atau tempat-tempat lain

Di Shah Alam pada 1999 Half Marathon yang diadakan pada 3 Oktober 1999, pelari UPM iaitu M. Arul Thevar telah menjadi Johan bagi acara 21 km (lelaki). Manakala bagi acara 10km. (wanita) pula, pelari UPM iaitu Noraseela Mohd.Khalid yang merupakan pemenang Pingat Emas Sukan SEA '99 mendapat tempat ketujuh dan M. Ganesan menjadi Naib Johan bagi acara 10km (lelaki).

Dalam Kejohanan Tujuh Sebelah Jonah Jones 1999, pada 21 dan 22 Ogos 1999, pasukan ragbi UPM Serdang, Angels telah berjaya mengekalkan kejuaraan pada tahun ini dan menjadi juara dua tahun berturut-turut dalam kategori universiti. Kejohanan ini telah disertai sebanyak 16 pasukan termasuk pasukan dari Singapura.

### Sukan Antara Universiti (SUKMAS) 1999

Sukan Antara Universiti telah diadakan di Universiti Kebangsaan Malaysia pada 17 November hingga 20 November 1999. Sebanyak tujuh acara dipertandingkan dan UPM menjadi juara keseluruhan dengan mendapat 37 pingat emas.



## Sports Activities

### Inter-college Games

The Inter-College Games started on 15 July 1999 and is scheduled to end by January 2000. A total of 24 field and track events are expected to be contested.

### Open Championships

The Sports Unit has always encouraged the students sports clubs to compete in championships in and around Klang Valley. In the 1999 Half Marathon held at Shah Alam on 3 October 99, M. Arul Thevar of UPM won the Men's 21 km race. In the 10 km (ladies) event, SEA Games gold medalist, Noraseela Mohd. Khalid, was placed seventh whilst M. Ganesan emerged the winner for the 10 km men's event.

In the Seven-a-side Jonah Jones 99 Rugby Competition held on 21 and 21 August 1999, UPM's Serdang Angels successfully defended their title for the second consecutive year. They also won in the University category for the second time. Sixteen teams including teams from Singapore participated in this championship.

### Inter-Varsity Games (SUKMAS) 1999

For 1999, the Inter-Varsity Games were hosted by UKM from 17 November to 20 November 1999 with seven events being contested. UPM emerged the overall winner with 37 gold medals.



JADUAL/TABLE 11

AKTIVITI KEBUDAYAAN DAN KEBAJIKAN  
CULTURAL AND WELFARE ACTIVITIES

1	<b>Majlis Sambutan Aidilfitri</b> Aidilfitri Celebration
2	<b>Program Hari Keluarga Bersama Anak Yatim</b> Family Day Programme with Orphans
3	<b>Hari Keluarga Sekretariat KTDI</b> KTDI Secretariat's Family Day
4	<b>Malam Anugerah dan Sambutan Aidilfitri</b> Awards' Nite and Hari Raya Celebration
5	<b>Kem Kemahiran Diri</b> Self Development Camp
6	<b>Aktiviti Aspirasi Nahwan Nur</b> Nahwan Nur Aspiration Activity
7	<b>Program Wajadiri Silat Cekak Hanafi Peringkat Kebangsaan</b> National Programme Wajadiri Silat Cekak Hanafi
8	<b>Ekspedisi Taman Negara</b> National Park Expedition
9	<b>Pengambilan Ahli Baru</b> New Recruitments
10	<b>Aktiviti Riadah</b> Vacation Activity
11	<b>Kem Interaksi</b> Interaction Camp
12	<b>Pesta Kesenian Rakyat '99</b> National Arts Festival '99
13	<b>Majlis Pengambilan Ahli Baru</b> Reception for New Recruitment
14	<b>Kursus Pemantapan Generasi dan Majlis Ramah Mesra Gayung</b> Pemantapan Generasi course and Ramah Mesra Gayung Reception
15	<b>Pesta Dikir Barat</b> Dikir Barat Festival
16	<b>Majlis Ujian Kenaikan Bengkung</b> Majlis Ujian Kenaikan Bengkung
17	<b>Hari Keluarga</b> Family Day
18	<b>Minggu Teater UPM</b> UPM Theatre Week
19	<b>Kejohanan Seni Mempertahankan Diri Kebangsaan</b> National Self-Defence Championships
20	<b>Minggu Eksplorasi Kesenian Malaysia</b> Malaysian Arts Exploration Week
21	<b>Rekreasi Sukan di Port Dickson, NS</b> Sports Recreation at Port Dickson, NS
22	<b>Malam Tanglung '99</b> Tanglung Nite '99
23	<b>Pertandingan Mencipta Lagu Puisi</b> Song Writing Competition
24	<b>Malam Pengucapan Puisi</b> Poem Reciting Night
25	<b>Kursus Bina Diri Cekak</b> Cekak Self-Development Course
26	<b>Program Rakan Seni Budaya Perkampungan Seni Teater antara IPT '99</b> Folk Arts Programme Arts Theatre IPT'99
27	<b>Pertandingan Karate Do IPT</b> IPT Karate Do Championships
28	<b>Perkemahan di Sg. Congkak</b> Camping at Sg. Congkak
29	<b>Rehlan Nahwan Nur '99</b> Rehlan Nahwan Nur '99
30	<b>Konsert Muzik</b> Music Concert
31	<b>Pertandingan Dikir Barat antara Universiti di USM</b> Inter-University Dikir Barat Competition, USM
32	<b>Pameran Komputer</b> Computer Exhibition
33	<b>Kursus Intensif</b> Intensive Course
34	<b>Menyertai Kejohanan Silat Seni dan Olahraga Terbuka</b> Participation in Open Athletics and Silat Seni Championships
35	<b>Program Pengambilan Ahli Baru</b> New Intake Programme
36	<b>Malam Cetusan Alam dan Insan</b> Cetusan Alam dan Insan Night
37	<b>Malam Prisma Cahaya</b> Prisma Cahaya Night
38	<b>Pertandingan Lagu-lagu Allahyarham Sudirman</b> Allahyarham Sudirman Song Competition
39	<b>Pengambilan Ahli Baru</b> Recruitment of New Members



## Kaunseling dan Kerjaya

Pada tahun ini seramai 273 pelajar UPM telah mendapatkan perkhidmatan kaunseling. Jumlah ini tidak termasuk pelajar-pelajar yang mendapatkan bimbingan tentang pembelajaran dan maklumat kerjaya. Bilangannya rendah berbanding tahun 1998 kerana ramai kaunselor yang terlibat dengan aktiviti-aktiviti pelajar seperti penasihat persatuan yang diadakan oleh Bahagian Hal Ehwal Pelajar.

Jadual 12 dan Carta 6 menunjukkan bilangan pelajar yang mendapatkan khidmat Unit Kaunseling mengikut jantina.

**JADUAL/TABLE 12**  
**PELAJAR YANG MENERIMA KHIDMAT KAUNSELING MENGIKUT JANTINA**  
**STUDENTS WHO RECEIVED COUNSELLING SERVICES BY GENDER**

KATEGORI/CATEGORY	JUMLAH/TOTAL
Jantina/Sex	
Lelaki Male	71
Perempuan Female	202
<b>JUMLAH/TOTAL</b>	<b>273</b>

Dari segi masalah pelajar pula (mengikut Mooney Checklist), 81 kes melibatkan masalah pengajian, diikuti dengan masalah sosial sebanyak 62 kes, dan 50 kes lagi melibatkan masalah peribadi. Jadual 13 dan Carta 7 menunjukkan Kategori masalah yang dihadapi oleh pelajar.

**JADUAL/TABLE 13**  
**MASALAH PELAJAR MENGIKUT KATEGORI**  
**PROBLEMS OF STUDENTS BY CATEGORY**

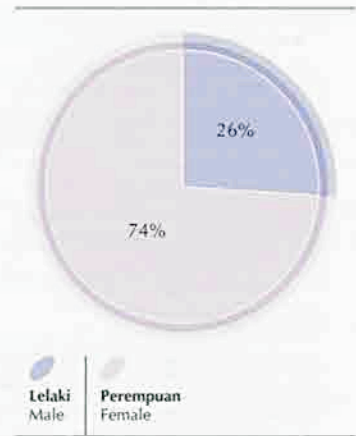
KATEGORI MASALAH PROBLEM CATEGORY	JUMLAH TOTAL
Kesihatan/Health	2
Kewangan/Financial	11
Sosial/Social	62
Peribadi/Personal	50
Seks/Sexual	8
Keluarga/Family	21
Pengajian/Studies	81
Kerjaya/Career	32
Pengajaran/Teaching	6
<b>Jumlah/Total</b>	<b>273</b>

## Career & Counselling

In 1999, a total of 273 students received counselling services. This total is exclusive of those seeking advice on studies and careers. These figures were lower than in 1998 as many counsellors were involved in activities for associations conducted by the Student Affairs Department.

Table 12 and Chart 6 shows the number of students who received counselling services by gender.

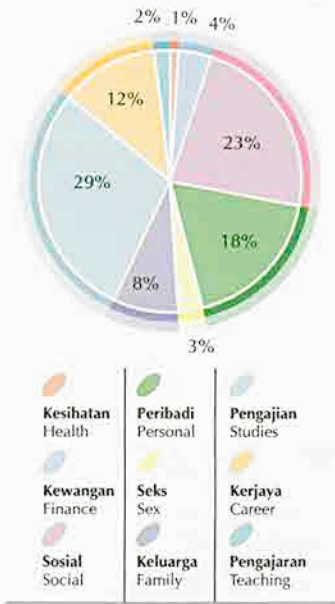
**CARTA/CHART 6**  
**KATEGORI PELAJAR MENGIKUT JANTINA**  
**STUDENT CATEGORY BY GENDER**



In terms of students problems, (based on the Mooney Problem checklist), 81 cases were related to studies, closely followed by 62 with social problems while 50 had personal problems. Table 13 and Chart 7 show the problems faced by the students.

CARTA/CHART 7

**KATEGORI MASALAH PELAJAR**  
STUDENT PROBLEMS BY CATEGORY



**Group Counselling**

In 1999, the Career & Counselling Unit organised four group counselling programmes. The first such programme involved students who had previously been given warning and the counselling session was conducted by appointed officers. Three sessions were held under this programme. The second and third group sessions were conducted for volunteers who would in turn become facilitators in the 'Sayang Selasih' Programme held at Alor Gajah, Malacca. The fourth group session was conducted for 6<sup>th</sup> College students, who were planning to establish a mentor-mentee system at the college.

**Peer Guidance Club**

Courses for new members were conducted by ex-members and unit counsellors. Those who have had PRS training in schools were encouraged to continue offering their services in the University. Seven activities were conducted to achieve the expected objective. These activities were divided into two categories. The first involved students within the campus while the second involved school students.



**Kaunseling Kelompok**

Pada tahun 1999, Unit Kaunseling dan Kerjaya telah menjalankan empat program kaunseling kelompok. Kelompok pertama terdiri daripada pelajar-pelajar yang mendapat status amaran yang menjalani sesi kaunseling individu dengan pegawai yang dilantik. Sebanyak tiga sesi dapat dijalankan dengan kelompok ini. Kelompok kedua dan ketiga adalah kelompok pelajar sukarela yang ingin menjadi fasilitator Program 'Sayang Selasih' yang dikendalikan di Alor Gajah, Melaka. Kelompok keempat terdiri daripada pelajar Kolej ke 6 yang ingin mewujudkan sistem mentor dan mentee di kolej tersebut.

**Kelab Bimbingan Rakan Siswa**

Kursus-kursus untuk melatih ahli-ahli baru telah dapat dijalankan dengan bantuan ahli-ahli lama dan kaunselor-kaunselor di unit. Unit ini menggalakkan pelajar-pelajar yang memang sudah menjadi ahli PRS di sekolah untuk meneruskan perkhidmatan mereka di universiti. Mereka digalakkan untuk berkongsi pengetahuan dan pengalaman dengan ahli-ahli di sini. Sebanyak tujuh aktiviti telah dijalankan dan mencapai matlamat yang diharapkan. Aktiviti dibahagikan kepada dua bahagian. Bahagian pertama bersama pelajar-pelajar di kampus dan bahagian kedua bersama masyarakat luar kampus khususnya murid-murid sekolah.



## Kesihatan

Pada tahun 1999, seramai 62,602 (Carta 8) pesakit menerima rawatan di Pusat Kesihatan Pelajar. Pecahan kedatangan pesakit ialah seramai 56,511 orang menerima rawatan di Klinik Perubatan dan seramai 6,091 orang menerima rawatan di Klinik Pergigian. Seramai 1,052 menerima rawatan disebabkan kecederaan kemalangan jalan raya.

Lima rawatan utama di Klinik Pergigian ialah:

- Tampalan gigi 2,847 (35.77%)
- Bersih gigi 2,138 (26.86%)
- Cabut gigi 616 (7.74%)
- Rawatan gusi bengkak 456 (5.73%)
- Rawatan-rawatan lain 426 (5.35%)

Lima rawatan-rawatan lain utama kedatangan pesakit di Klinik Perubatan ialah:

- Penyakit sistem pernafasan 25,108
- Penyakit kulit 6,723
- Penyakit sistem pemakanan 4,026
- Penyakit urat saraf 3,868
- Kecederaan 3,807

## Unit Latihan dan Perundingan Akademik

### Penempatan Pelajar

Bagi sesi 1999/2000, Unit Latihan dan Perundingan Akademik telah menyelaraskan penempatan seramai 12,913 pelajar. Pelajar ini telah ditempatkan di 12 buah kolej. (Statistik bilangan sila lihat Jadual 14)

## Health

A total of 62,602 (Chart 8) students were given treatment at the Students Health Centre (PKP) in 1999. Of this, 56,511 were treated at the Health Clinic and 6,091 were treated at the Dental Clinic. A total of 1,052 received treatment for road accidents.

Five main categories of treatment at the Dental Clinic were:

- Fillings 2,847 (35.77%)
- Scaling 2,138 (26.86%)
- Extraction 616 (7.74%)
- Gum Problem 456 (5.73%)
- Others 426 (5.35%)

The five major reasons as to why students came to the Health Clinic were:

- Respiratory problems 25,108
- Skin diseases 6,723
- Food-related problems 4,026
- Vein-related problems 3,868
- Injuries 3,807

**CARTA / CHART 8**  
**KEDATANGAN PELAJAR**  
**BERDASARKAN JENIS PENYAKIT**  
**STUDENT'S VISITS BY AILMENT**



JADUAL/TABLE 14

PENEMPATAN PELAJAR MENGIKUT KOLEJ STUDENT ACCOMMODATION BY COLLEGE		
KOLEJ COLLEGE		JUMLAH TOTAL
1. Kolej Mohamad Rashid College Mohamad Rashid		1,033
2. Kolej Kediaman Kedua Second Residential College		298
3. Kolej Tun Dr. Ismail College Tun Dr Ismail		987
4. Kolej Canselor Chancellor's College		970
5. Kolej Kediaman Kelima 5th Residential College		1,184
6. Kolej Kediaman Keenam 6th Residential College		1,074
7. Kolej Sultan Alaedin Sulaiman Shah Sultan Alaedin Sulaiman Shah College		1,154
8. Kolej Tun Perak Tun Perak College		970
9. Kolej Pendita Za'ba Pendita Za'ba College		1,399
10. Kolej Kediaman Kesepuluh 10th Residential College		1,150
11. Kolej Kediaman Kesebelas 11th Residential College		1,255
12. Kolej Matrikulasi Matriculation College		1,439
<b>JUMLAH/TOTAL</b>		<b>12,913</b>

### Latihan kepada Pelajar

Sepanjang Jan-Okt 1999, unit ini dengan kerjasama Unit Kaunseling telah mengendalikan beberapa siri bengkel dan seminar. Antaranya ialah Bengkel Kecemerlangan Akademik bagi pelajar Fakulti Perhutanan dan Jabatan Fizik dari Fakulti Sains dan Alam Sekitar serta Seminar Kepimpinan di Bagan Lalang pada 7 - 11 Julai 1999

### Sistem Maklumat Pelajar (SMP), Bahagian Modul Hal Ehwal Pelajar

Unit ini telah mengadakan beberapa siri perbincangan dengan Bahagian Teknologi Maklumat mengenai pembinaan modul SMP dan HEP. Sehingga kini, Bahagian Teknologi Maklumat telah selesai membina lapan daripada sembilan modul dan sedang dalam rangka untuk menginstal ke komputer-komputer pegawai. Walau bagaimanapun, proses instalasi ini tidak dapat dilakukan sepenuhnya. Ini disebabkan beberapa pegawai tidak menepati spesifikasi komputer yang diperlukan.

### Academic Consultancy and Training Unit

#### Students' Placement

For the 1999/2000 session, a total of 12,913 students were accommodated in twelve colleges. Table 14 shows the data for Students' Accommodation:

#### Student Training

From January to October 1999, this unit with the cooperation of the Guidance & Counselling Unit conducted a series of workshops and seminars. One such workshop on Academic Excellence was organised for the Faculty of Forestry and the Physics Department of the Faculty of Science and Environment. A Leadership Seminar was held at Bagan Lalang from 7-11 July 1999 for students.

#### Students' Information System (SMP), Student Affairs Module Division

This unit has held various discussions with the Division of Information Technology to develop the SMP and HEP module. To date, eight to nine modules have been installed whilst plans are underway to install them to computers for officers. However, the installation process has been slow due to incompatibility of computers with the system in place.

## PENYELIDIKAN RESEARCH



### Penyelidikan IRPA

Pada tahun 1999, sebahagian besar dari 444 projek penyelidikan IRPA telah berjalan dan dijangka selesai pada tahun 1999-2000. Ia melibatkan pembiayaan RM89,924,251. Pada tahun 1999 sebanyak 229 permohonan IRPA dalam pusingan pertama dan kedua diproses. Sebanyak 106 permohonan diluluskan dengan peruntukan sejumlah RM13,051,700.

Tumpuan penyelidikan IRPA yang dijalankan mulai tahun 1996 dan dijangka selesai pada tahun 1999-2000 seperti dalam Jadual 15 dan Jadual 16 dan Carta 9.

### Penyelidikan Jangka Pendek

Sebanyak 231 projek penyelidikan jangka pendek telah diluluskan. Ia melibatkan pembiayaan sebanyak RM2,132,195.00. Tempoh projek jangka pendek mengambil masa satu tahun. Mengikut pecahan, bilangan projek jangka pendek seperti dalam Jadual 17.

### IRPA Research

In 1999, a majority of the 444 IRPA approved ongoing research projects are expected to be completed during the 1999-2000 period. These projects entail a total allocation of RM89,924,261. For the year 1999, a total of 229 IRPA applications went through the first and second rounds of processing. Only 106 were approved with an allocation totalling RM13,051,700.

The research focus of IRPA projects carried out beginning 1996 and the number expected to be completed by 1999-2000 are as shown in Tables 15 and 16 and Chart 9.

### Short-term Research

UPM has also been allocated RM2,132,195.00 to finance 231 short-term research projects. These projects are to be completed within a year. The breakdown of short-term projects approved by the Faculties and the allocation is shown in Table 17.

JADUAL/TABLE 15

**FOKUS PENYELIDIKAN IRPA MULAI 1996 YANG DIJANGKA TAMAT 1999-2000**  
RESEARCH FOCUS UNDER IRPA FROM 1996 AND NUMBER EXPECTED TO BE COMPLETED BY 1999-2000

Pusat Penyelidikan Research Centre	Projek Projects
<b>Agroindustri</b> Agroindustry	247
<b>Galian &amp; Tenaga</b> Minerals & Energy	4
<b>Pembuatan</b> Manufacturings	40
<b>Perkhidmatan &amp; IT</b> IT & Services	13
<b>Ekonomi</b> Economics	15
<b>Kesihatan</b> Health	19
<b>Sosial</b> Social	26
<b>Alam Sekitar</b> Environment	24
<b>Sains</b> Science	56
<b>Jumlah /Total</b>	<b>444</b>

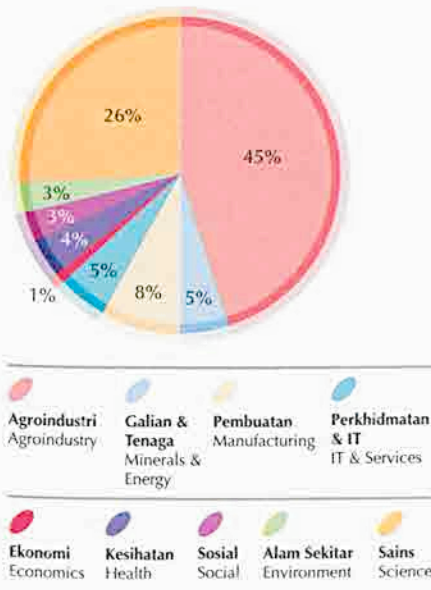
JADUAL/TABLE 16

**FOKUS PENYELIDIKAN IRPA MULAI 1996**  
RESEARCH FOCUS UNDER IRPA FROM 1996

Pusat Penyelidikan Research Centre	Projek Projects
<b>Agroindustri</b> Agroindustry	48
<b>Galian &amp; Tenaga</b> Minerals and Energy	5
<b>Pembuatan</b> Manufacturing	9
<b>Perkhidmatan &amp; IT</b> IT & Services	5
<b>Ekonomi</b> Economics	1
<b>Kesihatan</b> Health	4
<b>Sosial</b> Social	3
<b>Alam Sekitar</b> Environment	3
<b>Sains</b> Science	28
<b>Jumlah /Total</b>	<b>106</b>

CARTA/CHART 9

**FOKUS PROJEK PENYELIDIKAN 1999**  
FOCUS OF RESEARCH PROJECTS 1999



JADUAL/TABLE 17

**PROJEK JANGKA PENDEK (1999)**  
SHORT TERM PROJECTS (1999)

Fakulti Faculty	Bil. Projek No. of Projects	Jumlah Diluluskan (RM) Total Approved
<b>Pengajian Bahasa Moden</b> Modern Language Studies	7	51,612
<b>Ekologi Manusia</b> Human Ecology	2	19,230
<b>Ekonomi dan Pengurusan</b> Economics and Management	24	196,749
<b>Kejuruteraan</b> Engineering	42	416,880
<b>Institut Multimedia</b> Multimedia Institute	1	10,000
<b>Pengajian Pendidikan</b> Educational Studies	33	243,524
<b>Perhutanan</b> Forestry	13	128,000
<b>Pertanian</b> Agriculture	24	239,700
<b>Perubatan &amp; Sains Kesihatan</b> Medical & Health Science	16	160,000
<b>Reka Bentuk &amp; Seni Bina</b> Design & Architecture	1	10,000
<b>Sains Komputer dan Teknologi Maklumat</b> Computer Science & IT	7	63,550
<b>Sains Makanan &amp; Bioteknologi</b> Food Science & Biotechnology	6	60,000
<b>Sains &amp; Pengajian Alam Sekitar</b> Science & Environmental Studies	35	344,950
<b>Universiti Putra Malaysia Terengganu</b> Universiti Putra Malaysia Terengganu	19	177,200
<b>Perubatan Veterinar</b> Veterinary Medicine	1	10,000
<b>Jumlah/Total</b>	<b>231</b>	<b>2,132,195</b>

## Geran Penyelidikan Pensyarah Lantikan Baru

Pihak Universiti telah mewujudkan skim penyelidikan untuk pensyarah lantikan baru berkuat kuasa 1 Jun 1999. Di bawah skim ini pensyarah lantikan baru diperuntukkan maksimum RM10,000 untuk penyelidikan di bawah bimbingan dan pengawasan seorang profesor atau pensyarah kanan.

## Pameran

Dua pameran penyelidikan peringkat negara telah disertai. Pertama ialah penyertaan pameran dalam Agriculture Horticulture and Agrotourism Show (MAHA 99) bagi projek R&D IRPA dalam bidang Bioindustri pada 26 – 31 Ogos 1999 di Stadium Putra, Bukit Jalil, Kuala Lumpur. Pameran ini mempamerkan penemuan terbaru dalam bidang Agroindustri. Sebanyak tiga projek utama telah terpilih untuk pameran ini : berkenaan dengan jagung bijian – Putra J-58, kit diagnosa untuk penyakit tompok putih pada udang dan penggunaan semut hitam koko untuk mengawal perosak koko. ITEX di Pusat Pameran Antarabangsa Mines, Sungai Besi, Kuala Lumpur pada 25 – 26 September 1999. Pameran ini mempamerkan reka cipta dan reka bentuk alaf baru. Sebanyak dua reka cipta telah dipamerkan. Calon UPM, Encik Husaini bin Omar selaku ketua projek “Small-Pressuremeter” dari Fakulti Kejuruteraan telah berjaya di tempat ketiga (Hadihah Pingat Gangsa) dalam pertandingan reka cipta yang dijalankan semasa pameran ini.

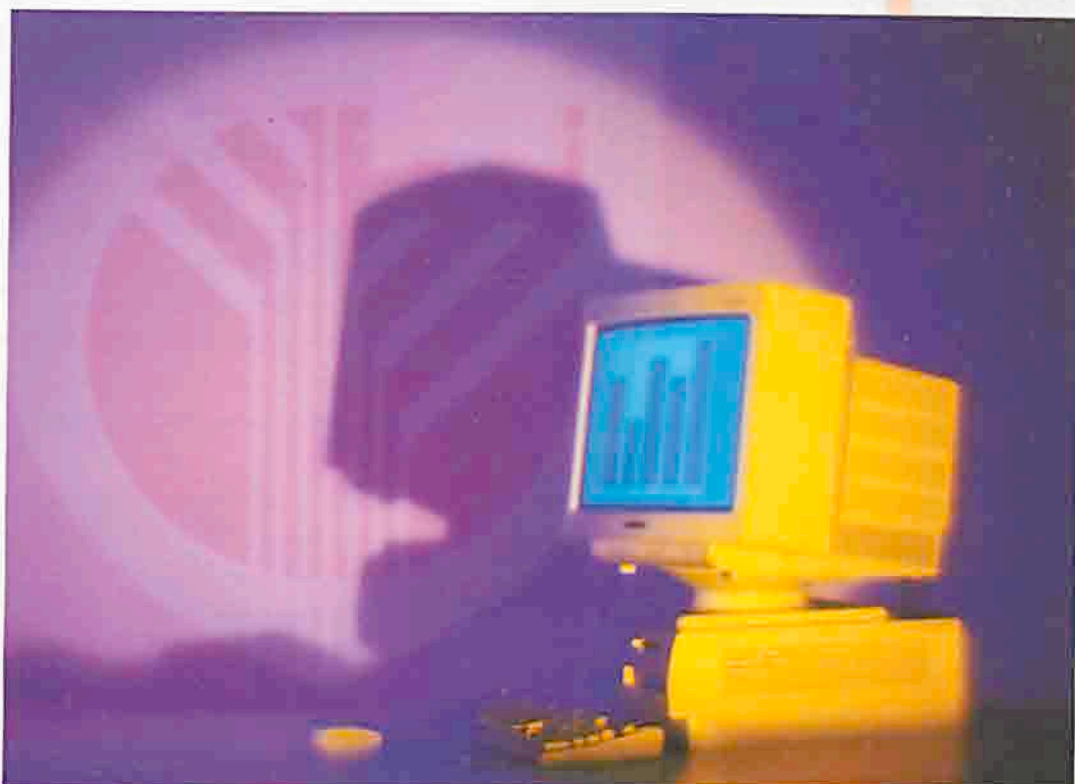
## Newly Appointed Lecturer’s Research Grant

In June 1999, UPM established a research scheme for new lecturers. Under this scheme a new lecturer is given a RM10,000 grant to undertake a project under the supervision of a senior lecturer or professor.

## Exhibition

UPM participated in two national exhibitions. One was the Agriculture, Horticulture and Agrotourism show (MAHA 99) in relation to IRPA R&D in Bioindustry from 26-31 August 1999 at Stadium Putra, Bukit Jalil, Kuala Lumpur. This exhibition showcased new techniques in Agroindustry. Three important projects were selected for the exhibition: the new corn variety – Putra J-58, a diagnostic kit for white spot disease identification in prawn, and use of black cocoa ants in the control of cocoa pests. The second exhibition was ITEX at MINES International Exhibition Centre, Sungai Besi, Kuala Lumpur from 25-26 September 1999 where new products and design for the new millennium were exhibited. En. Husaini Omar the project leader of Small Pressuremeter from the Faculty Engineering was awarded Third Prize in the design category at this Exhibition.

## JABATAN PENDAFTAR REGISTRY



### Pengurusan Sumber Manusia

Dalam tahun 1999 terdapat 4414 jawatan di UPM mengikut kategori seperti di Jadual 18.

Pada tahun 1999 UPM juga mempunyai seramai 75 kakitangan dalam kumpulan pengurusan profesional (Akademik) yang dilantik secara kontrak. Mereka ini terdiri daripada warganegara asing dan tempatan. Di samping itu untuk menjamin aktiviti universiti berjalan dengan lancar dan berkesan, universiti juga melantik 37 kakitangan sokongan secara kontrak.

### Pelantikan dan Kenaikan Pangkat

Pada tahun 1999, seramai 324 orang telah dilantik mengisi jawatan kosong. Daripada jumlah tersebut 293 dilantik ke jawatan Kumpulan Pengurusan dan Profesional dan 31 ke jawatan Kumpulan Sokongan. Pelantikan ke jawatan baru

### Human Resources Management

In 1999 the University had a total staff of 4,414. Table 18 shows the breakdown of posts according to category.

In 1999, a total of 75 (foreign and local) academic contract staff were appointed under the Professional Management Group. The University also appointed 37 support staff for the efficient and effective running of its activities.

JADUAL/TABLE 18

#### PENGURUSAN SUMBER MANUSIA HUMAN RESOURCE MANAGEMENT

Kumpulan/Group	Jawatan/Post
<b>Kumpulan Pengurusan Tertinggi (KPT)</b> Senior Management Group (KPT)	33
<b>Kumpulan Pengurusan &amp; Profesional (KPP)</b> Professional & Management Group (KPP)	1,557
<b>Kumpulan Sokongan</b> Support Services Group	2,824
<b>Jumlah/Total</b>	<b>4,414</b>

ini terdiri daripada jawatan bertaraf tetap, kontrak dan sementara berdasarkan sokongan menggantikan penyandang yang bersara, meletak jawatan, dinaikkan pangkat, dan dilantik semula ke jawatan baru dalam skim perkhidmatan yang lain.

Pada tahun 1999 seramai 38 orang telah dinaikkan pangkat. Pecahan mengikut kumpulan jawatan kenaikan pangkat pada tahun 1999 adalah seperti di Jadual 19.

JADUAL/TABLE 19

**PELANTIKAN DAN KENAIKAN PANGKAT  
APPOINTMENTS AND PROMOTIONS**

Jawatan/Position	Kenaikan Pangkat Promotion	Bilangan No.
<b>Pensyarah (Prof. Madya)</b> Lecturer (Assoc. Professor)	<b>Profesor (VK7)</b> Professors (VK7)	7
<b>Pensyarah</b> Lecturer	<b>Profesor Madya (DS1)</b> Assoc. Professors (DS1)	10
<b>Kumpulan Pengurusan &amp; Profesional (Bukan Akademik)</b> Management & Professional Group (Non-academic)	<b>Dalam skim yang sama</b> In the same scheme	21

### Peletakan Jawatan dan Pengurusan

Seramai 27 kakitangan UPM telah meletak jawatan. Peletakan jawatan ini disebabkan mendapat tawaran pekerjaan baru di organisasi lain dan tamat tempoh kontrak perkhidmatan. Pecahan mengikut kumpulan jawatan adalah seperti pada Jadual 20.

Di bawah peruntukan Pencen bagi Pekerja-pekerja Dalam Pihak-pihak Berkuasa, Berkanun dan Tempatan, seramai 64 kakitangan telah bersara dari perkhidmatan masing-masing iaitu 21 orang dalam Kumpulan Pengurusan dan Profesional dan 43 orang dalam Kumpulan Sokongan. Pecahan mengikut kakitangan yang bersara wajib, pilihan dan atas sebab kesihatan adalah seperti pada Jadual 21.

### Appointments and Promotions

In 1999, a total of 324 personnel were appointed, of which 293 were in the Management and Professional Group whilst 31 others were in the Support Services Group.

These appointments included permanent, temporary and contract positions which had fallen vacant following retirements, resignations, promotions and redeployment to new posts under different service schemes.

In 1999, 38 staff were promoted. The breakdown of these promotions according to groups are as shown in Table 19.

### Resignations and Management

A total of 27 staff resigned. The majority of the resignations can be attributed to job offers in other organisations and expiry of contractual dates. The breakdown of figures by group is shown in Table 20.

JADUAL/TABLE 20

**PELETAKAN JAWATAN DAN PENGURUSAN  
RESIGNATIONS & MANAGEMENT**

Kumpulan Jawatan Groups of Post	Bilangan Numbers
<b>Kumpulan Pengurusan &amp; Profesional (Akademik)</b> Management & Professional Group (Academic)	20
<b>Kumpulan Pengurusan &amp; Profesional (Bukan Akademik)</b> Management & Professional Group (Non-Academic)	3
<b>Kumpulan Sokongan</b> Support Service Group	4

Some 64 staff of the University under the pensionable scheme retired. Of these 21 were in the Management and Professional group while 43 were from the Support Service group. Details of resignations, retirements and optional retirements are as shown in Table 21.

JADUAL/TABLE 21

**PERSARAAN (WAJIB, PILIHAN DAN SEBAB KESIHATAN)  
RESIGNATIONS (COMPULSORY, OPTIONAL AND FOR MEDICAL REASONS)**

Kumpulan Groups	Wajib Compulsory	Pilihan Optional	Sebab Kesihatan Medical	Kematian Deaths
<b>Kumpulan Pengurusan &amp; Profesional (Akademik)</b> Management & Professional Group (Academic)	17	3	–	1
<b>Kumpulan Pengurusan &amp; Profesional (Bukan Akademik)</b> Management & Professional Group (Non-Academic)	27	12	1	3
<b>Jumlah/Total</b>	<b>44</b>	<b>15</b>	<b>1</b>	<b>4</b>

## Cuti Belajar dan Cuti Sabatikal

Seramai 95 kakitangan telah diluluskan cuti belajar bagi melanjutkan pengajian mereka di peringkat sarjana dan Ph.D dan seramai 28 pegawai akademik diluluskan cuti sabatikal di sepanjang tahun 1999.

## Anugerah Khidmat Cemerlang

Pengerusi Lembaga Pengarah UPM telah menyampaikan anugerah khidmat cemerlang kepada 179 penerima anugerah. Majlis ini diadakan setiap tahun sebagai penghargaan universiti kepada kakitangan yang telah memberi perkhidmatan cemerlang dalam membantu universiti dari segi pentadbiran, pendidikan dan pembangunan.

## Majlis Jasa Putra

Majlis Jasa Putra yang bertujuan menghargai kakitangan yang telah dan akan bersara pada tahun 1999 telah diadakan pada 5 November 1999. Seramai 60 kakitangan telah menerima cenderamata dan sijil sebagai tanda penghargaan universiti kepada perkhidmatan yang telah mereka berikan sepanjang perkhidmatan dengan universiti.

## Majlis Setia Putra

Majlis ini diadakan sebagai penghargaan universiti kepada kakitangan yang telah berkhidmat dengan UPM bagi tempoh 20 tahun dan lebih. Seramai 1145 kakitangan telah menerima sijil dan cenderamata disampaikan oleh Tun Canselor.

## Sabbatical & Study Leave

Study leave to pursue Masters and Ph.D. degrees were approved for 95 staff while 28 academic staff were given sabbatical leave for 1999.

## Excellent Service Awards

The Chairman of the Board of Directors of the University honoured 179 staff with Excellent Service Awards. This yearly affair acknowledges staff who have provided excellent service to administration, education or development of the university.

## 'Jasa Putra' Ceremony

The 'Jasa Putra' ceremony, was held on 5 November 1999 to acknowledge staff who are retiring from service. A total of 60 staff were presented with awards and commendation certificates for their service to the university.

## 'Setia Putra' Ceremony

This ceremony was held to honour those staff who have served the university for more than 20 years. The Chancellor presented the awards and commendation certificates to a total of 1,145 staff.



## LAPORAN AKADEMIK FAKULTI/PUSAT ACADEMIC REPORT FROM FACULTY/CENTRE



### FAKULTI EKOLOGI MANUSIA

#### Pemeriksa Luar

Pada bulan Februari, fakulti telah menerima kehadiran Prof. Jerelyn B. Schultz bagi menilai program Bachelor Sains Pembangunan Manusia. Profesor Michael Bridger telah melawat Jabatan Muzik untuk menilai kurikulum Bachelor Muzik.

#### Penerbitan

Sepanjang tahun 1999, beberapa pegawai akademik telah berjaya menghasilkan buku untuk pasaran negara. Tumpuan penulisan adalah dalam bidang pembangunan keluarga dan kanak-kanak, kepenggunaan dan pembangunan masyarakat serta muzik.

FEM juga telah menghasilkan sejumlah 16 penerbitan termasuk empat jurnal, tiga buku dan sembilan prosiding.

### FACULTY OF HUMAN ECOLOGY

#### Foreign Supervisors

In February the Faculty had the honour of receiving Prof Jerelyn B. Schultz who had been invited to assess the Bachelor of Science (Human Development) programme. Meanwhile Professor Michael Bridger visited the Music Department to assess the Bachelor of Music curriculum.

#### Publications

In 1999, the academic staff published several books for the local market particularly in the areas of Family & Child Development, consumerism, community development and Music. The Faculty has also succeeded in publishing four articles in journals, three books and nine proceedings.



## Aktiviti

Selaras dengan misi Fakulti untuk mencapai kecemerlangan dan keunggulan dalam pendidikan yang menyeluruh dan bersepadu, pihak fakulti dengan kerjasama jabatan telah berjaya menganjurkan beberapa aktiviti yang dapat mengeratkan silaturrahim sesama ahli fakulti. Antaranya ialah:

- University Conservatoire Choir Concert anjuran Jabatan Muzik.
- "Diskusi Pengguna dari Perspektif Islam" anjuran Jabatan Pengurusan Sumber dan Pengajian Pengguna telah menjemput penceramah jemputan iaitu Prof Dr. Syed Othman Al Habshi dan diadakan di Bilik Sidang FEM.
- Bengkel JASA 1 yang dianjurkan oleh Jabatan Pembangunan Manusia dan Pengajian Keluarga bertempat di Bilik Sidang FEM telah menarik minat ibubapa di kalangan pegawai UPM.
- Konsert Solo Pelajar Baru anjuran Jabatan Muzik bertempat di Panggung Percubaan UPM.
- Bengkel Perkembangan Kanak-kanak Prasekolah dianjurkan oleh Jabatan Pembangunan Manusia dan Pengajian Keluarga diadakan di Bangunan Ekologi 2, FEM.
- Hari Kualiti (Q) FEM 1998 bertempat di Fakulti Ekologi Manusia.
- Konsert Utama Orkestra Simfoni Kebangsaan bertempat di Kompleks Budaya Negara oleh Jabatan Muzik.
- Seminar Kecerdasan IQ dan Kesejahteraan Emosi EQ di kalangan pelajar dianjurkan oleh Jabatan Pembangunan Manusia dan Pengajian Keluarga bertempat di Bilik Sidang FEM.
- Seminar Kanak-Kanak Istimewa dianjurkan oleh Jabatan Pembangunan Manusia dan Pengajian Keluarga bertempat di Bilik Sidang FEM.
- "Chamber Music Concert" anjuran Jabatan Muzik bertempat di Panggung Percubaan UPM.
- Bengkel Remaja Cemerlang dianjurkan oleh Jabatan Pembangunan Manusia dan Pengajian Keluarga bertempat di SMK Sek 9, Shah Alam.

## Activities

In line with its mission of achieving excellence in education, the Faculty with the support of the Departments, successfully organised various activities to enhance *esprit de corps* amongst faculty members:

- The University Conservatoire Choir Concert organised by the Music Department.
- 'Discussion on Consumers from the Islamic Perspective'. The Department of Resource Management and Consumer Studies invited Prof. Dr. Syed Othman Al Habshi to chair the discussion.
- JASA 1 Workshop organised by the Department of Human Development and Family studies. Held at the Conference Room of the Faculty, it succeeded in attracting parents of UPM staff.
- Solo Concert by Freshies organised by the Music Department and held at the Experimental Theatre.
- Workshop on Pre-school Children's Development. Organised by the Department of Human Development and Family Studies, it was held at Ecology Building 2.
- Faculty 1998 Quality Day.
- Inaugural Concert by the National Symphony Orchestra. Organised by the Music Department, it was held at the National Cultural Complex.
- Seminar on IQ EQ well-being amongst students. Organised by the Human Development and Family Studies Department, it was held at the Conference Room.
- Seminar on Special Children. Organised by the Human Development and Family Studies Department, it was held at the Faculty Conference Room.
- Chamber Music Concert. Organised by the Music Department, it was held at Experimental Theatre UPM.
- 'Workshop on Excellence in Youth'. Organised by the Human Development and Family Studies Department, at SMK Section 9, Shah Alam.
- A one-day seminar on Social Work Education. Organised by the Social Science and Development Department, at VIP Room, IDEAL.

- Seminar Sehari pendidikan Kerja Sosial anjuran Jabatan Sains Kemasyarakatan dan Pembangunan bertempat di Bilik VIP, IDEAL.
- Seminar "The Third Country Training Program in Malaysia 1999" anjuran Fakulti Ekologi Manusia (UPM) dengan kerjasama JICA serta RSC-AP. Seramai 16 peserta dari negara Butan, Fiji, Micronesia, Mongolia, Papua New Guinea, Tonga dan Malaysia terlibat dalam seminar tersebut.
- Bengkel SKT/SSB kepada pegawai sokongan yang dianjurkan oleh Fakulti Ekologi Manusia bertempat di NIOS, Bangi.
- Bengkel sehari ISO 9000 dianjurkan oleh Fakulti Ekologi Manusia bertempat di Bilik Sidang FEM.
- "Bengkel Geran Penyelidikan IRPA: Panduan dan Prosedur Perolehan" dianjurkan oleh Fakulti Ekologi Manusia bertempat di Bilik Sidang untuk menggalakkan permohonan geran IRPA di kalangan penyelidik fakulti.
- Seminar on 'The Third Country Training Program in Malaysia 1999'. Organised by the Faculty with JICA & RSC-AP cooperation. 16 participants from Bhutan, Fiji, Micronesia, Mongolia, Papua New Guinea, Tonga and Malaysia attended.
- SKT/SSB Workshop for Support Services Group. Organised by the Faculty, it was held at NIOS, Bangi.
- A one-day workshop on ISO 9000. Organised by the Faculty, it was held at the Faculty Conference Room.
- Workshop on Guide and Application Procedures: IRPA Research Grant. Organised by the Faculty to familiarise academic staff with application procedures for research grant under IRPA, it was held at the Faculty Conference Hall.

## Kemajuan Prestasi

Mulai Januari 1999, nama Jabatan di FEM telah ditukar. Jabatan Pengajian Keluarga telah bertukar kepada Jabatan Pembangunan Manusia dan Pengajian Keluarga (JPMPK). Manakala Jabatan Pengajian Sosial telah berukar nama kepada Jabatan Sains Kemasyarakatan dan Pembangunan (JSKP). Jabatan Muzik dan Jabatan Pengurusan Sumber dan Pengajian Pengguna (JPSPP) mengekalkan nama masing-masing.

Pihak fakulti telah mengambil dua pensyarah (1 JPMPK dan 1 di JPSPP) dan tujuh tutor baru (2 JPMPK; 3 JPSPP; 2 JPMPK). Pihak FEM juga telah melantik dua pensyarah kontrak bagi Jabatan Muzik.

Dua pensyarah dan seorang tutor telah menamatkan cuti belajar di peringkat Ph.D iaitu En. Zaid Ahmad, En. Mohd. Shatar Sabran dan Pn. Norbaya Ahmad. Sementara itu dua pensyarah dari JPSPP telah mengambil cuti sabatikal.

Pada tahun 1999, fakulti telah berjaya melahirkan tiga graduan di peringkat Master, 619 graduan Bachelors (Pembangunan Manusia) dan 361 graduan Diploma Pembangunan Manusia pada Majlis Konvokesyen ke-23 UPM.

Pada 6 Oktober 1999, Fakulti Ekologi Manusia diterajui oleh Dekan yang baru iaitu Prof. Madya Dr. Abdullah Al-Hadi Hj. Mohammed menggantikan Prof. Madya Dr. Halimah Hj. Ahmad.

## Performance

In 1999, two Departments in the Faculty had a name change. The Department of Family Studies was renamed Human Development and Family Studies Department (JPMPK) while the Social Studies Department was renamed Department of Social Science and Development (JSKP).

The Faculty recruited two additional lecturers (one for JPMPK and one for JPSPP) and 7 tutors (two for JPMPK, three for JPSPP, and two for JPMPK). Two contract lecturers were appointed to serve with the Music Department.

En. Zaid Ahmad, En. Mohd. Shatar Sabra and Puan Norbaya Ahmad completed their Ph.D, whilst 2 lecturers from JPSPP have gone on sabbatical leave.

For the 23<sup>rd</sup> Convocation Ceremony, the Faculty succeeded in graduating 3 at Masters level, 619 with Bachelors in Human Development and 361 with Diploma in Human Development.

Assoc. Prof. Abdullah Al-Hadi took on the deanship from Assoc. Prof. Dr. Halimah Hj. Ahmad on 6 October 1999.



## FAKULTI EKONOMI DAN PENGURUSAN

### Program yang Ditawarkan

Fakulti Ekonomi dan Pengurusan menawarkan empat program di peringkat Bachelo, dua program pada peringkat Sarjana dan Ph.D. Antara 172 kursus yang ditawarkan oleh fakulti pada tahun lalu, dua merupakan kursus baru. Bilangan pelajar yang berdaftar di Fakulti pada tahun 1999 adalah seramai 4796 orang (Jadual 22). Jumlah pelajar mengikut kategori adalah seperti Jadual 23.

Pada tahun 1999, dua pensyarah telah meletakkan jawatan. Dua profesor kontrak, empat pensyarah, 10 tutor dan tiga pembantu tadbir kontrak telah dilantik. Seorang profesor madya telah bertukar ke universiti lain. Seorang pensyarah dan 12 tutor cuti belajar kerana mengikuti program sarjana dan Ph.D.

JADUAL/TABLE 22

#### PELAJAR YANG BERDAFTAR DI FAKULTI STUDENTS REGISTERED WITH THE FACULTY

Kursus Penuh Masa Full Time Courses	Bilangan Number
Doktor Falsafah Ph.D	9
Sarjana Masters	116
Bachelor Ekonomi Bachelor in Economics	1110
Bachelor Perakaunan Bachelor in Accountancy	1184
Bachelor Perakaunan dengan Pendidikan Bachelor in Accountancy (Education)	389
Bachelor Pentadbiran Perniagaan Bachelor in Business Administration	1323
Program Eksekutif Executive Programme	665
<b>Jumlah/Total</b>	<b>4796</b>

## FACULTY OF ECONOMICS AND MANAGEMENT (FEP)

### Programmes Offered

The Faculty offers four programmes at Bachelor's level, and two programmes each at Masters and Ph.D level. Of the 172 courses offered by the Faculty, two are new. The number of students enrolled as of 1999 is 4,796 (Table 22). The number of staff according to category is shown in Table 23. In 1999, two lecturers retired while two contract professors, 4 lecturers, 10 tutors and 3 contract assistant administrators were appointed. One associate professor moved to another university. Another lecturer and 12 tutors took study leave to pursue their Masters and Ph.D.

JADUAL/TABLE 23

#### JUMLAH KAKITANGAN FEP MENGIKUT KATEGORI TOTAL NUMBER OF FEM STAFF BY CATEGORY

Jabatan Departments	Kategori A Category A	Kategori B Category B	Kategori C Category C	Kategori Category
Pejabat Dekan Dean's Office	3	3	12	8
Jabatan Ekonomi Economics Department	21	-	2	1
Jabatan Pengurusan dan Pemasaran Dept. of Marketing & Management	37	-	1	2
Jabatan Perakaunan dan Kewangan Dept. of Accountancy & Finance	29	-	1	2
Jabatan Hospitaliti dan Rekreasi Dept. of Recreation & Hospitality	13	-	-	1
<b>Jumlah/Total</b>	<b>103</b>	<b>3</b>	<b>16</b>	<b>14</b>
<b>Jumlah Besar/Grand Total</b>				<b>136</b>

## Aktiviti dan Penyelidikan

Pada tahun 1999, sebanyak 46 projek penyelidikan telah dijalankan oleh Fakulti Ekonomi dan Pengurusan. Daripada jumlah tersebut, tiga projek adalah tajaan IRPA, sementara 43 projek dibiayai oleh projek jangka pendek UPM. Pihak fakulti telah berjaya menerbitkan sembilan judul buku, 34 artikel di jurnal dan 28 kertas Konferensi/Seminar dan 22 kertas kerja telah dibentangkan di persidangan, bengkel dan seminar.

FEP juga telah melantik seorang pemeriksa luar iaitu prof. Robert W. Scapens, University of Manchester, England untuk Program Bachelo Perakaunan.

Seminar-seminar yang dikendalikan oleh FEP:

- "Malaysian Economy and Management into the Next Millenium" di Hotel Century Mahkota, Melaka pada 15-17 Oktober 1999.
- "Repositioning the Agricultural Industry in the Next Millenium", IDEAL UPM, 13 -14 Julai 1999.
- Bengkel Kaedah Penyelidikan, Mint Hotel, Sri Kembangan, 27 - 29 November 1999.
- "International Real Estate Society Conference" '99, Kuala Lumpur, 26 - 31 Jan 1999.

Fakulti Ekonomi dan Pengurusan juga menyediakan khidmat perundingan iaitu:

- "Development Plan for Tourism Sector in Cameron Highlands", Pahang D.M. Consultancy Report for Majlis Daerah Cameron Highlands, Pahang, Jun 1999.
- "Strategic Plan for State of Kelantan, Tourism Sector", Kelantan State Unit, September 1999.
- "Tourism Development of the Head Hunters Trail, Mulu National Park". Kementerian Pelancongan Sarawak. Disember 1999.

## Research and Activities

In 1999, FEP undertook 46 research projects. Of this, three projects were financed by IRPA, and 43 other projects were financed by UPM's short-term project fund. In terms of publications, FEP successfully published 9 books, 28 journal articles and 28 conference/seminar papers. A further 22 working papers were presented at workshops, seminars and colloquiums.

FEP has appointed Prof. Robert W. Scapens from the University of Manchester, England as the external examiner for the Bachelor's of Finance programme.

The following seminars were organised by FEP:

- *Malaysian Economy and Management into the Next Millennium* at Century Hotel Mahkota, Malacca, 15-17 October 1999.
- *Repositioning the Agricultural Industry in the next Millennium*, IDEAL UPM, 13-14 July, 1999.
- *Workshop on Research Methodology*, Mint Hotel, Seri Kembangan, 27-29 November, 1999.
- *International Real Estate Society Conference '99*, Kuala Lumpur, 26-31 January 1999.

FEP provided the following consultancy services:

- *Development Plan for Tourism Sector in Cameron Highlands*, Pahang Darul Makmur. Consultancy report for the District Council, Cameron Highlands, Pahang, June 1999
- *Strategic Plan for the State of Kelantan Tourism Sector*, Kelantan State Unit, September 1999
- *Tourism Development of the Head Hunters Trail*, Mulu National Park, Ministry of Tourism, Sarawak, December 1999.



## FAKULTI KEJURUTERAAN

## FACULTY OF ENGINEERING

### Bangunan Baru

Bangunan baru Fakulti Kejuruteraan iaitu Kompleks Kejuruteraan dan Teknologi Fasa I yang berharga RM26.1 juta siap dibina. Ini melibatkan pembangunan Makmal, Bangunan Akademik serta Bangunan Pentadbiran yang dijangka siap sepenuhnya pada hujung tahun 2000. Fasa I kompleks tersebut yang menempatkan lapan makmal mula digunakan pada bulan Disember 1999. Sementara itu pembangunan Fasa 2 yang bernilai RM160 juta bagi memenuhi semua keperluan akademik dan pentadbiran dijangka siap sepenuhnya dan digunakan pada akhir tahun 2002.

### New Complex

Phase I of the new RM26.1M Engineering and Technology Complex, has been completed. A number of new laboratories, academic and administration buildings are expected to be completed by the end of 2000. Phase I consisting of 8 new laboratories have been in use since December, 1999. Meanwhile Phase II of the complex costing RM160 million to meet the academic and administrative needs is expected to be ready for use by the end of 2002.

JADUAL/TABLE 24

**PENGAMBILAN PELAJAR DALAM BIDANG KEJURUTERAAN (1999)**  
**STUDENT INTAKE FOR ENGINEERING COURSES (1999)**

Bil No.	Program Programme	Bilangan Pelajar Number of Student
1.	<b>Bachelor Kejuruteraan (Aeroangkasa)</b> Bachelor of Engineering (Aeronautical)	298
2.	<b>Bachelor Kejuruteraan (Awam)</b> Bachelor of Engineering (Civil)	462
3.	<b>Bachelor Kejuruteraan (Biologi &amp; Pertanian)</b> Bachelor of Engineering (Biology & Agriculture)	218
4.	<b>Bachelor Kejuruteraan (Elektrik &amp; Elektronik)</b> Bachelor of Engineering (Electric & Electronics)	391
5.	<b>Bachelor Kejuruteraan (Kimia)</b> Bachelor of Engineering (Chemical)	291
6.	<b>Bachelor Kejuruteraan (Mekanikal)</b> Bachelor of Engineering (Mechanical)	433
7.	<b>Bachelor Kejuruteraan (Proses &amp; Makanan)</b> Bachelor of Engineering (Food & Processing)	257
8.	<b>Bachelor Kejuruteraan (Sistem Komputer &amp; Komunikasi)</b> Bachelor of Engineering (Computer Science & Communication)	477
9.	<b>Bachelor Kejuruteraan (Elektronik/Komputer)</b> Bachelor of Engineering (Electronics/Computer)	6
10.	<b>Bachelor Kejuruteraan Pertanian</b> Bachelor of Agricultural Engineering	13
	<b>Jumlah/Total</b>	<b>2,846</b>

## Program yang Ditawarkan

Permintaan yang tinggi terhadap pengajian kejuruteraan telah menyebabkan peningkatan pengambilan pelajar dari tahun ke tahun. Bagi tahun 1999, jumlah pengambilan pelajar adalah seperti di Jadual 24.

Diploma Kejuruteraan (Kecemasan dan Keselamatan) telah pun diluluskan oleh Senat Universiti Putra Malaysia pada Oktober 1999 dan ditawarkan oleh Jabatan Biologi dan Pertanian mulai semester Mei 2000. Ianya ditawarkan secara francais di Institusi Pengajian Tinggi Swasta.

Untuk menilai kurikulum, satu jawatankuasa Penasihat Fakulti yang terdiri daripada jurutera-jurutera sektor awam dan swasta telah ditubuhkan. Seramai lapan profesor dari beberapa universiti terkemuka telah dilantik sebagai pemeriksa luar. Tujuannya ialah untuk memastikan program akademik yang ditawarkan setanding dengan program kejuruteraan diseluruh dunia.

## Aktiviti dan Penyelidikan

Pada tahun 1999, sebanyak 83 projek penyelidikan telah dijalankan oleh Fakulti Kejuruteraan yang berjumlah RM19.4 juta. Pihak fakulti telah berjaya menerbitkan tujuh judul buku teks, 85 artikel di jurnal dan tiga ensiklopedia sebanyak 175 kertas kerja telah dibentangkan di persidangan, bengkel dan seminar.

Antara aktiviti-aktiviti yang dijalankan oleh pihak fakulti sepanjang tahun 1999 meliputi:

- World Engineering Congress and Exhibition '99 pada 19 - 22 Julai 1999 bertempat Hotel Sheraton, Subang Jaya, Selangor.
- A Short Course on Pavement Material Testing for Petronas,
- Seminar "Engineering Smart Farming for the Next Millenium"
- Lawatan oleh Board Engineer of Malaysia (BEM)
- Seminar "Malaysia International Conference on Communication 99 International Symposium on Courser Electronics

Sehingga akhir tahun 1999, pihak fakulti telah menubuhkan empat pusat kecemerlangan iaitu:

- Housing Research Center (HRC)

## Programmes Offered

Due to the high demand for engineering courses, the annual intake of students in the Faculty has seen a steady rise. For 1999, the intake of students is shown in Table 24.

The Senate approved the Diploma in Engineering (Emergency & Safety) in October 1999. This course is being offered by the Biology & Agriculture Department for the May 2000 semester. It is also been offered as a franchised course by private institutions for higher learning.

To facilitate curriculum evaluation, a Faculty Advisory Committee has been established. This committee consists of engineers drawn from the corporate and private sectors. Eight professors from various universities have been appointed as external examiners. This is to ascertain that the academic programmes offered at UPM are on par with engineering courses offered throughout the world.

## Research and Activities

In 1999, 83 research projects with a total allocation of RM19.4 million have been conducted by the Faculty staff. Faculty members have published 7 textbooks, 85 journal articles and have been involved in the publication of 3 encyclopedias. A further 175 working papers have been presented at workshops, seminars and conferences.

Among the activities organised by the Faculty are:

- *World Engineering Congress and Exhibition 1999*, 19-22 July 1999, Hotel Sheraton, Subang Jaya, Selangor
- *A short Course on Pavement Materials Testing for Petronas*
- *Seminar on Engineering Smart Farming for the Next Millennium*
- *Visit by the Board of Engineers of Malaysia/BEM*
- *Seminar Malaysian International Conference on Communication 99/International Symposium on Courser Electronics*

By late 1999, the Faculty had established four Centres of Excellence:

- Housing Research Centre (HRC)
- Waste Technology Centre (WTC)
- Road Safety Research Centre (RSRC)
- Mountainous Terrain Development Research Centre (MTDRC)

- Waste Technology Center (WTC)
- Road Safety Research Center (RSRC)
- Mountainous Terrain Development Research Center (MTD-RC)



Penyelidikan yang dijalankan oleh sekumpulan pensyarah daripada salah satu pusat Kecemerlangan iaitu "Mountainous Terrain Development Research Center (MTD-RC), Fakulti Kejuruteraan telah berjaya memenangi anugerah. Kumpulan penyelidik ini telah mencipta sejenis alat yang dinamakan Small-Pressuremeter (S-P). Alat ini berfungsi untuk mengukur tekanan dan regangan batuan dan senang digunakan serta berpotensi tinggi untuk dikomersilkan.

Mountainous Terrain Development Research Centre (MTD-RC) lecturers were involved in a research project that won an award. This group of researchers were successful in designing the Small-Pressuremeter (S-P). Its function is to measure pressure and strength of rocks. The S-P is user friendly and has vast potential for commercial use.

Seramai lima pensyarah Fakulti Kejuruteraan telah menerima kenaikan pangkat sebagai Profesor Madya.

Five lecturers from the Faculty have been promoted to Associate Professors.



## FAKULTI PENGAJIAN PENDIDIKAN

## FACULTY OF EDUCATIONAL STUDIES (FPP)

### Program yang Ditawarkan

Fakulti Pengajian Pendidikan telah menawarkan program baru di peringkat Diploma mulai tahun 1999. Program berkenaan ialah Diploma Belia dalam Kerja Pembangunan. Program ini terbuka kepada pelajar dari negara Komanwel.

### Programmes Offered

For the year 1999, the Faculty of Educational Studies offered a new Diploma Programme in Youth in Development Works. Students from the Commonwealth countries can apply to join this course.

Sebanyak 34 projek penyelidikan jangka pendek telah dijalankan. Di samping itu, pihak fakulti juga telah menghantar sembilan permohonan IRPA. Pada tahun lalu, pihak fakulti telah menerima geran penyelidikan sebanyak RM67,000 dari Kementerian Belia dan Sukan Malaysia.

Thirty-four Short Term Research Projects have been completed while seven applications for IRPA grants have been forwarded. In 1998, the Faculty was awarded a research grant of RM67,000 by the Ministry of Youth.

FPP juga telah melantik dua pemeriksa luar iaitu Prof. Larry E. Miller: (profesor di The Ohio State University dan Fellow: American Association of Agricultural Educators) yang bertanggungjawab menilai Program Bachelor Pendidikan (Pendidikan Pertanian). Manakala Profesor Bruce L. Howe: (Professor of Physical Education and Dean Faculty of Education, University of Victoria, Canada. Penilai dan pemeriksa Luar bagi Program Bachelor Pendidikan (Pendidikan Jasmani).

Seorang pensyarah fakulti ini telah menerima anugerah Association of Counselor Education and Supervision (ACES) International Award for Counseling. Beliau adalah Profesor Madya Dr. Othman Dato' Haji Mohamed.

## Aktiviti dan Kursus

Aktiviti-aktiviti yang dikendalikan oleh FPP :

- Anugerah Graduan Terbaik Fakulti Pengajian Pendidikan 1998/99
- Pesta Konvo ke-23 pada 22 Ogos 1999 - Johan gerai pameran terbaik
- Hari Q FPP 1999
- Hari Keceriaan Fakulti
- Anugerah Khidmat Cemerlang FPP 1999
- Majlis Pelancaran Buletin "WADAH" FPP

Kursus-kursus yang dijalankan di bawah PUSPA

- Kursus Teknik Pengajaran kepada 45 pensyarah daripada Fakulti Kejuruteraan, UPM.
- Kursus Teknik Pengajaran kepada 50 pensyarah dari Akademik Laut Malaysia.
- Kursus Teknik Pengajaran kepada 45 pensyarah Universiti Teknologi Petronas
- Kursus Teknik Pengajaran pada 30 pensyarah dan Fakulti Rekabentuk dan Senibina, UPM.

Sembilan pegawai akademik Jabatan Khidmat Profesional dan Komuniti telah memberikan khidmat kepada institusi kerajaan dan juga swasta, dalam dan luar negara.

FPP has appointed two external examiners. Prof. Larry E. Miller (Professor at the Ohio State University, and a Fellow of the American Association of Agricultural Educators) were responsible for evaluating the Bachelor of Education (Agricultural Education) programme while Prof. Bruce L. Howe (Professor of Physical Education and Dean of Faculty of Education, University of Victoria, Canada) evaluated the Bachelor of Education (Physical Education) programme.

Assoc. Prof. Dr. Othman Dato' Hj. Mohamed, a faculty staff was awarded the International Award for Counselling by the Association of Counselor Education and Supervision (ACES).

## Activities and Courses Conducted

Some of the activities conducted by FPP include:

- Best Graduate Award for FPP 1998/99
- 23<sup>rd</sup> Convocation Festival – 22 August 1999
- Best Stall Award
- 'Q' Day FPP 1999
- Faculty 'Keceriaan' Day
- FPP Excellent Service Award 1999
- Launching Ceremony of Bulletin 'WADAH'

Course conducted under the auspices of PUSPA

- Teaching Technique Course for 45 lecturers from the Engineering Faculty, UPM
- Teaching Technique Course for 50 lecturers from the Maritime Academy Malaysia
- Teaching Technique Course for 45 lecturers from University Technology Petronas
- Teaching Technique Course for 30 lecturers from the Faculty of Design & Architecture, UPM

Nine academic staff from the Department of Professional and Community Services, rendered their services to various government and private institutions, both locally and overseas.



## FAKULTI PERHUTANAN

Dari sudut pembangunan akademik, fakulti telah merangka beberapa program baru yang akan ditawarkan mulai tahun 2000 dan seterusnya. Program yang dirancang itu ialah Bachelo Teknologi dan Sains Kayu, Bachelo Pengurusan Rekreasi dan Ekopelancongan, Bachelo Sains Perhutanan dengan beberapa opsyen baru serta program Master Sains (Rekreasi dan Ekopelancongan).

Fakulti Perhutanan telah berjaya menganjurkan beberapa aktiviti sepanjang tahun 1999 seperti:

- Seminar Pengurusan dan Ekologi Hutan Simpan Ayer Hitam, Puchong
- Seminar Machining of Rubberwood
- Seminar on Oriented Strand Board (OSB)
- Penghargaan Khidmat Cemerlang 1998 Fakulti Perhutanan
- Pertandingan Peringkat Kebangsaan Kuiz Sains Alam Semulajadi 1999
- Pertandingan Eseiton 1999

Fakulti juga telah berjaya menghasilkan sebanyak 51 penerbitan yang meliputi jurnal, prosiding dan artikel. D daripada jumlah itu, 29 penerbitan adalah dalam bentuk jurnal. Sebanyak enam jenis penerbitan dikeluarkan oleh penerbit UPM. Sementara itu, sebanyak 102 persidangan telah diikuti oleh pembentang yang telah diadakan di dalam dan di luar negara. Sebanyak 34 penyelidikan yang aktif dijalankan oleh penyelidik fakulti.

Pihak fakulti telah melantik penilai luar iaitu Prof. Dr. Frederick W. Cubage, Bahagian Perhutanan, University of North Carolina State. Fakulti juga telah menyediakan lima khidmat perundingan kepada agensi kerajaan dan swasta. Antara khidmat perundingan adalah Penyediaan Rancangan Pengurusan Negeri Kedah dan Rancangan Hutan Bakau, Merbok, Kedah.

## FACULTY OF FORESTRY

From the academic development perspective, the Faculty has planned a number of new programmes which will be offered in the year 2000 and onwards. The programmes are the Bachelor of Wood Science and Technology, Bachelor of Recreational Management and Ecotourism, Bachelor of Forest Science with various options as well as the Master of Science (Recreation and Ecotourism).

The Faculty has successfully carried out a number of activities throughout 1999:

- Seminar on Management & Ecology of Forest Reserve in Ayer Hitam, Puchong, Selangor
- Seminar on Machining of Rubber Wood
- Seminar on Oriented Strand Board (OSB)
- Honouring the Excellence Service winners of the Faculty (1998)
- National Science & Nature Quiz Competition 1999
- Essay Competition 1999

Faculty members have published 51 articles in various categories of publications. Of this 29 were in journals while 6 were published by the University Press. Academic staff presented papers at 102 conferences locally and internationally. Thirty-four research projects have been carried out by the Faculty.

The Faculty has appointed Prof. Dr. Frederick W. Cubage from the Forestry Department, University North Carolina State, as the external examiner. Five consultancy service reports have been prepared for private and government agencies. Two such consultancy reports are *A Management Plan for Kedah and Bakau Forest Plan, Merbok, Kedah*.



## FAKULTI PERTANIAN

### Penstrukturan Semula

Fakulti Pertanian mempunyai enam jabatan utama setelah mengalami proses penstrukturan semula. Jabatan itu ialah:

- Jabatan Sains Haiwan
- Jabatan Sains Tanaman
- Jabatan Perlindungan Tumbuhan
- Jabatan Pengurusan Tanah
- Jabatan Perniagaantani dan Sistem Maklumat
- Jabatan Teknologi Pertanian

Maklumat bagi setiap jabatan di Fakulti Pertanian

## FACULTY OF AGRICULTURE

### Restructuring

The restructuring exercise in 1998 resulted in the Faculty having six Departments in 1999:

- Department of Veterinary Science
- Department of Plant Science
- Department of Plant Protection
- Department of Soil Protection
- Department of Agribusiness and IT
- Department of Agricultural Technology

A short summary of the various departments in the Faculty is presented in Table 25

JADUAL/TABLE 25

### RINGKASAN MAKLUMAT SETIAP JABATAN DI FAKULTI BRIEF INFORMATION ON EACH DEPARTMENT IN THE FACULTY

Jabatan Department	Penyelidikan IRPA IRPA Research	Penyelidikan J. Pendek Short-term Research	Penerbitan* Publication*
<b>Jabatan Sains Haiwan</b> Department of Veterinary Science	8	–	68
<b>Jabatan Sains Tanaman</b> Department of Plant Science	23	11	82
<b>Jabatan Perlindungan Tumbuhan</b> Department of Plant Protection	9	–	26
<b>Jabatan Perniagaan Tani dan Sistem Maklumat</b> Department of Agribusiness & IT	–	4	20
<b>Jabatan Teknologi Pertanian</b> Department of Agricultural Technology	2	3	17
<b>Jumlah/Total</b>	<b>42</b>	<b>18</b>	<b>213</b>

\*Penerbitan meliputi buku, jurnal, kertas kerja seminar dan prosiding

\* Publications include books, journals, working papers and proceedings

## Kursus-kursus dan Penerbitan

Penerbitan yang dihasilkan meliputi jumlah buku, jurnal, kertas kerja seminar dan prosiding.

Aktiviti-aktiviti yang dikendalikan oleh Fakulti Pertanian:

- "Seminar on Repositioning of Agriculture in the Next Millennium".
- Kajian Kualiti Lada Putih di Sarawak
- Kajian Ekonomi Pengeluaran Sago di Sarawak
- Ubah Suai Jentera Ladang di Perlis Plantation
- Kajian Kegunaan Jentera dalam Penuaian Kelapa Sawit
- Kerja Perundingan oleh Jabatan Perlindungan Tumbuhan untuk Lembaga Pendidikan Pekebunan (LPP), Indonesia
- AGEX, Kuala Lumpur, 26–31 Ogos 1999
- International workshop on "Bioencapsulated Food for Larval Fish"

Kursus-kursus yang dijalankan oleh fakulti:

- Kursus Jangka Pendek Projek Perancangan dan Penilaian, Fakulti Pertanian
- Kursus "Animal Waste Management in the Humid Tropics", Kementerian Sains Teknologi dan Alam Sekitar
- Kursus "Estimation of Rumen Microbial Yield Using Purine Derivatives Techniques", Kementerian Sains Teknologi & Alam Sekitar
- Kursus "Pakar Rujuk Bidang Hortikultur"
- Projek Hidroponik UNDP-MALDIVE
- Lawatan ke Maldives 4-19 April 1999

Enam pegawai Fakulti Pertanian telah dianugerahkan pelbagai anugerah seperti Anugerah Khidmat Cemerlang, Pingat Jasa Kebaktian (PJK) dan Kesatria Mangku Negara (KMN)

## Publications and Courses

Publications include books, working papers and articles in journals and proceedings.

Among the activities conducted by the Faculty are:

- Seminar on *Repositioning of Agriculture in the Next Millennium*
- Quality Study on White Pepper in Sarawak
- Economic Study on Sago Production in Sarawak
- Field Machine Changes in Perlis Plantation
- Study on Mechanisation of Palm Oil Harvesting
- Consultancy service by Department of Plant Protection for Lembaga Pendidikan Perkebunan (LPP), Indonesia
- AGEX, Kuala Lumpur, 26-31 August 1999
- International workshop on *Bioencapsulated Food for Larval Fish*

Courses conducted by the Faculty:

- Short-term course on *Project Planning & Evaluation*
- Course on *Animal Waste Management in the Humid Tropics*, Ministry of Science & Environment
- Course on Estimation of Rumen Microbial Yield Using Purine Derivative *Techniques*, Ministry of Science & Environment
- Course on *Specialist for in Horticulture*
- Hydroponic Project UNDP-MALDIVE
- Visit to Maldives, 4-19 April 1999

Eight Faculty members received various categories of awards such as the Excellence Service Award, "Pingat Jasa Kebaktian" (PJK) and "Kesatria Mangku Negara" (KMN).





## FAKULTI PERUBATAN DAN SAINS KESIHATAN

### Perkembangan

Pada tahun 1999, Fakulti telah distruktur semula kepada tujuh jabatan iaitu:

- Jabatan Sains Bioperubatan
- Jabatan Pemakanan dan Sains Kesihatan
- Jabatan Perubatan
- Jabatan Bedah
- Jabatan Pertumbuhan dan Pembangunan Manusia
- Jabatan Sains Makmal Klinikal
- Jabatan Kesihatan Komuniti

Tiga jabatan iaitu Jabatan Perubatan, Jabatan Bedah dan Jabatan Pertumbuhan dan Pembangunan Manusia ditempatkan di Grand Season Avenue, Jalan Pahang, Kuala Lumpur.

Graduan sulung program Bachelo Sains (Perubatan) telah menerima ijazah mereka di majlis konvokesyen pada tahun 1999. Kini mereka sedang mengikuti pengajian di Tahun 4 untuk melengkapkan program dua tahun sebelum dianugerahkan ijazah Doktor Perubatan.

Dalam tahun 1999 Fakulti telah menjalankan 86 penyelidikan dan telah menghasilkan 140 penerbitan termasuk makalah dalam jurnal, majalah dan kertas kerja.



## FACULTY OF MEDICINE AND HEALTH SCIENCE

### Development

In 1999, the Faculty was restructured to consist of seven departments:

- Department of Biomedical Science
- Department of Nutrition and Health Science
- Department of Medicine
- Department of Surgery
- Department of Human Growth and Development
- Department of Clinical Science Laboratories
- Department of Community Health

Three departments, that is the Department of Medicine, Department of Surgery, and Department of Human Growth and Development are located at Grand Season Avenue, Jalan Pahang, Kuala Lumpur.

The pioneer batch of graduates with a Bachelors in Science (Medical) received their scrolls at the 1999 Convocation. Currently they are pursuing the first of the subsequent two-year programme in order to obtain their MBBS degrees.

For 1999, the Faculty carried out 86 research projects and succeeded in publishing 140 publications which include articles in journals and magazines and working papers.

## Anugerah dan Pemeriksaan Luar

Fakulti telah melantik beberapa pemeriksa luar dengan tujuan untuk menjamin kualiti pembelajaran dan pengajaran. Antara pemeriksa luar yang dilantik ialah Prof. T. G. Baker dari University of Bradford, Prof. Donald K. Layman dari Universiti of Illinois dan Prof. Rahman dari International Medical College, Malaysia (IMC).

Empat pegawai akademik telah dipilih sebagai Ahli Akademi Perubatan Malaysia iaitu:

- Prof. Dr. Leslie C. Lai
- Prof. Madya Dr. Sabariah Abdul Rahman
- Prof. Madya Dr. Zarida Hambali
- Dr. Hairuszah Ithnin

## Examiners and Awards

To ensure excellence in teaching and learning, the Faculty has appointed several external examiners. Among them are Prof. T. G. Baker from University of Bradford, Prof. Donald K. Layman from the University of Illinois and Prof. Rahman from the International Medical College, Malaysia (IMC).

Four academics staff have been appointed members of the Medical Academy. They are:

- Prof. Dr. Leslie C. Lai
- Assoc. Prof. Dr. Sabariah Abdul Rahman
- Assoc. Prof. Dr. Zarida Hambali
- Dr. Hairuszah Ithnin



## FAKULTI PERUBATAN VETERINAR

### Perkembangan

Sepanjang tahun 1999, Fakulti Perubatan Veterinar telah menghasilkan beberapa kejayaan dalam bidang penyelidikan. Antaranya ialah:

- Projek "Pathogenesis and control of pneumonic pasteurellosis in sheep and goats". Projek ini telah menghasilkan satu vaksin baru terhadap penyakit pneumonia pasteurellosis pada kambing dan bebiri yang dikenali sebagai vaksin semburan intranasal.

## FACULTY OF VETERINARY MEDICINE

### Development

In 1999, the Faculty made breakthroughs in the following research areas:

- *Pathogenesis and control of pneumonic pasteurellosis in sheep and goats.*
- *Cross breeding and upgrading of local indigenous horses for size and performance.* A food formula was experimented on indigenous horses using local agricultural waste.

- Projek "Crossbreeding and upgrading of local indigenous horses for size and performance". Projek ini telah menghasilkan satu formulasi makanan yang sesuai untuk kuda di Malaysia yang menggunakan bahan buangan pertanian tempatan.
- Projek "Commercial utilization of plam kernel cake in an intensive production system of ruminant" yang mengkaji masalah penggunaan PKC dalam menghasilkan jaundis pada bebiri.
- Projek "Pathogenicity and immunization of infectious bursal disease in poultry" yang mengenal pasti satu pencilan virus IBD yang sesuai sebagai strain vaksin.
- *Commercial utilization of palm kernel cake in an intensive production system of ruminants* project. A study on the problem of sheep jaundice resulting from the usage of PKC as feed.
- *Pathogenicity and immunization of infections bursal disease in poultry* project. A penicillin virus IBD was identified as a vaccine strain.

## Publications and Activities

In terms of publications, the faculty has published 20 articles in international and local journals, and have presented 35 working papers at local conferences.

Among the activities conducted throughout the year were seminars on *Recent Advances in Animal Health and Production, Management of White Spot Syndrome, Nutrition for Pet Animals Series II, Nipah Virus Disease, Avian Tumour Disease, and White Spot Disease*; workshops on *Anaesthetic Management of Compromised Patients, and Basic Radiography and Radiology of the Urinary System* and a public lecture by Tan Sri Omar Abd. Rahman, the Science Advisor to the Prime Minister, was organised for Faculty members.

Two Faculty members were awarded the Pingat Perkhidmatan Cemerlang (PPC) by DYMM Sultan Selangor, while another member received the Pingat Kelakuan Terpuji (PKT) by TYT Yang DiPertua Negeri Pulau Pinang.

In 1999, a library and ICT laboratory was established for the Faculty. Efforts have been on-going towards ISO 9001 certification. On September 6, 1999, the Faculty was successful in obtaining an 'adequacy audit'. The next step will be to complete certification of ISO 9001 in March 2000.

## Aktiviti dan Penerbitan

Fakulti juga telah menghasilkan 20 penerbitan di dalam jurnal antarabangsa, lima penerbitan di dalam jurnal tempatan dan sebanyak 35 kertas kerja dibentangkan dalam persidangan di Malaysia.

Antara aktiviti Fakulti sepanjang tahun 1999 ialah mengendalikn beberapa seminar seperti *Recent Advances in Animal Health and Production, Management of White Spot Syndrome, Nutrition for Pet Animal Series II, Nipah Virus Disease, Avian Tumour Disease dan White Spot Disease*; bengkel *Anaesthetic Management of Compromised Patients dan Basic Radiography and Radiology of the Urinary System* serta syarahan umum oleh Tan Sri Omar Abd. Rahman, Penasihat Sains, Perdana Menteri, anjuran ahli Fakulti.

Dua pegawai Fakulti telah menerima Pingat Perkhidmatan Cemerlang (PPC) sempena Hari Keputeraan Sultan Selangor dan seorang lagi Pingat Kelakuan Terpuji (PKT) sempena Hari Jadi Tuan Yang Terutama Yang DiPertua Negeri Pulau Pinang.

Di dalam tahun 1999, Fakulti telah mewujudkan sebuah perpustakaan dan makmal ICT untuk kegunaan pelajar dan warga Fakulti.

Mulai 1999, Fakulti telah memulakan usaha untuk mendapatkan pensijilan ISO 9001. Pada 6 September 1999, Fakulti telah berjaya di dalam 'adequacy audit' dan seterusnya warga fakulti sedang berusaha dan bekerja keras bagi mendapatkan pensijilan ISO 9001 pada bulan Mac 2000 nanti.



## FAKULTI REKA BENTUK DAN SENI BINA

### Perkembangan

Usia Fakulti Reka Bentuk dan Seni Bina telah ditubuhkan pada 26 Jun 1996. Daripada empat jabatan yang dirancang di bawah fakulti ini, dua daripadanya telah beroperasi. Jabatan-jabatan ini ialah Jabatan Seni Bina Landskap dan Jabatan Seni Bina.

Dalam tahun ini juga, bilangan kakitangan mencapai angka 69 orang dengan penambahan beberapa pensyarah dan tutor dalam bidang-bidang baru seperti reka bentuk perindustrian, reka bentuk bandar dan reka bentuk multimedia. Pada masa yang sama bilangan pelajar siswazah dan pascasiswazahnya juga bertambah. Pada masa ini bilangan pelajar siswazah adalah seramai 28 orang.

Fakulti juga telah mendapat peruntukan kewangan daripada kerajaan sejumlah RM10.3 juta untuk membina bangunan fakulti yang akan menempatkan bilik-bilik studio, makmal, bilik pentadbiran dan tenaga akademik. Bangunan ini dijangka akan dapat disiapkan pada tahun 2000.

### Program, Penyelidikan dan Penerbitan

Pada tahun ini satu lagi program baru telah diluluskan oleh Kementerian Pendidikan Malaysia. Walau bagaimanapun penawaran program Bachelo Reka Bentuk (Seni Bina) ini hanya akan dibuat pada sesi kemasukan semester Mei 2000 nanti.

## FACULTY OF DESIGN AND ARCHITECTURE

### Development

The Faculty was established on 26 June 1996. Initially four Departments were planned but currently two are in operation. These are the Department of Landscape Architecture and Department of Architecture.

The Faculty has 69 academic staff, and plans are underway to recruit new staff in fields such as Industrial Design, Urban Design and Multimedia Design. The graduate and post-graduate student population has been increasing and in 1999 it was 28.

The Faculty has been allocated RM10.3 M by the government to build the Faculty complex housing studio rooms, laboratories, administrative rooms and lecturers' rooms. These buildings are expected to be completed by year 2000.

### Programmes, Research and Publications

A new programme, the Bachelor of Design (Architecture) has been approved by the Ministry of Education and will be offered in the May 2000 semester. A new programme, Diploma in Landscape Management has been approved by the Board of Directors of UPM but its implementation has been delayed in order to allow the UPM's management team to develop a mechanism for a more stream-lined Diploma programme in UPM. Of the four research projects carried out by the Faculty, two are IRPA funded while two others are by UPM short-term allocations. The total amount allocated for these research projects is RM456,620.00.

Selain itu, cadangan penawaran program Diploma Pengurusan Landskap telah pun dipersetujui oleh Lembaga Pengarah Universiti. Walau bagaimanapun penawarannya ditangguhkan untuk memberi masa kepada pengurusan universiti merangka mekanisma baru penawaran program-program diploma UPM.

Pada tahun 1999, sebanyak empat projek penyelidikan telah dijalankan oleh Fakulti Reka Bentuk dan Seni Bina. Daripada jumlah tersebut, dua projek adalah tajaan IRPA, sementara dua projek yang telah dijalankan dibiayai oleh projek jangka pendek UPM. Keseluruhan pembiayaan yang diperolehi untuk menjalankan penyelidikan ini berjumlah RM456,620.00. Pihak fakulti telah berjaya menerbitkan 10 penerbitan, 14 kursus landskap dikendalikan Professional Training Center dan lapan kursus dikendalikan oleh University Garden Center, Fakulti Reka Bentuk dan Seni Bina, Landskap

## Aktiviti

Antara aktiviti yang dianjurkan oleh fakulti ialah:

- Ekspedisi Jati Diri III yang telah diadakan di Kem Belia Perak pada 12 –16 Julai 1999.
- Hari Terbuka FRSB 99.
- Minggu Reka Bentuk 99.

Pihak fakulti telah memberi khidmat Perundingan dan Khidmat Nasihat berkenaan dengan landskap kepada pihak dalam UPM dan juga luar UPM. Antara pihak luar yang turut mendapatkan khidmat nasihat ialah Majlis Sukan Negara Malaysia.

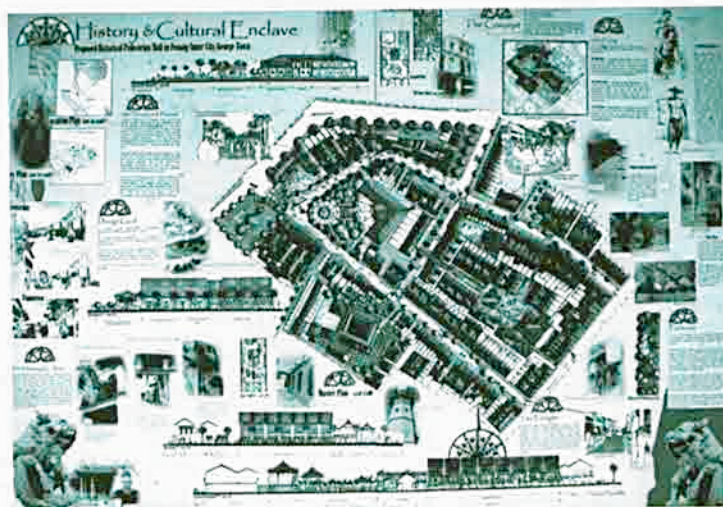
In terms of publications, Faculty members have published 10 articles. Fourteen Landscape courses have been conducted by the Professional Training Centre while eight other courses have been conducted by the University Garden Centre of the Faculty.

## Activities

The activities sponsored by the Faculty were:

- Jati Diri III Expedition at Youth Camp Perak, 12-16 July 1999
- Faculty Open Day 1999
- Design Week 99

The Faculty has also rendered Consultancy & Advisory services on landscaping both to departments at UPM and to external agencies. The National Sports Council of Malaysia is one agency which has received such services.





## FAKULTI SAINS KOMPUTER DAN TEKNOLOGI MAKLUMAT

### Perkembangan

Seorang kakitangan akademik fakulti telah dianugerahkan "*Fellowship British Council Commonwealth*" selama setahun mulai 1999/2000.

Fakulti telah dipilih untuk menempatkan seorang pelajar luar negara dari Mauritius ke program Bachelo Sains Komputer pada sesi Mei 1999-2000. Kemasukan pelajar ini adalah dalam rangka pertukaran pelajar dari kerajaan ke kerajaan (G to G programme). Pemilihan fakulti untuk menempatkan pelajar luar negara ini adalah satu pengiktirafan negara kepada program Bachelo Sains Komputer UPM.

Fakulti juga telah menerima lima pelajar tajaan Majlis Sukan Negara untuk mengikuti program Diploma Sains Komputer

### Penyelidikan, Penerbitan dan Aktiviti

Satu geran IRPA berjumlah RM203,000.00 telah diluluskan untuk penyelidikan bertajuk "*Strategic information System Planning Practices in Malaysia*". Manakala tujuh pegawai akademik berjaya mendapat geran penyelidikan jangka pendek berjumlah RM73,972.00. Sepanjang tahun 1999, kakitangan fakulti telah menghasilkan lebih daripada 10 penerbitan iaitu satu prosiding dan sembilan jurnal.

## FACULTY OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

### Development

A Faculty member was bestowed the 'Fellowship of British Council Commonwealth' for the year 1999/2000.

The Faculty was selected to receive a Mauritius student for the Bachelor of Computer Science programme for the May 1999-2000 session. This is a government exchange programme which gives recognition to the programmes offered by UPM.

The Faculty also accepted five students sponsored by National Sports Council to pursue the Diploma in Computer Science.

### Research, Publications and Activities

An IRPA grant of RM203,000 has been approved for the research project entitled '*Strategic Information System Planning Practices in Malaysia*'. Seven other short-term research projects with a total allocation of RM73,972.00 have been approved.

In terms of publications, ten articles have been published – nine in journals and one in a proceedings.

Antara aktiviti yang telah dianjurkan oleh Fakulti ialah:

- Bengkel Tatacara Pengajaran Program Diploma/Bachelor Sains Komputer untuk tenaga pengajar kolej-kolej francais pada 10 Mei hingga 14 Mei 1999 bertempat di Kolej IKRAM.
- Seminar INTEC '99 pada 18 Mei 1999.
- Bengkel sehari ISO 9000 dianjurkan oleh Fakulti Sains Komputer dan Teknologi Maklumat bertempat di Bilik Mutiara Budi, Bangunan Pentadbiran dengan kerjasama Unit Perancangan Korporat UPM.
- Bengkel Pengajaran dan Penyelidikan untuk pegawai akademik bertempat di Hotel Equatorial Bangi pada 6 Oktober 1999.
- Lawatan staf akademik fakulti ke MTDC Incubation Center pada 15 Oktober 1999.

Jadual 26 menunjukkan butiran aktiviti seminar Fakulti

Among the activities organised by the Faculty are:

- Workshop on *Teaching Methods for Diploma/Bachelor of Computer Science Programme* for academic staff of franchised colleges at College IKRAM, 10 – 14 May 1999.
- *INTEC '99 Seminar*, 18 May 1999
- A one-day workshop on *ISO 9000*. Organised by the Faculty in collaboration with the Corporate Planning Unit of UPM, it was held at Mutiara Budi Room, Administration Building.
- Workshop on *Teaching & Research for Academic Staff*, Equatorial Hotel, Bangi, 6 October 1999.
- Staff visit to MTDC Incubation Centre, 15 October 1999.

Table 26 shows details of the Faculty's Seminar Activities.

JADUAL/TABLE 26

AKTIVITI SEMINAR  
SEMINAR ACTIVITIES

Tarikh Date	Pembentangan Presenters	Topik Topics
11/8/99	En. Mohd Azhar b. Muhammad	Object-oriented databases
27/8/99	Dr. Elok Robert Tee & Wan Fariz	Ethical issues in computer and communication
10/9/99	Dr. Mohamed Othman	Paralled computing
24/9/99	En. Mohd Nordin Zakaria	Hybrid shear-wap rendering
1/10/99	Pn. Izura Udzir	Database retrieval using a neural network
13/10/99	Prof. Randay Goebel Alberta University, Canada	Hypothetical Learning
15/10/99	Dr. Hamidah Ibrahim	Distributed Databases
29/10/99	Pn. Rozita Johari	Analysis and Design of Paralled Cavatation Bubble Dynamic Problem
12/11/99	Pn. Hazura Zulzaïli	Human Computer Interface: Usability Studies
26/11/99	Dr. Ramlan Mohamod	Analysis of RSA and LUC Algorithm for Data Security
10/12/99	Dr. Pua Chai Seng	Parallel DBMS Performance Modelling



## FAKULTI SAINS MAKANAN DAN BIOTEKNOLOGI

## FACULTY OF FOOD SCIENCE AND BIOTECHNOLOGY

### Perkembangan

### Development

Fakulti Sains Makanan dan Bioteknologi terdiri daripada tiga jabatan iaitu Jabatan Sains Makanan, Jabatan Teknologi Makanan dan Jabatan Bioteknologi yang menawarkan program Bacelor Sains dan Teknologi Makanan, Bacelor Sains (Pengajian Makanan), Bacelor Sains (Bioteknologi). Manakala bagi program ijazah lanjutan, fakulti menawarkan program dalam bidang Sains Makanan, Teknologi Makanan dan Bioteknologi.

This Faculty consists of three Departments – Department of Food Science, Department of Food Technology and Department of Biotechnology. These departments offer Bachelor of Science and Food Technology, Bachelor of Science (Food Science), and Bachelor of Science (Biotechnology).

Bilangan tenaga pengajar pada tahun 1999 ialah seramai 39 orang dan empat tutor. Sebanyak 83% daripada bilangan tenaga pengajar telahpun mempunyai kelulusan akademik tertinggi iaitu Ph.D. Daripada jumlah tenaga pengajar, seramai tujuh orang berpangkat profesor dan 10 orang berpangkat profesor madya. Pada tahun 1999 seramai tiga pensyarah baru telah dilantik dan dua pensyarah telah meletakkan jawatan. Sementara itu jumlah pegawai sokongan ialah seramai 45 orang.

#### STATISTIK PELAJAR STUDENTS' STATISTICS

Ijazah Degree	1191
Sarjana Master	169
Doktor Falsafah Ph.D	48
<b>JUMLAH/TOTAL</b>	<b>1408</b>

### Penyelidikan dan Penerbitan

Selain daripada pengajaran, pensyarah-pensyarah Fakulti juga menjalankan aktiviti penyelidikan. Fakulti memperoleh 42 geran penyelidikan IRPA yang kebanyakannya tamat pada tahun 1999 dengan jumlah peruntukan sebanyak RM678,460.00. Sebanyak 72 penyelidikan telah dijalankan oleh pensyarah-pensyarah Fakulti. Hasil daripada aktiviti penyelidikan yang dijalankan oleh Fakulti, sebanyak 276 karya penerbitan telah dihasilkan. Jadual 27 adalah senarai penerbitan mengikut pecahan penerbitan.

The Faculty offers 3 graduate programmes, namely Food Science, Food Technology and Biotechnology. In 1999, the faculty staff consisted of 39 lecturers and two tutors of which 83% were Ph.D holders. Of these, seven are professors and ten are Associate Professors. In 1999, two lecturers retired and three new lecturers have been appointed. The Faculty has 45 Support Service staff.

### Research and Publications

A part from teaching, lecturers are also involved in research activities. The Faculty obtained 42 IRPA research grants amounting to RM678,460.00. For 1999, Faculty staff were involved in 72 research projects. From the research activities carried out, 276 publications have been published. The breakdown for category of publications is given in Table 27.

JADUAL/TABLE 27

PENERBITAN PUBLICATIONS	
Penerbitan Publications	Bilangan Number
Jurnal (telah diterbitkan) Journal articles (published)	49
Jurnal (dalam proses/diterima untuk penerbitan) Journal articles (In press)	89
Buku/Bab dalam buku Books/Chapters in books	4
Prosiding/Pembentangan Proceedings/Papers presented	134
Jumlah/Total	276

Memorandum Persefahaman antara UPM-JICA mengenai "Aftercare Technical Cooperation Programme for the Development of the Department of Biotechnology", ditandatangani pada 18 Mac 1999 untuk selama 2 tahun. Program bantuan negara Jepun ini lanjutan daripada kerjasama selama 5 tahun, dari 1991-1995. Objektif program adalah untuk memberi bantuan teknikal dalam aktiviti penyelidikan dalam bioteknologi. Anggaran sebanyak RM90,000 telah diperuntukkan bagi membeli peralatan penyelidikan. Seramai 8 staf akademik akan dihantar ke Jepun untuk dilatih dalam bidang "Enzyme Fermentation and Bio-process/Biochemical Engineering." Lapan pakar dari negara Jepun akan berada di Jabatan Bioteknologi untuk menjalankan penyelidikan dalam beberapa bidang bioteknologi.

### Aktiviti

Sepanjang tahun 1999, Fakulti telah menjalankan beberapa aktiviti seperti berikut:

- Menerima pelawat dari 23 sekolah di seluruh Malaysia.
- Lawatan Dr. Francois Giroux dan Dr. Didier Montet dari Ensia-Siarc, Montpellier, Perancis.
- Menandatangani memorandum persefahaman dengan agensi berikut:
  - University of Mauritius, Reduit, Mauritius dalam bidang 'staff and student exchange'.
  - KFC Holding Berhad dalam membantu menyediakan kurikulum bagi penawaran program 'Diploma in Food Service/Restaurant Management'.
  - Syarikat Integrated HOS (M) Sdn. Bhd. dalam membekalkan perisian 'Hotel Software' bagi program BS (PMK).
- Hari Penyampaian Hadiah Fakulti
- Hari Pengenalan Produk Baru
- Seminar sehari 'Food & Beverage Industry Towards New Millenium: Quality, Global Trade & Funding' anjuran bersama FSMB & Malaysian Institute of Quality Assurance Berhad.
- Molecular Tools for Biotechnology – A training course on isolation and screening of microbes for useful materials.
- Kursus sehari memproses mee kuning & tauhu keras.
- Kursus Asas Bakeri (peserta dari MEDEC, ITM).
- Kursus memproses sos cili dan mee kuning (peserta dari PEKIMA).

Malaysian Toray Science Foundation Research Grant 1999 diterima oleh Dr. Hirzun Mohd. Yusof.

The MOU with UPM-JICA on *Aftercare Technical Cooperation Programme for the Development of the Department of Biotechnology*, was signed on 18 March 1999 for a 2-year period. This Japanese aid programme is a continuation of the first 5-year period of cooperation from 1991-1995. The objective of the programme is to provide technical assistance in research activities in biotechnology. An estimated RM900,000.00 has been allocated to purchase research equipment and eight academic staff will be sent to Japan for training in the fields of Enzyme Fermentation and Bio-process/Biochemical Engineering. Eight Japanese experts will also be stationed at the Department of Biotechnology to carry out research in several biotechnology fields.

### Activities

Among the activities the faculty was involved in are:

- Visit by 23 schools from all over Malaysia
- Visit by Dr. Francois Giroux and Dr. Didier Montet from Ensia-Siarc, Montpellier, France
- Signing of Memorandum of Understanding with
  - University of Mauritius, Reduit, Mauritius on 'Staff & Student exchange' programme
  - KFC Holding Ltd. which will assist in designing the curriculum in the Diploma in Food Service/ Restaurant Management Programme.
  - Integrated HOS (M) Ltd. Co. in providing Hotel Software Programme BS (PMK)
- Faculty Prize Giving Ceremony
- New Product Introduction Day
- One day Seminar on *Food & Beverage Industry Towards the New Millennium: Quality, Global Trade & Funding* sponsored jointly by FSMB & the Malaysian Institute of Quality Assurance Ltd.
- Molecular tools for Biotechnology – A training course on isolation and screening of microbes for useful materials.
- One-day course on processing yellow mee & hard soya cake.
- Foundation Bakery Course (participants were from MEDEC, ITM)
- Course in processing chilly sauce & yellow mee (participants were from PEKIMA)

Dr. Hirzun Mohd. Yusof was awarded the Malaysian 1999 Toray Science Foundation Research Grant.



## FAKULTI SAINS DAN PENGAJIAN ALAM SEKITAR

Dalam tahun 1999 seramai tiga pegawai akademik Fakulti dinaikkan pangkat kepada jawatan Profesor dan lima orang telah dinaikkan pangkat ke jawatan Prof. Madya. Fakulti juga telah menyediakan beberapa kertas kerja untuk menawarkan Program Sarjana Sains melalui struktur C. Di samping itu pengubahsuaian kurikulum 120 kepada 200 kredit turut dilaksanakan bagi semua program yang ditawarkan oleh Fakulti.

Prof. Dato' Dr. Sham bin Mohd. Sani dari Universiti Kebangsaan Malaysia, telah dilantik sebagai Penilai Luar untuk program Bachelo Sains (Alam Sekitar). Prof. Dr. Nor Muhammad Mahadi dari Universiti Kebangsaan Malaysia sebagai Penilai Luar bagi program Bachelo Sains (Kepujian) Major Mikrobiologi.

### Pelantikan

- Prof. Dr. Wan Md. Zin Wan Yunus telah dilantik sebagai Dekan menggantikan Prof. Dr. Muhamad Awang yang dilantik sebagai Timbalan Naib Canselor (Pembangunan).
- Prof. Madya Dr. Abdul Halim Shaari telah dilantik menjadi Timbalan Dekan (Penyelidikan) menggantikan Prof. Madya Dr. Kaida Khalid.
- Prof. Madya Dr. Johari Ramli telah dilantik sebagai Ketua Jabatan Biokimia dan Mikrobiologi bagi menggantikan Prof. Madya Dr. Nor Aripin Shamaan.

Prof. Madya Dr. Hj. Wan Mahmood Mat Yunus, Ketua Jabatan Fizik telah menerima anugerah dari Japan Society for The Promotion of Science (JSPS).

## FACULTY OF SCIENCE AND ENVIRONMENTAL STUDIES

In 1999, three academic staff were promoted to Professors and five others to Associate Professors. The Faculty has prepared working papers to offer a new Structure C postgraduate programme. The restructuring of programmes from 120 to 200 credits is being carried out by the Faculty.

Prof. Dato' Dr. Sham bin Mohd. Sani from UKM has been appointed as the external examiner for the Bachelor of Science (Environment) programme. Prof. Dr. Nor Muhammad Mahadi from UKM has been appointed the external examiner for the Bachelor of Science (Honours) (Microbiology Major) programme.

### Appointments

- Prof. Dr. Wan Md. Zin Wan Yunus was appointed the Dean to replace Prof. Dr. Muhamad Awang who was promoted to Deputy Vice Chancellor (Development).
- Assoc. Prof. Dr. Abdul Halim Shaari replaced Assoc. Prof. Dr. Kaida Khalid as the Deputy Dean (Research).
- Assoc. Prof. Dr. Johari Ramli replaced Assoc. Prof. Dr. Nor Aripin Shamaan the Head of the Department of Biochemical & Microbiology.

Assoc. Prof. Dr. Hj. W. Mahmood Mat Yunus, Head of Physics Department was awarded the Japan Society for the Promotion of Science (JSPS) Award.

## Penerbitan dan Penyelidikan Bersama

Fakulti telah menghasilkan sejumlah 526 penerbitan termasuk 139 jurnal, 187 prosiding, 145 kertas kerja, 18 judul buku, 13 modul, 13 laporan dan 11 majalah. Penerbitan jurnal dan buku menunjukkan satu peningkatan berbanding tahun 1998, hanya 95 jurnal dan lima judul buku sahaja.

Agensi luar yang terlibat dalam kerjasama penyelidikan dengan Fakulti ialah Center for International Forestry Research (CIFOR), Jabatan Pengairan dan Saliran (JPS), DANCED, UNEP, British Council, Institute for Strategic and International Studies (ISIS), National Institute of Materials and Chemical Research, Japan, ICTP, Italy, PORIM, Lembaga Koko Negara, Jabatan Muzium dan Antikuiti Negara, Petronas, ESSO, University Kagoshima, Chiba natural History Museum and Institute, Japan, Institut Perikanan Malaysia, FRIM, MIT (USA), JSPS, ICME, dan AMREC.

## Aktiviti dan Peristiwa Penting 1999

Sepanjang tahun 1999, fakulti telah menjalankan beberapa aktiviti. Antaranya seperti di bawah:

- Hari Keluarga, Jabatan Fizik
- Perjumpaan suku abad Pengajaran Jabatan Biokimia dan Mikrobiologi (REUNION 2)
- Program Kesedaran Guru-guru Sains
- International Conference on The Straits of Malacca
- Hari Intelek Sains
- Pameran Program Penggalakan Sains Peringkat Negeri Kelantan
- Bengkel Halatuju Program Sains di IPTA
- IRPA Workshop on Environmental Sector
- Bengkel Reka Bentuk Uji Kaji
- Workshop on Interactive Time Series Modelling and Forecasting

## Pelawat

- Ms. Linda Pennells, CIDA (Canadian International Development Agency)
- Dr. Yasunari Matsuno, National Institute for Resources and Environment (NIRE) of Japan
- Mr. Kenichi Murata, Konica Co.'s Environmental Safety Department

## Publications and Research Linkages

There has been a rapid increase in publications from the 1998 figures of 95 journal articles and 5 books to 526 publications of which 139 were journal articles, 187 were papers in proceedings, 145 were working papers, 18 books, 13 reports and 11 were articles in magazines.

Several agencies have established research linkages with the Faculty. These are the Centre for International Forestry Research (CIFOR), Drainage & Irrigation Department (JPS), DANCED, UNEP, British Council, Institute for Strategic and International Studies (ISIS) National Institute of Materials and Chemical Research, Japan, ICTP, Italy, PORIM, National Cocoa Board, National Antiquity and Museum Department, Petronas, ESSO, University Kagoshima, Chiba Natural History Museum and Institute, Japan, Fishery Institute Malaysia, FRIM, MIT (USA), JSPS, ICME and AMREC.

## Activities and Important Events

Various activities were carried out by the Faculty for 1999:

- Family Day, Department of Physics
- Quarter Century Reunion – Department of Biochemical and Microbiology (REUNION 2)
- Science Awareness Programme for Teachers
- International Conference on the Straits of Malacca
- Science Intellect Day
- Science Encouragement Programme & Exhibition for Kelantan State
- Workshop on Direction of Science at IPTA
- IRPA Workshop on the Environmental Sector
- Workshop on Design Trials
- Workshop on Interactive Time Series Modelling and Forecasting

## Visitors

- Ms. Linda Pennells, CIDA (Canadian International Development Agency)
- Dr. Yasunari Matsuno, National Institute for Resources and Environment (NIRE) of Japan
- Mr. Kenichi Murata, Konica Company's Environmental Safety Department
- Mr. Hiroshi Onishi, Matsushita Company
- Mr. Hitoshi Koyama, MIT's International Research and Development Cooperation Division of Japan

- Mr. Hiroshi Onishi, Matsushita Co.
- Mr. Hitoshi Koyama, MITI's International Research and Development Corporation Division of Japan.
- Prof. Nobuji Nakatani, Osaka City University, Japan.
- Prof. Brian Collins, Dean of Faculty of Science, Curtin University, Perth, Australia.
- Assoc. Prof. Dr. Nozomu Iwasaki, USA Marine Environmental Studies, Ehime University, Nakajima, Japan.
- Dr. Kenji Soda, Kansai University, Japan.
- Prof. Waheed Akhtar, Institute Biochemistry and Biotechnology, University Punjab.
- Dr. Andrian Elliot, CSIRO Canberra, Australia.
- Ali El-Tahir Sharuf el-Din, Sudan Institute of Natural Sciences, Khartoum.
- Jamshid Amighian, Physic Department, Isfahan University, Isfahan, IRAN.
- Prof. Silvio Dotrini, Scientific Attache, embassy of the Republic Italy.

- Prof. Brian Collins, Dean of Faculty of Science, Curtin University, Perth, Australia
- Assoc. Prof. Dr. Nozomu Iwasaki, USA Marine Environmental Studies, Ehime University, Nakajima, Japan
- Dr. Kenji Soda, Kansai University Japan
- Prof. Waheed Akhtar, Institute of Biochemistry and Biotechnology, University of Punjab
- Dr. Andrian Elliot, CSIRO Canberra, Australia
- Ali El-Tahir Sharuf el-Din, Sudan Institute of Natural Science, Khartoum
- Jamshid Amighian, Physics Department, Isfahan University, Isfahan, Iran
- Prof. Silvio Dotrini, Scientific Attache, Embassy of the Republic of Italy

## PUSAT PENGAJIAN SISWAZAH PENGURUSAN MALAYSIA (MGSM)

### Perkembangan

Pusat Pengajian Siswazah Pengurusan Malaysia ditubuhkan pada bulan Mei 1997 hasil daripada perjanjian persefahaman antara kumpulan syarikat TRI (yang merangkumi Technology Resource Industries Bhd, Malaysia Airlines Berhad, Cellular Communications Network Sdn Bhd, (Celcom) dengan Malaysia Helicopter Services Berhad (Naluri Berhad) dan Universiti Putra Malaysia. MGSM ditubuhkan sebagai sebuah institusi terulung negara yang bertujuan untuk memberi pendidikan pascasiswazah dan program-program latihan dalam bidang pengurusan perniagaan.

Hasil kerjasama dengan Fakulti Ekonomi dan Pengurusan UPM, MGSM menawarkan berbagai-bagai program pascasiswazah dan program pembangunan eksekutif termasuklah program Sarjana Pentadbiran Perniagaan (MBA), Sarjana Sains, Sarjana Pengurusan dan Doktor Falsafah (Ph.D). Pada tahun 1999, lebih daripada 500 pelajar telah mendaftar di MGSM. Jumlah kemasukan dan enrolmen pelajar adalah seperti dalam Jadual 28.

## MALAYSIAN GRADUATE SCHOOL OF MANAGEMENT (MGSM)

### Development

MGSM was established in May 1997 following an MOU between TRI group of companies Technology Resource Industries Ltd., Malaysian Airlines Ltd., Cellular Communications Network Ltd. (Celcom) and Helicopter Services Ltd. (Naluri Ltd.) and UPM. MGSM's prime objective is to provide post graduate courses and other related training programmes in Business Management.

JADUAL/TABLE 28

#### PENGAMBILAN DAN ENROLMEN PELAJAR DI MGSM INTAKE AND ENROLMENT OF STUDENTS AT MGSM

Program Programme	Kemasukan Entry	Enrolmen Enrolment
Sarjana Pentadbiran Perniagaan MBA	229	370
Sarjana Pengurusan Masters in Management	126	156
Sarjana Sains M. Sc	17	27
Doktor Falsafah Ph. D	17	35
<b>Jumlah/Total</b>	<b>389</b>	<b>588</b>

## Penerbitan dan Khidmat Rundingan

Pihak MGSM juga melibatkan diri dalam bidang penerbitan. Antaranya MGSM menerbitkan 12 jurnal, lima judul buku dan 18 kertas seminar telah dibentangkan oleh kakitangan akademik. MGSM juga telah memberi khidmat dan perundingan seperti berikut:

- "A Feasibility Study of a Medium Density Fibre Board Plant Utilising Oil Palm Fibre. Project conducted for Johor Corporation"
- Pelan Pembangunan Strategik Negeri Kelantan. (Bertanggungjawab untuk sektor perniagaan)
- "Marketing of Classified Fruit Juice, IRPA, MPKSN, 1999-2000"
- "Marketing of Fish in Malaysia", 1998-1999 MIER

## PUSAT PENGAJIAN MATRIKULASI (PPM)

### Perkembangan

Pada tahun 1999 (Sesi Mei 99/2000) PPM menawarkan tempat program pengajian kepada 1,375 pelajar seperti dalam Jadual 29 di bawah.

Pelajar yang dipilih untuk mengikuti program Matrikulasi UPM telah ditempatkan di Kampus Induk Serdang dan Kolej MARA Kulim.

### Aktiviti

Bagi mengawal selia mutu pengajian Program Matrikulasi, perkara-perkara berikut telah dilakukan:

- Taklimat penyelarasan kepada semua kampus dijalankan pada setiap awal semester pengajian.
- Modul Pengajaran bagi setiap kursus disediakan oleh kampus induk dan semua kampus diwajibkan mematuhi sepenuhnya modul tersebut.

In collaboration with the Faculty of Economics and Management, MGSM was able to offer various programmes for post graduate studies as well as executive development programmes such as the Masters in Business Administration (MBA), Masters in Science, Masters in Management and Ph.Ds. Student intake for 1999 was 500. The breakdown of students by programme is shown in Table 28.

## Publications and Consultancy Services

MGSM staff have published 12 articles in journals, 5 books and have presented 18 seminar papers. MGSM has provided the following consultancy service:

- A Feasibility Study of a Medium Density Fibre Board Plant Utilising Oil Palm Fibre for Johor Corporation
- Strategic Development Plan for Kelantan (Business Sector)
- Marketing of Classified Fruit Juice, IRPA, MPKSN 1999/2000
- Marketing of Fish in Malaysia, 1998-1999 for MIER

## MATRICULATION STUDIES CENTRE (PPM)

### Development

For the May 99/2000 session, PPM offered several programmes to 1,375 students as shown in Table 29. Students selected for the matriculation programmes were housed at the main campus at Serdang and MARA College, Kulim.

### Activities

To coordinate and monitor the matriculation programmes the following steps were taken:

- A briefing on coordination among the various campuses at the beginning of the session

JADUAL/TABLE 29

#### PELAJAR DI PPM MENGIKUT PROGRAM STUDENTS AT PPM BY PROGRAMME

Program Programme	Bilangan Pelajar No. of Students
<b>Matrikulasi Sains</b> Science Matriculation	779
<b>Matrikulasi Kejuruteraan</b> Engineering Matriculation	191
<b>Matrikulasi Perubatan</b> Medical Matriculation	28
<b>Matrikulasi Perakaunan dan Pengurusan</b> Accountancy & Management Matriculation	377
<b>Jumlah/Total</b>	<b>1375</b>

- Jawatankuasa Peperiksaan Pusat Pengajian Matrikulasi telah ditubuhkan bagi mengendalikan urusan peperiksaan berpusat.
- Lawatan ke kampus-kampus telah dilakukan oleh penyelaras-penyelaras kursus sepanjang semester pengajian.

Antara bengkel yang dianjurkan oleh Pusat ini ialah:

- Bengkel Penggubalan Soalan Fizik Matrikulasi
- Bengkel Kaedah Penggubalan Soalan

- Teaching modules for each programme were prepared in the main campus and all branch campuses were required to use the modules
- A Matriculation Examinations Committee was established to conduct centralized examinations
- Supervisors visited the various campuses regularly during the semester

Two workshops were organised by PPM:

- Workshop on Question Setting for Physics
- Methodology Workshop on Question Setting

## PUSAT PROGRAM LUAR (PPL)

### Perkembangan

Pusat Program Luar yang ditubuhkan pada bulan Mei 1997 bertanggungjawab untuk merangka dasar, merancang, menyelaraskan dan menyelia program kerjasama antara UPM dengan institusi pendidikan tinggi luar (IPTL), khususnya Institusi Pengajian Tinggi Swasta (IPTS) dan institusi luar negara. Program kerjasama ini yang digelar Program Luar merupakan suatu aktiviti yang membolehkan IPTL menawarkan program akademik UPM di premis mereka. Melalui pendekatan ini, bilangan pelajar yang dapat mengikuti program diploma dan ijazah UPM telah bertambah dengan begitu ketara walaupun kapasiti dalam kampus terhad.

### Program

Pada Semester Mei 1999, program-program ijazah dan diploma berikut ditawarkan secara kerjasama dengan IPTS:

- Bacelor Pendidikan (Pengajaran B. Malaysia sebagai Bahasa Pertama - PBMP)
- Bacelor Pendidikan (Teaching of English as a Second Language - TESL)
- Bacelor Pendidikan (Bimbingan dan Kaunseling – B&K)
- Bacelor Pendidikan (Pendidikan Jasmani)
- Bacelor Pendidikan (Sains Pertanian)
- Bacelor Pendidikan (Sains Rumah Tangga)
- Bacelor Pentadbiran Perniagaan
- Bacelor Kejuruteraan (Awam)
- Bacelor Kejuruteraan (Elektrik dan Elektronik)
- Bacelor Kejuruteraan (Kimia)

## EXTERNAL PROGRAMMES CENTRE (PPL)

### Development

This centre was established in May 1997 and tasked with planning policies, coordinating and supervising franchised programmes between UPM and private institutions of higher learning particularly Private Institutes of Higher Learning (IPTS) and foreign institutes. PPL's aim is to offer as many academic programmes as possible at the premises of the franchised colleges. This has allowed for an increasing number of students to pursue programmes offered by UPM despite the limiting capacity of the UPM campus.

### Programmes

For the May 1999 semester, the following Bachelor and Diploma programmes were offered in collaboration with the of IPTS:

- Bachelor of Education (PBMP)
- Bachelor of Education (Teaching of English as Second Language – TESL)
- Bachelor of Education (Guidance & Counselling – B&K)
- Bachelor of Education (Physical Education)
- Bachelor of Education (Agricultural Science)
- Bachelor of Education (Home Science)
- Bachelor of Business Administration
- Bachelor of Engineering (Civil)
- Bachelor of Engineering (Electric & Electronics)
- Bachelor of Engineering (Chemical)
- Bachelor of Engineering (Mechanical)
- Bachelor of Engineering (Computer System & Communication)

- Bachelor Kejuruteraan (Mekanikal)
- Bachelor Kejuruteraan (Sistem Komputer dan Komunikasi)
- Bachelor Sastera
- Bachelor Sains Komputer
- Diploma Sains Komputer
- Diploma Pembangunan Manusia
- Diploma Perniagaantani
- Diploma Perhutanan
- Diploma Pertanian
- Diploma Kejuruteraan Awam
- Diploma Kejuruteraan Elektronik
- Diploma Kejuruteraan Mekanikal
- Diploma Kejuruteraan Teknologi Multimedia

Sebanyak 30 IPTS terlibat dalam pengendalian salah satu program tersebut di atas atau lebih dengan jumlah enrolmen 7,606 pelajar di kalangan mereka. Satu program baru, Diploma Pengurusan Perniagaan turut ditawarkan mulai Semester November 1999 di empat buah IPTS. Kumpulan graduan pertama menerusi Program Luar telah berjaya dikeluarkan bagi program-program berikut, iaitu seramai 732 orang.

### Kawalan Kualiti

Dalam menjayakan Program Luar UPM, perkara utama yang diberi penekanan ialah aspek kawalan mutu supaya dapat memastikan mutu graduan yang dihasilkan setanding dan memenuhi piawai yang ditetapkan oleh UPM bagi pelajar di kampus induk. Ini dilaksanakan dengan beberapa cara seperti berikut:

- IPTS memenuhi piawai minimum yang ditetapkan oleh Lembaga Akreditasi Negara (LAN)
- Menggunakan kurikulum dan sistem penilaian yang sama seperti di dalam kampus
- Peperiksaan akhir disediakan oleh UPM dan dijalankan serentak di semua IPTS
- UPM mengawal selia mutu ujian dan kerja kursus lain sepanjang semester
- UPM melantik seorang penyelaras untuk mengawal selia pengendalian setiap program pengajian di sesebuah IPTS
- Fakulti menubuhkan Unit Program Luar untuk menyelaras penawaran program dan kursus-kursus di bawah kawalannya
- Audit mutu tahunan oleh Jawatankuasa Kawalan Mutu Program Akademik UPM (JUMPA), iaitu, suatu jawatankuasa bebas yang dilantik oleh Senat UPM
- Latihan kepada tenaga pengajar dan pentadbir IPTS

- Bachelor of Arts
- Bachelor of Computer Science
- Diploma in Computer Science
- Diploma in Human Development
- Diploma in Agribusiness
- Diploma in Forestry
- Diploma in Agriculture
- Diploma in Civil Engineering
- Diploma in Electronic Engineering
- Diploma in Mechanical Engineering
- Diploma in Multimedia Technology Engineering

To date 30 IPTS are involved in conducting one or more of the programmes and have a total enrolment of 7,606 students. Beginning November 1999, IPTS began offering a new programme, the Diploma in Business Management. An initial batch of 732 students have convocated from these external programmes.

### Quality Control

Among the quality control measures taken by PPL to ascertain that standards are met and that the quality of the programme is akin to those on campus are:

- IPTS adhere to the minimum standards set by the National Accreditation Board (LAN)
- Use of the on-campus curriculum and evaluation system
- Centralised examination questions setting at the main campus for use by the franchised colleges
- Supervision of the testing standards and course work on a regular basis
- Appointment of a coordinator to supervise implementation of programmes at each IPTS
- The establishment of an External Programme Unit by each faculty to supervise the courses offered
- Annual Quality Audit conducted by the Committee for Academic Quality Control UPM (JUMPA), an independent body set up by the Senate
- Regular training for teaching staff and administrators of IPTS

## KHIDMAT SOKONGAN SUPPORT SERVICES



### INSTITUT BIOSAINS

#### Pembangunan

Semenjak Institut Biosains ditubuhkan pada pertengahan tahun 1996, ia telah membangun dan maju dengan pesatnya. Peranan utama yang termaktub dalam statutnya ialah mewujudkan suatu landasan untuk penyelidik di UPM menjalani penyelidikan serta melatih siswazah dalam pelbagai bidang biologi, terutama dalam teknologi tinggi. Dari segi itu, penyelidikan dan pembangunan (R&D) yang dijalankan berfokus pada pengeluaran makanan dan peningkatan kesihatan penduduk Malaysia.

Bidang-bidang penyelidikan yang dijalankan di Institut Biosains adalah terpilih dan berkaitan antara satu sama lain. Ia merupakan penyelidikan yang strategik, pelbagai disiplin dan *top-down*. Setakat ini, 13 pusat dan makmal telah diwujudkan dalam Institut Biosains yang merangkumi bidang-bidang penyelidikan yang boleh membantu meningkatkan ekonomi dan taraf hidup.

- Pusat Sumber Genetik Tumbuhan

### THE BIOSCIENCE INSTITUTE

#### Development

Since its inception in mid-1996, the Bioscience Institute has seen rapid growth. The primary role of the Institute is to further develop postgraduate research and training in biology and high-tech fields. Thus R&D has seen a focus on food production and enhancing the health status of Malaysians. The research conducted at the Institute is multi-disciplinary, strategic and top-down. Thirteen centres and laboratories have been built in the Bioscience Institute to facilitate research on improving the economy and living standards.

- Plants Genetic Resources Centre
- Analytical & Basic Products Centre
- Precision Agriculture and Remote Sensing Bioresource Centre
- Cancer Research Centre
- Drug Discovery Centre
- Aquatic Resource Technology Centre
- Digestive Microbiology Laboratory

- Pusat Analitikal dan Produk Tulen
- Pusat Pertanian Tepat dan *Remote Sensing* Biosumber
- Pusat *Drug Discovery*
- Pusat Penyelidikan Kanser
- Pusat Teknologi Sumber Akuatik
- Makmal Mikrobiologi Penghadaman
- Pusat Teknologi Sumber Akuatik
- Makmal Biologi Molekul
- Pusat Genom
- Pusat Teknologi Fermentasi
- Pusat Teknologi Biokomposit
- Pusat Mikroskopi Elektron dan Sistem Imejan

Pusat Teknologi Fermentasi ialah satu pusat yang baru ditubuhkan di Institut Biosains dan ia ditempatkan di Putra Infoport sementara bangunan Kompleks R&D UPM dapat disediakan. Tumpuan diberi kepada pusat ini kerana lebih daripada 20 penemuan penyelidikan tersedia untuk ditingkatkan pengeluaran (*scale-up*) dan dikomersilkan. Peruntukan sebanyak RM9.7 telah diperolehi untuk mendapatkan bioreaktors bagi tujuan tersebut. Dengan tertubuhnya Pusat ini, proses pengkomersilasi produk penyelidikan yang inovatif dapat disegerakan untuk perkembangan industri bioteknologi di Malaysia.

### Kemudahan Penyelidikan

Pusat Genom merupakan satu lagi kemudahan penyelidikan pusat di Institut Biosains selain daripada Pusat Mikroskopi Elektron dan Sistem Imejan. Satu perkhidmatan yang telah dijalankan adalah penjujukan DNA. Peralatan *sequencer* yang telah diambil alih oleh Institut setelah ia tidak berfungsi kini telah dapat menjana keuntungan daripada hasil perkhidmatannya. Dari keuntungan yang diperolehi, Pusat Genom telah dapat mengambil seorang saintis sebagai penyelidik kontrak untuk mengurus peralatan tersebut. Dengan kejayaannya, Pusat ini akan dibekalkan dengan sebuah *sequencer* baru dan peralatan *DNA microarray* yang akan membawa penyelidikan UPM ke tahap tinggi.

Pusat ini kini dapat membekal perkhidmatan mikroskop elektron bukan sahaja kepada penyelidik dan pelajar siswazah dari UPM, tetapi juga dari institut penyelidikan berhampiran. Pusat ini telah menjalankan pelbagai penyelidikan termasuk dalam bidang sains bahan. Pusat ini juga aktif dalam mengadakan kursus dan bengkel mengenai mikroskop elektron dan konfokal dan telah berjaya melatih ramai saintis dan pelajar dalam bidang ini.

- Molecular Biology Laboratory
- Genome Centre
- Fermentation Technology Centre
- Biocomposite Technology Centre
- Microscopic Electron and Image System Centre

### Research Facilities

The newly established Fermentation Technology Centre is located temporarily at Putra Infoport awaiting completion of the R&D Complex. This Centre is given priority as 20 research breakthroughs are ready for scale-up and commercialisation. An allocation of RM9.7 M has been obtained to purchase bioreactors for research. This Centre is expected to expedite the process of commercialisation of innovative research products and assist in the development of the biotechnology industry in the country.

Two other research facilities at the Bioscience Institutes are the Genome Centre and Microscopic Electron and Image System Centre. DNA identification is another facility that is already available at the Institute. The taking over of the Sequencer equipment is already generating income and has allowed for the appointment of a Contract Researcher at the Genome Centre. The addition of another sequencer and a DNA microarray equipment is expected to result in cutting-edge research at UPM.

The Centre has been able to provide Electron Microscopic services both to researchers and postgraduate students from UPM and research institutions in the vicinity. The Centre is also involved in various research projects including those on material science. The various courses and workshops on Electron Microscope & Confocal organised by the Centre has contributed towards training scientists and students in this field.

## BAHAGIAN PEMBANGUNAN

Bahagian Pembangunan dipertanggungjawabkan untuk menyelenggara dan membangunkan prasarana dan infrastruktur kampus UPM. Sehingga tahun 1999, Bahagian Pembangunan telah menerima peruntukan berjumlah hampir RM141 juta di bawah Peruntukan Pembangunan Rancangan Malaysia Ke 7 (1996-2000).

Dalam tahun 1999, melalui pelbagai sumber pembiayaan seperti Peruntukan Pembangunan RMK7, Kumpulan Wang Pelaburan, Belanja Mengurus 'One-Off' dan Tabung-tabung Amanah, Bahagian Pembangunan telah menguruskan dan melaksanakan projek-projek berikut:

### Projek-projek yang telah siap

- Kolej Kediaman ke 10 dan ke 11
- Naik taraf bekalan air kampus UPM
- Naik taraf Jalan Alpha (Kolej Kediaman)
- Bangunan kafeteria UPM Terengganu
- Bangunan tambahan perpustakaan UPMT
- Bangunan pusat klinikal Fakulti Perubatan dan Sains Kesihatan UPM di Hospital Kajang
- Tempat letak kereta dewan kuliah Putra
- Naik taraf dan ubah suai kolej-kolej kediaman
- Pemasangan hawa dingin di Fakulti/Pusat/Institut
- Bangunan asrama atlit MSN

### Projek-projek dalam pembinaan

- Bangunan Fakulti Sains Gunaan dan Teknologi UPMT
- Stadium Mini UPM (Dewan Serbaguna, Trek Sintetik dan Padang Bolasepak)
- Kompleks Kejuruteraan dan Teknologi
- Kompleks Akademik Pusat
- Bangunan Fakulti Sains Komputer dan Teknologi Maklumat
- Makmal Sains dan Komputer UPMT
- Naik taraf Jalan Asam Jawa dan Jalan Masjid Sri Serdang
- Naik taraf Bangunan Fakulti Sains dan Pengajian Alam Sekitar
- Bangunan Tambahan Fakulti Ekonomi dan Pengurusan
- Dewan Kuliah, Fakulti Pengajian Pendidikan
- Bangunan Penerbit UPM
- Bangunan tandas dan bilik persalinan Masjid UPM
- Pemasangan lampu-lampu jalan sekitar kampus UPM

## DEVELOPMENT DIVISION

This Division is responsible for physical infrastructure development and maintenance of the University campus. Under the Seventh Malaysia Plan (1996-2000), the Division has so far received RM141 million.

Utilising funds from various sources such as RMK7, Investment Fund, 'One-off' allocations and other trust funds, the Division has undertaken several projects:

### Completed Projects

- The 10<sup>th</sup> & 11<sup>th</sup> Residential Colleges
- Upgrading of the water supply system in the campus
- Upgrading of Alpha Road (Residential Colleges)
- Cafeteria Building at Terengganu Campus
- Additional building for UPMT Library
- Clinical Centre for the Faculty of Medicine and Health Science at Kajang Hospital
- Car park for the Putra Lecture Hall Complex
- Upgrading of Residential Colleges
- Installation of air-conditioners at Faculties, Centres and Institutes
- Student Athletes' Hostel, MSN

### Projects Underway

- The UPMT Faculty of Applied Science and Technology Building
- UPM's Mini Stadium (Multipurpose Hall, Synthetic Track and Football Field)
- Engineering and Technology Complex
- Central Academic Complex
- Faculty of Computer Science and IT Building
- Science and Computer Laboratories at UPMT
- Upgrading of Jalan Asam Jawa and Jalan Masjid at Sri Serdang
- Renovations to the Faculty of Science and Environmental Studies
- Annex to the Faculty of Economics and Management
- Lecture Hall for the Faculty of Educational Studies
- A building for the University Press
- Toilets and Changing Rooms in the University Mosque
- Installation of street lights in the campus

## Projek-projek di Peringkat Tender/Dokumentasi

- Bangunan Kompleks Sains Sosial
- Bangunan tambahan Fakulti Perubatan dan Sains Kesihatan
- Bangunan Hal Ehwal Pelajar
- Bangunan Pusat Penyelidikan dan Pembangunan
- Bangunan Fakulti Reka Bentuk dan Seni Bina
- Membaik pulih dan kalis (waterproofing) bumbung Masjid UPM

## Projek-projek di Peringkat Perancangan

- Menaik taraf dan penyelenggaraan kabel dan perkakasan bekalan elektrik seluruh kampus
- Menaik taraf sistem pembentungan zon asrama
- Menaik taraf Perparitan induk
- Menaik taraf Jalan Pongamia dan Jalan Tulang Daing
- Menaik taraf Lebuh Silikon dan Jalan Maklumat
- Membina jalan baru penghubung Zon Selatan

## Projects Tendered/Documented

- Social Science Complex
- Additional building for Faculty of Medicine & Health Science
- Student Affairs Complex
- Research & Development Centre Building
- Premises for the Faculty of Design & Architecture
- Waterproofing the roof of UPM's Mosque

## Projects at Planning Stage

- Upgrading and installation of cable & electricity supply equipment for the campus
- Upgrading of the zoning system of the hostels
- Upgrading the main drainage system
- Upgrading the Pongamia & Tulang Daing Roads
- Upgrading the Silicon Valley and Information Roads
- Construction of a new road connecting South Zone



## PERPUSTAKAAN

Perpustakaan mengambil beberapa langkah yang perlu ke arah pewujudan Perpustakaan Elektronik. Langganan kepada pangkalan data dan jurnal dalam talian melalui Internet telah ditambah, dan kini meliputi "Dissertation Abstract", "Ebscohost on the World Wide Web", "Institute of Physics Electronic Journals", "Journals of the American Physiological Society", "LINK Information Service (Springer Online Journals)", "Oxford Journals", "Proquest Medical Library", "Sciences of Soils", dan "Wiley Journals Online". Kesemua pangkalan data dan jurnal elektronik tersebut boleh diakses terus melalui Laman Web Perpustakaan. Terdapat juga bahan rujukan elektronik yang boleh diakses secara percuma melalui Internet, seperti "Free Online Journals/Magazines/Newsletters" dan "Indexes and Abstracts" yang telah juga dihubungkan ke Laman Web Perpustakaan supaya boleh diakses seterusnya oleh para pengguna. Beberapa tapak web dan sumber maklumat, dalam dan luar negara telah dihubungkan dengan Laman Web Perpustakaan sebagai langkah meningkatkan akses kepada sumber maklumat elektronik bagi pengguna perpustakaan atau sesiapa sahaja yang melawat Laman Web Perpustakaan. Di samping itu, perpustakaan juga telah memulakan projek pendigitalan bahan, dengan penggunaan pendigitalan tesis sebagai projek perintis.

Satu lagi perpustakaan fakulti ditubuhkan pada bulan November, iaitu bagi Fakulti Perubatan Veterinar dan seorang Pustakawan ditugaskan mengurus koleksi dan perkhidmatannya.

### Perkembangan Koleksi

Koleksi buku dan jurnal berjilid berjumlah 375,487 naskhah, sementara koleksi bahan pandang dengar berjumlah 61,970 unit. Sebanyak 158 judul jurnal baru telah dilanggan, 348 dibatal dan 17,163 keluaran jurnal diterima dan direkod. Kebanyakan pembatalan jurnal adalah ekoran daripada langganan jurnal dalam talian tersebut di atas.

Perpustakaan Fakulti Perubatan dan Sains kini mempunyai sejumlah 8,091 naskhah buku, sementara Perpustakaan Fakulti Perubatan Veterinar bermula dengan sejumlah 1,640 naskhah buku.



## LIBRARY

The Library is progressing towards being an Electronic Library. On line subscription to databases and journals through Internet has increased recently and now includes *Dissertation Abstract Ebscohost on the World Wide Web*, *Institute of Physics Electronic Journals*, *Journal of the American Physiological Society*, *LINK Information Service (Springer Online Journals)*, *Oxford Journals*, *Proquest Medical Library*, *Science of Soils*, and *Wiley Journals Online*. All these database and electronics journals are accessible directly through the Library Website. Users can also have free access, through the internet, to various databases and electronic journals directly through the Library website such as the *Free Online Journals/Magazines/Newsletters* and *Indexes and Abstracts*. The Library Website is linked to various other foreign and local websites as a means of enhancing information retrieval electronically. The Library has also embarked on digitalising information with the thesis as the pilot project.

Another faculty library was established in November 1999 when the Faculty of Veterinary Medicine established its own library. A senior Librarian manages the collections and service.

### Growth in Collection

The journal and book collections total 375,487, while the AVA totals 61,970 units. The library subscribes to about 158 new journals and 17,163 journals currently while 348 journals have been discontinued. This is because these journals are now available on-line.

## Perkhidmatan Pinjaman

Pinjaman buku dan jurnal berjumlah 470,761. Sementara pinjaman pandang dengar berjumlah 136,588 yang melibatkan penggunaan 106,656 unit bahan dan 12,408 peralatan.

Keahlian perpustakaan sehingga November 1999 berjumlah 45,768, peningkatan 12% daripada 40,786. Bilangan pengguna yang mengunjungi perpustakaan berjumlah 989,666 orang.

## Pangkalan Data Elektronik

Pangkalan Data Dalaman yang diwujudkan dengan menggunakan perisian MINISIS berkembang maju dengan penambahan 8,700 rekod secara keseluruhannya. Sehingga November 1999, jumlah rekod bagi setiap pangkalan data adalah: AGRIMAL (20,752), MAKMAL (48,879), MUWIC (5,104), FAMILY (3,229), HOUSING (3,503), SMI (1,386). Kesemua pangkalan data dalaman tersebut kini boleh diakses melalui Internet dengan peningkatan MINISIS ke sistem klien/pelayar dan terhasilnya satu program antara muka web bagi MINISIS.

Selain daripada pangkalan data dalaman, akses kepada pangkalan data elektronik yang dilanggan juga berkembang dengan peningkatan dalam penggunaan CD-ROM (20,694) dan juga pangkalan data dalam talian tempatan, seperti NSTP Online, PALMOILIS dan SIRIMLINK.

## Program Pendidikan Pengguna

Program Orientasi Perpustakaan untuk para pelajar baru telah diadakan sebanyak dua kali bagi pelajar peringkat Ijazah, Diploma dan Matrikulasi, iaitu bagi Sesi Mei dan November, merangkumi 106 sesi ceramah dan tunjuk ajar. Orientasi perpustakaan bagi program pendidikan jarak jauh telah diadakan sebanyak dua belas sesi, sementara enam sesi diadakan untuk program pascasiswazah.

Program Pendidikan Penggunaan Berterusan juga mengadakan sebanyak 119 sesi dengan penyertaan hampir 2000 pelajar. Tujuan program ini ialah untuk memberi kemahiran pencarian maklumat dalam bentuk bercetak dan juga elektronik.

The Library at the Faculty of Medical Science has a collection of 8,091 books while the Library at the Faculty of Veterinary Medicine has 1,640 books.

## Loan Service

A total of 470,761 books and journals were on loan while for AVA, the figures were 106,656 units and 12,408 for equipment. Library memberships has increased by 12%, from 40,786 to 45,768 in 1999. Number of library visits was 989,666.

## Electronic Database

The Electronic Database has been established using the MINISIS software. This database has expanded to include 8,700 records. As of November 1999, the total number of records for each database is as follows: AGRIMAL (20,752), MAKMAL (48,879), MUWIC (5,104), FAMILY (3,229), HOUSING (3,503), SMI (1,386). All these database can be accessed by Upgraded Internet MINISIS to a client/user system resulting in a universal website programme for MINISIS.

Apart from the internal electronic database, other databases such as the CD-ROM (20,694) and local area network such as NSTP online, PALMOILIS and SIRIM LINK saw increased frequency in usage.

## User Education Programme

The Library's orientation programme is organised each year for the Diploma, Bachelor and Matriculation students for the May/November sessions; 106 such sessions were organised. A similar programme for IDEAL students (12 sessions) and postgraduate students (6 such sessions) was organised.

The yearly orientation programme was also organised for the regular students. This sessions totalled 119 for 2000 students. The aim of this programme is to equip users with search skills for both the print and electronic media.

A similar course for students from the franchised college of Perdana Education College was organised on 23 March 2000 and for students of the 2 + 1 twinning programme

Kursus Pengenalan Perpustakaan bagi para pelajar francas UPM dari Kolej Pendidikan Perdana telah diadakan pada 22 Mac, sementara bagi pelajar program 2+1 dari sembilan institusi diadakan pada 5 dan 6 April. Institusi-institusi terlibat terdiri daripada Institut Teknologi Cybernetics, International City Institute of Technology, Kolej IKRAM, Kolej Pendidikan Perdana, Kolej Prime, Kolej SAL, Kolej UNITEK Malaysia, Kolej Yayasan Melaka dan Pusat Teknologi dan Pengurusan Lanjutan.

of nine colleges, it was held from 5-6 April 2000. The institutes involved in this programme were Cybernetics Technology Institute, International City Institute of Technology, IKRAM College, Perdana Education College, Prime College, College SAL, UNITEK College, Malacca Foundation College, Technology and Continual Management Centre.

## **PUSAT PEMBANGUNAN PERNIAGAAN UNIVERSITI (UBC)**

## **UNIVERSITY BUSINESS DEVELOPMENT CENTRE (UBC)**

### **Unit Pembangunan Perniagaan**

### **Business Development Unit**

Unit ini berfungsi untuk mengenal pasti peluang-peluang perniagaan untuk universiti, menyediakan pelan perniagaan untuk mengkomersilkan projek-projek dan mempromosikan peluang perniagaan daripada kumpulan yang dikenal pasti. Antara aktiviti yang telah dijalankan oleh unit ini ialah:

The function of this Unit is to identify business opportunities for the University, prepare business plans to commercialise projects and promote business opportunities. The activities carried out by this unit were:

#### **Pembinaan Asrama Pelajar di Kampus UPM**

Sepanjang tahun 1999, UBC telah membantu Bahagian Pembangunan UPM menyelia pembinaan asrama Fasa Pertama yang dijalankan oleh Syarikat Strategic Crest Sdn. Bhd. Pembinaan asrama pelajar Fasa Kedua pula masih dibekukan memandangkan keperluan asrama perlu dikaji semula selaras dengan kedatangan ASEAN Games yang akan berlangsung pada 2006.

#### **Construction of a Students Hostel in UPM campus**

In 1999, UBC assisted the Development Division of UPM in supervising the construction of Phase I of the hostel by Strategics Crest Co. Ltd. The construction of Phase II of the hostel blocks has been suspended following a review of the actual need for accommodation in view of the ASEAN Games in 2006.

#### **Katering Makanan (Food Catering Services)**

Aktiviti katering makanan ini mula dijalankan pada tahun 1997 oleh syarikat Desasiswa Catering Services Sdn. Bhd., iaitu sebuah syarikat usaha sama UPM dengan Syarikat Dewina Food Services Sdn. Bhd. (DFS), dan masih berterusan sehingga kini. Bagi aktiviti ini, UBC juga membantu Bahagian Pembangunan UPM menyelia aktiviti ini.

#### **Food Catering Services**

Desasiswa Catering Services Ltd. began its catering service in 1999. This is a joint-venture company between UPM and Dewina Food Services Co. Ltd. (DES). UBC has been involved in this business venture.

#### **Cenderamata berasaskan logo UPM**

Pihak UBC telah berbincang dengan syarikat-syarikat yang berminat untuk menjalankan aktiviti francais logo UPM. Syarikat yang berminat akan dilantik untuk memasarkan barangan yang mempunyai logo UPM. Pihak UPM akan

#### **Souvenirs Portraying UPM Logo**

UBC has been negotiating with interested companies to franchise the use of our logo in marketable products for which the University would be paid a royalty. There have been no takers for this project.

mendapat royalti daripada setiap barangan yang dijual oleh syarikat tersebut. Walau bagaimanapun, setakat ini belum ada syarikat yang dilantik untuk menjalankan aktiviti ini.

### Ladang Hidroponik di Genting Highland

UBC juga merupakan wakil bagi UPM dalam segala rundingan yang berkaitan projek hidroponik Genting Highland. Dalam hal ini, UPM telah bersetuju untuk menyambung semula kerjasama dengan pihak Monoluxury Sdn. Bhd., selama lima tahun, bermula 1 April 1999, tertakluk kepada perkara berikut:

- Universiti mendapat royalti sebanyak 7.5% daripada jualan kasar tiap-tiap tahun.
- Pihak Monoluxury akan membaik pulih keseluruhan kawasan tersebut termasuk bangunan dan juga tanah runtuh berdepan kedua-dua banglo.
- Royalti tahun pertama adalah 3% dan mulai tahun kedua 7.5%. Ini sebagai menimbang kos untuk membaik pulih di atas.

Pihak Monoluxury telah bersetuju dengan syarat-syarat tersebut. Bagaimanapun pihak Monoluxury memohon untuk memanjangkan tempoh perjanjian daripada lima tahun kepada tujuh tahun memandangkan kerja-kerja membaik pulih bangunan memakan kos yang tinggi iaitu lebih kurang RM200,000 termasuk kos penyelenggaraan untuk sepanjang tempoh perjanjian.

### Aktiviti-aktiviti Lain

- Penyewaan ruang perniagaan kepada syarikat, organisasi atau orang perseorangan yang berminat untuk menjalankan perniagaan di UPM. Kadar sewa adalah berdasarkan jumlah jam sesuatu ruang tersebut digunakan.
- Unit Pembangunan Perniagaan juga mengendalikan hal-hal yang berkaitan dengan penggambaran iklan dan filem di kawasan UPM. Kadar yang dikenakan juga bergantung kepada jumlah jam sesebuah syarikat menggunakan tempat penggambaran tersebut.

### Hydroponic Project at Genting Highlands

UBC is also UPM's representative in all negotiations regarding the Genting Highlands Hydroponic project. UPM has agreed to renew its collaborations with Monoluxury Sdn. Bhd for 5 years, beginning 1 April, 1999, based on the following conditions :

- The University is given a 7.5% royalty on all estimated annual sales per annum.
- Monoluxury would undertake the upgrading and repair of the entire area including areas affected by landslides.
- To defray the cost of the RM200,000 renovation, the initial royalty would be 3%. This would be increased to 7.5% subsequently.

Monoluxury Co. Ltd. has principally agreed to the above conditions. However, Monoluxury has requested that the period be extended from 5 to 7 years in view of the high cost of upgrading and repair, which amounts to about RM200,000 including maintenance throughout the period of agreement.

### Other activities

- Renting of business premises to individuals, companies or organisations which are interested in undertaking businesses. Rentals are based on the number of hours a particular premise is occupied.
- UBC is also involved in negotiating rates for advertisement placing in the Campus. The rates would be calculated on an hourly basis.

## Unit Komersilisasi Teknologi

Sepanjang tahun 1999, Unit Komersilisasi Teknologi telah menjalankan dua aktiviti utama iaitu:

### Pengkomersilan Hasil Penyelidikan UPM

Unit ini telah membantu penyelidik mengenal pasti individu dan syarikat yang berminat untuk mengkomersilkan hasil penyelidikan UPM. Antara produk penyelidikan tersebut adalah seperti di Jadual 30.

### Pameran

Unit juga telah bekerjasama dengan Unit Penyelidikan UPM dalam menjalankan pameran ITEX 99 pada 23-26 September 1999 di The Mines, Seri Kembangan.

## Commercialisation of Technology Unit

In 1999, this Unit carried out two important activities:

### Commercialisation Research Products of UPM

The Unit assisted in identifying individuals or companies interested in commercialising research products of UPM. The products which are to be considered are shown in Table 30.

### Exhibition

With the cooperation of the Research Unit of UPM, the Unit jointly organised the ITEX 99 Exhibition from 23-26 September at The Mines, Seri Kembangan.

JADUAL/TABLE 30

### SENARAI PRODUK DALAM PROSES RUNDINGAN DENGAN SYARIKAT LUAR LIST OF PRODUCTS UNDER NEGOTIATION WITH COMPANIES

Bil. No.	Nama Projek Name of Project	Rakan Industri Industrial Partner	Penyelidik Researcher	Status Status
1	Biofilter technology	Management Technology Specialist	Dr. Azni Idris	CRDF-MTDC application submitted
2	Carotene production	Zarina Holdings Sdn. Bhd.	En. Badlishah Sham	Zarina Holdings Sdn. Bhd. and Bank Industri Malaysia
3	Drier	BERNAS	Nordin Ibrahim	Awaiting response
4	Ganoderma for nutraceuticals	Srikinsama Sdn. Bhd.	Dr. Tong Chow Chin	Awaiting response
5	Gelatin manufacture	Geltech Pharmaceutical Sdn. Bhd.	Prof. Dr. Suhaila Mohamed Dr. Md. Nordin Ibrahim Dr. Azni Idris	Draft agreement submitted to Management Board UBC, CRD Fund obtained through MTDC
6	Processing citruc fruits (kalamanzi)	Transtherm Engineers	Prof. Dr. Suhaila Mohamed	Awaiting response for CRD Fund from MITI/MTDC
7	Production of protein hydrolsate	Transtherm Engineers	Prof. Dr. Suhaila Mohamed	Awaiting response for CRD Fund from MITI/MTDC
8	Orchid production and ecotourism		Dr. Saleh Kadzimin	Awaiting approval from Management Committee, UPM
9	Research on producing 'Nata de Pine'	Malaysian Pineapple Industry Board	Dr. Zaiton Hassan Darit	Draft agreement submitted to Lembaga Nenas Malaysia
10	Pneumatic palm oil and frond cutting device	AIM Sdn. Bhd.	Dr. Salleh Jaafar	Equipment under commercial testing
11	Production of bloodworm as fishmeal from wastewater	Priority Technology Venture S.B. (Ptv)	Assoc. Prof. Dr. Fatimah Yusof	Awaiting project proposal
12	Production of haruan for nutraceutical and cosmetic products	Perusahaan Orang Kampung Sdn. Bhd.	Dr. Abdul Manan Mat Jais	Drafting of MOA
13	Production of shitake mushroom	Srikinsama Sdn. Bhd.	Dr. Tan Yee How	Awaiting response
14	Production of soft and hard ferrite	SAPURA/APM Auto Electronic	Dr. Salleh Hanum Mansur	Renegotiating with SAPURA
15	R&D on a health drink from rice	Kalpna Industry Sdn. Bhd. Kalpna Industry Sdn. Bhd.	Dr. Mohd Yazid Abd. Manap	
16	Pseudorabies vaccine		Dr. Mohd Azmi Mohd Lila	MTDC-CRDF application submitted
17	Tissue culture commercialisation	FITOTECH	Prof. Marziah Mahmood & Co-researcher	Formation of a company approved by Management Committee UPM
18	White spot virus detectin kit for shrimps	ACLRM	Mohamed Shariff bin Mohamed Din	Draft MOA

## Unit Perundingan

Unit perundingan berperanan menyelaras segala aktiviti perundingan yang dijalankan di UPM. Di samping mengenal pasti peluang perundingan, unit ini juga dapat menentangakan kepakaran pegawai akademik UPM bagi membolehkan mereka mempraktikkan ilmu yang dimiliki.

Peranan Unit ialah:

- Badan penghubung antara agensi luar dengan UPM termasuk menerima dan menjawab semua pertanyaan dari agensi luar mengenai perkhidmatan perundingan UPM.
- Mengenal pasti dan mendapatkan projek perundingan yang baru sama ada melalui tender, promosi atau kontak peribadi dengan agensi.
- Mengatur pertemuan antara perunding UPM dengan agensi luar dan seterusnya melantik perunding mengikut bidang kepakaran masing-masing.
- Mengambil bahagian dalam sebarang rundingan mengenai projek bagi memastikan hak-hak perunding terpelihara.
- Membuat pengesanan berterusan mengenai kemajuan sesebuah projek dan mengambil tindakan segera sekiranya berlaku kegagalan projek bagi menjaga imej UPM.
- Membantu perunding menyediakan pengiraan kos projek perundingan bagi memastikan perunding mendapat bayaran yang setimpal dengan kerja yang dilakukan.
- Menguruskan dan menyediakan dokumen perjanjian projek, bagi memastikan kepentingan agensi dan perunding serta UPM terpelihara.
- Mengurus akaun dan segala urusan kewangan projek termasuk membuat tuntutan kepada agensi berkenaan, membuat pembayaran dan lain-lain yang berkaitan.

Sepanjang tahun 1999, Unit Perundingan telah berjaya menyelaraskan 28 projek perundingan yang masih aktif dijalankan (Jadual 31).

## Unit Latihan

Buat masa ini segala aktiviti latihan yang dikendalikan oleh unit ini ditangguhkan buat sementara waktu sehingga UPM mengeluarkan statut baru berkaitan dengan pengendalian aktiviti latihan di UPM.

## Consultation Unit

This unit coordinates all consultancy activities of UPM. In identifying consultancy opportunities, it provides an opportunity for academic staff to promote their specialization. The Unit's role is:

- To act as an intermediary body for consultancy activities between UPM and external bodies and to serve as a one-stop centre for all questions relating to consultancy.
- To identify and seek new consultancy projects either through tender, promotional activities or through personal contacts.
- To arrange meetings with other agencies and to identify specialists for each consultancy project.
- To take part in negotiations so as to ensure the interests of UPM are protected.
- To monitor progress of projects and to take remedial action to safeguard the image of UPM.
- Provide assistance in costing a project to ensure commensurate services for consultancy services.
- To supervise and prepare project agreements to protect the interests of both parties.
- To monitor accounts and financial aspects of projects including claims and payments.

For the year 1999, the Consultation Unit undertook 28 projects which are shown in Table 31.

## Training Unit

All activities under this Unit have been suspended while a new statute on training is introduced.

**TAJUK PROJEK PERUNDINGAN YANG DISELARASKAN OLEH UBC**  
**CONSULTANCY PROJECTS COORDINATED BY UBC**

Bil No.	Tajuk Projek Project Title	Bidang Area
1.	<b>Peningkatan Sistem Keutamaan dan Dapat Kembali Pengkalan Data Kemalangan di Bawah Rancangan Malaysia ke -7</b> Upgrading of Prime System and Accident Database Retrieval under TMK7	Kejuruteraan Engineering
2.	<b>Program Memperelokkan Kawasan Bahaya</b> Securing Danger Zone Programme	Kejuruteraan Engineering
3.	<b>Kajian Keselamatan Motorsikal</b> Motorcycle Safety Study	Kejuruteraan Engineering
4.	<b>Rancangan Pengurusan Hutan Kayu Bakau</b> Forest Management Plan for Mangrove Forest	Perhutanan Forestry
5.	<b>Pelan Pengurusan Hutan</b> Forest Management Plan	Perhutanan Forestry
6.	<b>Kajian Pelancongan Head Hunter's Trail Sarawak</b> Tourism Study on Head Hunter's Trail in Sarawak	Perhutanan Forestry
7.	<b>Kajian Ecopelancongan di Rezab Hidupan Liar, Sungkai</b> Ecotourism Study at Wildlife Reserve, Sungkai	Perhutanan Forestry
8.	<b>Projek Contoh untuk Menganalisis Kos bagi Mempertingkatkan Pengurusan Hutan</b> A Model Project for Cost Analysis to Achieve Sustainable Forest Management	Perhutanan Forestry
9.	<b>Pembangunan Talian kerja di Malaysia</b> Teleworking Development in Malaysia	Sosial Social
10.	<b>Penyelidikan Rumah Kos Rendah</b> Low Cost Housing Research	Kejuruteraan Engineering
11.	<b>Projek Taman Bunga Gunung Jerai</b> Flower Park Project at Gunung Jerai	Landskap Landscape
12.	<b>Projek Taman Agro-Perhutanan Baling, Kedah</b> Forest Agro-Park Project Baling, Kedah	Landskap Landscape
13.	<b>Pelan Strategik Negeri Kelantan</b> Strategic Plan in Kelantan State	Semua All
14.	<b>Kajian Pemasaran Makanan yang telah Diproses</b> Marketing Study on Processed Food	Pemasaran Marketing
15.	<b>Projek Penubuhan dan Penilaian Tapak Sampah Pelupusan W. Persekutuan</b> Construction and Evaluation of Dumping Site Project for Federal Territory	EIA EIA
16.	<b>Tanda Nama dan Pengenalan Pokok Universiti Petronas</b> Tree Tagging and Tree Identification for University of Petronas	Perhutanan Forestry
17.	<b>Rawatan Sisa Kumbahan</b> Sewage Treatment	Kejuruteraan Engineering
18.	<b>Kajian Pemasaran Produk Besta</b> Marketing of Besta Product Study	Pemasaran Marketing
19.	<b>Projek Landskap untuk Kompleks Sukan Bukit Jalil</b> Landscape Project for Sports Complex, Bukit Jalil	Landskap Landscape
20.	<b>EIA Cyber Jaya</b> EIA Cyber Jaya	EIA EIA
21.	<b>EIA-Cable Car System, Penang</b> EIA-Cable Car System, Penang	EIA EIA
22.	<b>Kajian Keberkesanan Program Membangunkan Usahawan Bumiputera Berdaya Maju, Berdaya Saing dan Berdaya Tahan</b> Feasibility Study on the Development Programme for Bumiputera Businessmen (Development, Competition & Sustainability)	Perniagaan Marketing
23.	<b>Kajian Ekopelancongan dan Menyediakan Pelan Pengurusan Taman Negara Pahang</b> Ecotourism Study and Preparation of Management Plan for National Park, Pahang	Perhutanan Forestry
24.	<b>Kerjasama Teknikal</b> Technical Collaboration	Pertanian Agriculture
25.	<b>Penyediaan Pelan Konsep Taman Liar Negeri, Lembah Jemploi</b> Preparation of a Concept Plan for State Wildlife, Jemploi Valley	Perhutanan Forestry
26.	<b>Pembiakbakaan dan Pengeluaran Biji Benih Kelapa Sawit</b> Improvement & Production of Palm Oil Seedlings	Pertanian Agriculture
27.	<b>Penilai Luar</b> External Reviewer	EIA EIA
28.	<b>Projek Perancangan Bandar dan Desa</b> Town & Village Planning Project	Ekonomi Economics

## TAMAN PENYELIDIKAN UNIVERSITI (URP)

### Wawasan, Misi dan Objektif

Taman Penyelidikan Universiti (URP) mempunyai visi untuk membantu UPM menjadi pusat pembangunan dan pengkomersilan teknologi dalam bidang biosains dan teknologi maklumat yang unggul di Asia Tenggara.

Sebagai misinya, URP beriltizam untuk menjadi pusat pembangunan dan pengkomersilan teknologi bidang biosains dan teknologi maklumat yang unggul bagi mencapai aspirasi universiti dan negara.

Dalam menjayakan misinya menerusi aktiviti-aktiviti yang dilaksanakan, URP telah menggariskan matlamat utamanya untuk:

- Membantu UPM menjadi pusat pembangunan dan pengkomersilan teknologi yang unggul terutama dalam bidang biosains dan teknologi maklumat.
- Menggalakkan proses pemindahan teknologi.
- Memberi sokongan dan perkhidmatan dalam aktiviti penyelidikan dan pembangunan (R & D) serta pembelajaran.
- Mewujudkan suasana kondusif untuk membina komuniti yang berpengetahuan dan inovatif.

### Bahagian Pembangunan Teknologi

Bahagian ini bertanggungjawab untuk (i) membantu dan menggalakkan pembangunan teknologi di tapak URP, terutama dalam bidang biosains dan teknologi maklumat; (ii) menjalinkan usaha sama antara fakulti di UPM dengan agensi atau syarikat luar untuk membangunkan teknologi terkini dalam bidang biosains dan teknologi maklumat; (iii) menggalakkan proses pemindahan teknologi dan (iv) menyelaraskan kemajuan pembangunan teknologi bagi penyewa-penyewa dan penghuni URP.

Bahagian ini bertanggungjawab juga untuk penyelarasan dan pemantauan aktiviti Pusat Inkubasi Teknologi yang menyediakan prasarana asas kepada syarikat-syarikat swasta untuk berkembang. Caranya ialah dengan memperbaiki produk secara berterusan di samping mendapatkan produk baru. Dua pusat inkubasi yang telah menjalinkan kerjasama dengan UPM ialah:

## UNIVERSITY RESEARCH PARK (URP)

### Vision, Mission and Objectives

The Vision of URP is to assist UPM become a leading centre for the development and commercialisation of Technology in bioscience and information technology in Southeast Asia. URP is determined that it develops into such a renown centre inline with the aspirations of UPM and of the nation.

In order to realise its mission, URP has drawn up the following guidelines:

- To assist UPM to be the leading centre for the development and commercialisation of technology in Bioscience and Information Technology
- To encourage technology transfer processes
- To assist in R&D activities
- To provide a conducive environment for the development of a knowledgeable and innovative society

### Technology Development Division

This Division is responsible for (i) assisting and encouraging the development of technology, especially in the fields of Bioscience and IT; (ii) establishing a network for collaborative work between Faculties and external agencies so as to develop cutting-edge technologies in Bioscience and IT; (iii) encouraging technology transfer process; and (iv) coordinating technology development for the occupants and tenants of URP.

This Division is mainly responsible for the coordination and consolidation of the activities of the Technology Incubation Centre whose role is to prepare guidelines for private companies to develop by improving their products. Two incubation centres which have established linkages with UPM are:

#### UPM-MTDC Technology Incubation Centre I

At this incubation centre, space and facilities for development of technology in IT are available for rental/ use by private companies and university researchers. To date there are 32 private companies renting space.

### UPM-MTDC Technology Incubation Centre One

Di pusat inkubasi ini, ruang dan kemudahan untuk pembangunan teknologi dalam bidang IT disediakan untuk disewa/digunakan oleh syarikat swasta dan penyelidik-penyelidik universiti. Setakat ini terdapat 32 syarikat swasta yang menyewa/menduduki ruang yang disediakan.

### Putra Infoport

Pusat inkubasi yang dibangunkan dengan kerjasama antara UPM dengan Canary Infoport Sdn. Bhd ini dibina untuk menyediakan kemudahan sewaan kepada syarikat-syarikat yang melibatkan diri dalam IT. Sehingga kini, terdapat lapan syarikat yang menyewa tempat di pusat ini

Senarai syarikat penyewa di kedua-dua pusat inkubasi tersebut adalah seperti di Jadual 32.

Terdapat enam syarikat di Pusat Inkubator UPM-MTDC dan tiga syarikat di Pusat Infoport yang menggunakan kepakaran UPM.

Putra Infoport menyelaras dan memantau aktiviti syarikat Malaysia Agri-Hitech (MAH), syarikat yang mengeluarkan baja organik dengan teknologi menggunakan mikorhiza yang dihasilkan oleh salah seorang saintis di UPM. Kawasan yang digunakan oleh syarikat ini adalah bengkel dan tanah seluas enam ekar di Ladang Puchong.

Satu sesi dialog antara sekumpulan pensyarah dari Fakulti Sains Komputer dan Teknologi Maklumat dengan pihak MTDC dan penyewa-penyewa telah di ada di kompleks ini. Tujuannya adalah untuk membuka ruang kerjasama antara pihak fakulti dengan pusat inkubasi tersebut agar rancangan kerjasama akan datang dapat dimulakan.

### Bahagian Sokongan Penyelidikan dan Operasi

Bahagian ini bertanggungjawab menyelaraskan aktiviti-aktiviti penyelidikan dalam latihan kerja ladang yang dijalankan oleh pensyarah dan pelajar UPM serta pihak luar. Bahagian ini juga bertanggungjawab menjalankan aktiviti penyelarasan dan pengeluaran bahan tanaman dan ternakan dari kawasan yang sedia ada dalam membantu menjana kewangan untuk URP.

### Putra Infoport

A collaborative effort between UPM and Canary Infoport Co. Ltd., this Infoport was developed to provide facilities for rental to companies involved in IT. To date, there are 8 companies renting space.

There are eight companies at the UPM-MTDC Incubator Centre and three companies at Infoport Centre using UPM's specialist services. The companies renting space in both these Incubation Centres are as shown in Table 32.

This division coordinates and monitors the activities of a company, Malaysian Agri Hitech, which produces organic fertilizers using micorrhiza technology (a UPM scientist initiative). This company has been allocated 6 acres of land at Puchong Estate.

A dialogue session between a group of lecturers from the Faculty of Computer Science and IT with MTDC and other companies at the complex was organised with the aim of initiating future collaborative work between the Faculty and companies at the incubation centres.

### Research and Operations Support Division

This Division is responsible for the coordination of research activities for field training conducted by lecturers and students of UPM and external agencies. This Division is also responsible for coordinating activities related to horticulture and animal husbandry so as to generate income for URP.

The main activities of the Division are as follows:

- To prepare and equip the area for 15 research projects for lecturers and students
- To prepare and equip the area for 6 practical work sessions for students in various fields of specialisation
- To maintain fields so as to ensure produce from the oil palm, rubber and coconut estates, budgrafting unit, nursery and herbarium
- To maintain and ensure produce from Puchong Estate, fruit orchards and fish ponds
- To maintain and supervise dairy farming (500 heads) and deer farming (150 heads)

**SENARAI PENYEWA DI UPM-MTDC**  
**LIST OF COMPANIES RENTING SPACE AT UPM-MTDC**

Senarai Penyewa List of Companies	Bidang IT IT Field
1. Malaysia Agri Hi-Tech	Consultancy, biological analysis of soil. Agri-related professional service and assistance.
2. Gric Communications Sdn. Bhd.	Clearing house for internet telecommunications. Services also routing, authentication, network management, billing and settlement services.
3. MTDC Technology Media Sdn. Bhd.	Produce multimedia products and services and training of multimedia experts.
4. Alam Teknokrat Sdn. Bhd.	Operates and manages alta vista search mirror for Asian Region. Leading Asia wide content organiser.
5. Percetakan National Malaysia Bhd. (Lawynet)	One-stop reference center providing on-line facilities and links to various sites for practitioners and legal academicians.
6. MTDC Technology Media Sdn. Bhd.	Produce various multimedia products and services and training of multimedia experts.
7. Malaysia Bio-Diagnostics Research Sdn. Bhd.	Commercialising Malaysian R&D, manufactures and distributing a range of international bio-diagnostic products and provides world class medical diagnostic services.
8. Cyber Creative Lab, UPM	R@D one- stop centre and Multimedia arm for UPM.
9. Inter -Network Multimedia Solutions Sdn. Bhd.	Multimedia including designing, distributing and implementing tightly integrated end-to-end computer networking solutions and graphics.
10. Alyatech Integrated Solutions Sdn. Bhd.	A systems integrated company for successful implementation and usage of computer systems for the satisfaction of end-users.
11. MTDC Technology Media Academy	Main campus for students of Multimedia Academy.
12. FJ Technology Sdn. Bhd.	Systems integration business in the core areas of electronic government systems, multipurpose smart card, cyber development and health industry applications including telemedicine.
13. Viablenet Solution (M) Sdn. Bhd.	Development and implementation of internet online services for the Malaysian market and provide value added services.
14. Hijau Inovasi Sdn. Bhd.	Website development, Multimedia value added services. Multimedia Hub Franchise network is a franchised business concept.
15. Telekom Malaysia Bhd.	Telekom R & D currently researching and developing new applications for multimedia fibre optics, computer networking, switching technology, operational research, advanced intelligent network, radio technology and control automation.

Antara aktiviti utama yang telah dijalankan ialah:

- Penyediaan kawasan dan kelengkapan asas untuk 15 projek penyelidikan pensyarah dan pelajar
- Penyediaan kawasan dan kelengkapan asas enam sesi latihan amali pelajar dalam pelbagai bidang dan pengkhususan.
- To initiate the cultivation of short-term crops such as maize (1 hectare), tapioca (2 hectares), sugarcane (2 hectares), water lily flower (0.5 hectare) and serai (1.5 hectares).
- To initiate a project for the sale of catfish fry on an experimental basis

- Penyelenggaraan dan pengeluaran hasil tanaman dari kawasan yang sedia ada di kampus Serdang, termasuk kawasan ladang dan mata tunas buah-buahan, kawasan kelapa sawit, kelapa dan getah, tapak semaian buah-buahan, dan kawasan ulaman.
- Penyelenggaraan dan pengeluaran hasil dari Ladang Puchong, termasuk kawasan buah-buahan dan kolam ikan.
- Penyelenggaraan dan pengeluaran hasil ternakan, termasuk ternakan lembu pedaging dan tenusu (500 ekor) dan ternakan rusa (150 ekor)
- Pengeluaran hasil tanaman jangka pendek, termasuk jagung (1 hektar), ubi kayu (2 hektar), tebu (2 hektar) bunga kantan (0.5 hektar) dan serai (1.5 hektar)
- Pelaksanaan projek pengeluaran benih ikan keli untuk jualan secara percubaan.

## Bahagian Pembangunan Komersil

Tanggungjawab utama bahagian ini ialah mendapatkan serta menilai projek-projek yang boleh menjana kewangan kepada URP melalui penyewaan aset-aset mudah alih dan tidak mudah alih. Di samping itu, untuk mengenal pasti projek-projek dalam bidang biosains dan teknologi maklumat yang boleh dijalankan untuk menjana kewangan, menilai kertas cadangan, serta daya maju sesuatu projek komersil yang akan dijalankan, menyediakan dokumen spesifikasi dan syarat-syarat perjanjian dan memantau kemajuan projek-projek komersil yang dijalankan oleh semua bahagian di URP.

Antara aktiviti utama yang telah dijalankan oleh bahagian ini ialah:

- Penilaian kertas cadangan yang dikemukakan oleh tujuh syarikat agroteknologi yang berminat untuk menyewa kawasan-kawasan di UPM, bagi melaksanakan pelbagai aktiviti komersil termasuk projek ternakan, pertanian bersepadu, penanaman rumput turf dan semaian tanaman landskap.
- Penyediaan dan pemantauan dokumen-dokumen perjanjian antara URP dengan pihak luar, melalui kerjasama dan bantuan dari Bahagian Perundangan UPM. Antaranya ialah:
  - Menilai semula Perjanjian Penyewaan dengan Malaysia Agriculture Hi-Tech Sdn. Bhd. dan Putra Infoport.

## Commercial Development Division

This Division is responsible for (i) identifying and evaluating income generating projects for URP through rental of movable and immovable assets; (ii) identifying projects in bioscience and technology areas; (iii) preparation of feasibility papers on commercial ventures; (iv) preparing documents on specifications and agreements; (v) and evaluating progress of the various commercial projects carried out by URP.

The following were some of the main activities carried out by the Division:

- Evaluation of proposal submitted by 7 agrotechnology companies which were interested in renting space in UPM for animal husbandry, integrated agriculture, turf grass growing and nursery for landscaping.
- Preparation and evaluation of the following agreements between external agencies with the assistance of the Legal Division of UPM:
  - Rental Agreement between Malaysia Agriculture Hi-Tech Sdn. Bhd. and Putra Infoport
  - MOU between UPM and UPM-MTDC
  - Agreement between UPM and Tan & Kumpulan Sdn. Bhd. for rental of fish-pond and between UPM and Schuttler Far East Sdn. Bhd. for turf growing
- Preparation of tender specifications for rental or leasing of space
  - Tender specifications for rental of space for oil palm and poultry farming
  - Tender specifications for rental of dairy and durian orchard leases
- Promotion of the functions and activities of UPM to the campus community and external agencies through:
  - Road shows to all faculties & cost centres in stages
  - Taking on a exhibition stall at the 1999 Convocation Fest 1999

- Membantu dalam penyediaan Memorandum Persefahaman antara UPM dengan UPM-MTDC.
- Menyediakan dokumen perjanjian antara pihak UPM dengan Tan & Kumpulan Sdn. Bhd. bagi penyewaan kawasan kolam ikan serta Schuttler Far East Sdn. Bhd. bagi penanaman rumput turf.
- Penyediaan tender dan spesifikasi bagi penyewaan dan/atau pemajakan kawasan serta penghasilan berikut:
  - Tender dan spesifikasi kawasan kelapa sawit dan penternakan ayam
  - Spesifikasi untuk tender unit tenusu dan pemajakan kawasan durian.
- Promosi untuk memperkenalkan URP. Fungsi serta aktiviti kepada masyarakat kampus dan luar kampus melalui:
  - Road Show ke semua Fakulti dan PTJ di UPM secara berperingkat.
  - Gerai Pameran sewaktu Pesta Konvokesyen UPM 1999.

## Bahagian Perkhidmatan

Bahagian ini bertanggungjawab menawarkan pelbagai perkhidmatan dan kemudahan kepada masyarakat kampus dan orang ramai, terutama dalam bidang penyelidikan dan aktiviti kokurikulum.

Aktiviti yang dijalankan adalah mengikut kategori berikut:

### Perkhidmatan Am

URP masih meneruskan aktiviti perkhidmatan am dalam menyewakan jentera/kenderaan. Kebanyakan penyewaan ini adalah bagi memenuhi keperluan pelajar atau kakitangan dalam penyelidikan, aktiviti kokurikulum, pendidikan dan penyelenggaraan kawasan.

### Kemudahan Bukit Expo

Kemudahan yang terdapat di Bukit Expo telah digunakan oleh pelbagai pihak di dalam dan di luar universiti, terutamanya oleh pelajar-pelajar UPM.

### Kemudahan Kolam Ikan

Di sepanjang tahun, kolam-kolam ikan di URP telah digunakan untuk pelbagai bentuk aktiviti, seperti latihan amali, penyelidikan, rekreasi dan sukan memancing. Lapan pertandingan memancing telah dijalankan.

## Service Division

This Division is responsible for promoting various facilities and services of URP to the campus community, particularly in research and co-curriculum.

Among the activities conducted by the Division were:

### General Service

Renting of machinery and vehicles to students or staff carrying out research and co-curricular and educational activities. General maintenance of the farm area is also the responsibility of this Division.

### Expo Hill Facilities

These facilities are used by various parties both within and without, as well as the students of UPM.

### Fish Pond Facilities

In 1999, URP's fish-ponds were used for practical training, recreation, research and fishing competitions. Eight fishing competitions have been held lately.

### Advertisement Facilities

URP supervised 11 filming activities carried out by an external agency that wanted to capture the scenic surroundings of UPM.

## Training & Advisory Services Division

This Division is responsible for organising training programmes, courses and advisory services for external agencies to generate income for URP as well as staff development. The Division organised (i) four courses/practical training sessions for the public and UPM students and (ii) three staff development courses/lectures.



## Kemudahan Pengiklanan

URP telah menyelaraskan kemudahan untuk 11 sesi penggambaran yang dijalankan oleh syarikat luar yang menggunakan kawasan-kawasan menarik di URP.

## Bahagian Latihan dan Khidmat Nasihat

Bahagian ini bertanggungjawab dalam menganjurkan program latihan, kursus dan khidmat nasihat untuk pihak luar bertujuan menjana kewangan untuk URP, dan juga ceramah dan kursus-kursus bagi tujuan pembangunan staf URP.

Antara aktiviti yang telah dijalankan ialah:

- Empat kursus/latihan praktik untuk pihak luar dan pelajar UPM.
- Tiga kursus/ceramah untuk pembangunan staf URP.

## Kemajuan Prestasi

- Oleh kerana URP perlu menjana kewangan sendiri untuk menampung pelaksanaan aktiviti, hanya 40% daripada aktiviti tertumpu kepada penyelidikan dan pembangunan teknologi, selebihnya dari hasil ternakan, tanaman dan aktiviti perkhidmatan yang lain.
- Pembangunan teknologi melalui Pusat Inkubator telah bertambah dengan pesat berbanding tahun sebelumnya.
- URP juga berjaya menguruskan pemindahan teknologi antara UPM dan dimana penyertaan pensyarah dalam aktiviti pusat inkubator telah bertambah.
- URP juga telah berjaya menarik penyelidik-penyelidik dari dalam dan luar UPM untuk menjalankan penyelidikan di UPM.
- Aktiviti pembangunan kormersil masih belum dapat dijalankan sepenuhnya walaupun banyak perbincangan telah diadakan dengan pihak luar. Masalah utama ialah pelan induk belum diluluskan oleh Universiti, syarat-syarat penyewaan yang tidak sesuai dengan kehendak syarikat yang berminat serta proses permohonan yang mengambil masa yang terlalu lama di peringkat universiti, membuatkan syarikat akhirnya menarik diri.
- URP juga telah berjaya memantau prestasi dan perkembangan projek serta melaporkannya kepada Pengurusan UPM.

## Performance Appraisal

- As URP is expected to generate its own income to carry out activities, only 40% of its activities were directed at research and technology development while the major part of its efforts were towards animal husbandry, horticulture and other service activities.
- In 1999, there was increased technology development through the Incubator Centre.
- URP was successful in transferring technology as indicated by increased participation of lecturers in the activities of the Incubator Centre.
- URP has been successful in drawing researchers to UPM
- Commercial development of products has not taken off as yet as negotiations are still underway with the parties concerned. Meanwhile as the master plan has not been approved, the delay in processing applications has led to the withdrawal of several companies. Several companies have also complained of URP's rental/lease rates.
- URP has also succeeded in monitoring project development and performance and has reported it to the UPM management.

## INSTITUT MULTIMEDIA

Institut Multimedia (IMM) diwujudkan melalui penggabungan Makmal Siber Kreatif dan Pusat Reka Bentuk Pengajaran-Pembelajaran pada Januari 1999. Institut ini dikendalikan oleh 20 kakitangan pelbagai kemahiran dan pengetahuan dalam bidang sains komputer, kejuruteraan elektronik, fizik, pertanian, bioteknologi, pembangunan manusia dan ekonomi. Institut ini beroperasi sebagai pusat tanggungjawab biaya diri sepenuhnya bagi menampung keseluruhan kegiatan yang dikendalikannya. Peringkat awalnya, Institut Multimedia diberikan pinjaman modal sebanyak RM1 juta bagi melaksanakan kegiatannya.

### Tujuan, Misi dan Objektif

Institut ini ditubuhkan untuk mengkoordinasi, melaksana, melatih dan merangkaikan sumber-sumber di universiti ini bagi pembangunan kandungan multimedia dari sudut pengajaran-pembelajaran, pembangunan kandungan dan penyelidikan dan perkhidmatan perundingan profesional dagang.

IMM beriltizam untuk menjadikan UPM sebagai pusat kecemerlangan dalam multimedia melalui pembangunan kandungan yang pelbagai dan aplikasi/produk yang relevan dalam pengajaran, perbelajaran, penyelidikan dan perkhidmatan profesional.

### Peranan IMM

- Mengendalikan program penyelidikan dalam pembangunan kandungan multimedia di peringkat sarjana (M.Sc.) dan kedoktoran falsafah (Ph.D)
- Membangunkan dan menspesifikasikan aplikasi multimedia melalui sokongan sumber manusia
- Membangunkan perisian bagi menampung program pendidikan jarak jauh dan program francais universiti
- Membangunkan animasi 3D untuk televisyen, produksi filem, pelancaran multimedia dan realiti maya
- Menyediakan perundangan dalam bidang multimedia dan perkhidmatan profesional dalam e-dagang, penyimpanan digital, konsep perbankan, jangkauan multimedia, intranet korporat, pengeluaran dan pengoutomasi pejabat
- Menyediakan dan menawarkan latihan praktikal bagi pembangunan produk multimedia serta perkhidmatan latihan industri kepada sumber manusia



## MULTIMEDIA INSTITUTE

The Multimedia Institute (IMM) was established through the amalgamation of Cybercreative Laboratory and the Centre for Architectural Learning/Teaching in January 1999. The Institute has 20 staff who possess skills and specialisation in computer science, electronic engineering, physics, agriculture, biotechnology, human development and economics. This Institute operates as a self-financing cost centre. The Multimedia Institute was given an initial outlay of RM one million for its operation.

### Aim, Mission and Objective

The Institute was established to coordinate, implement, train and network resources in UPM for multimedia development for teaching/learning, content development, research and professional consultancy services.

IMM is determined to make UPM a centre of excellence in multimedia through content development, relevant product application in teaching/learning, research and professional service.

### Role of IMM

- To conduct research in multimedia content development at Masters and Ph.D levels
- To develop and specify multimedia applications through manpower support
- To develop software to complement Distance Learning and the Franchised Programmes of UPM
- To develop 3D animation for television, film production, multimedia and virtual reality
- To prepare laws governing multimedia and professional service in e-commerce, digital storage, banking concept, multimedia estimation, corporate internet, and office automation

- Mengendalikan kursus-kursus jangka pendek dan sederhana, program francais untuk memberikan kecekapan dan kemahiran kepada sumber manusia di sektor awam dan swasta
- Menghulurkan bantuan infrastruktur dan infostruktur serta khidmat nasihat kepada pembangunan usahawan-tekno

## Projek-projek yang Dijalankan dan Prestasi

### Intranet Institut Multimedia

Pengendalian pejabat secara maya dengan penggunaan sepenuhnya intranet pejabat melalui laman web.

### Program Internship

Seramai 58 orang terlibat dalam membangunkan persembahan multimedia untuk persidangan antarabangsa AGEX di PWTC: mereka juga telah membangunkan lebih daripada 45 wireframe model 3D untuk projek animasi, intranet IMM, homepej Alumni UPM dan Intranet Persidangan AGEX.

### Lawatan Ke Luar

Kebanyakan lawatan adalah untuk mendapatkan maklumat berkaitan dengan pembangunan kandungan multimedia.

### Latihan Animasi 3D (UPM-KANADA)

Pihak IMM telah menjalinkan kerjasama teknikal animasi 3D dengan Capilano College, Vancouver, British Columbia melalui kerjasama Pesuruhjaya Tinggi Kanada.

### Pembangunan Kandungan Multimedia

Kerjasama dengan Commonwealth Agricultural Bureau International (CABI) sedang diusahakan bagi membangunkan kandungan multimedia interaktif bagi skop tajuk berikut 'Compendium on Animal Health & Production' mulai tahun 2000.

### Kursus Reka Bentuk dan Penerbitan Multimedia

Seramai 207 peserta telah dilatih daripada pelbagai organisasi.

### Percetakan poster, kad jemputan, CD dan brosur AGEX99

Bagi tujuan promosi dan penyampaian maklumat Pameran dan Konvokesyen Pertanian 1999 pada bulan Julai-Ogos 1999.

- To prepare and offer practical training for multimedia product development industrial manpower training service
- To conduct short and medium term courses and franchised programmes to inculcate efficiency and skills in manpower for private and corporate sectors
- To extend infrastructure and infostructure assistance as well advisory services for the development of entrepreneurs

## Projects Conducted and Performance

### Intranet Multimedia Institute

Operating virtual offices with the use of intranet and website services.

### Internship Programme

58 staff were involved in the development of a multimedia presentation at the International AGEX in PWTC. They also developed 45 wire frame 3D model for animation projects, intranet IMM, Alumni UPM homepage and the AGEX Internet Conference.

### Visits

Most of the visits were fact-finding missions related to multimedia content development.

### 3D Animation Training (UPM-CANADA)

IMM has established technical cooperation with Capilano College Vancouver, British Columbia through the Canadian High Commission.

### Multimedia Content Development

With the cooperation of the Commonwealth Agricultural Bureau (CABI) efforts are being directed towards developing interactive multimedia content for a 'Compendium on Animal Health & Production' beginning 2000.

### Course on Design & Publication of Multimedia.

207 individuals have been trained so far.

### Printing of posters, invitation cards, CD and AGEX99 brochures.

This was undertaken to promote and disseminate information during the 1999 July-August Agriculture Exhibition & Convention 99.



## PUSAT KEBUDAYAAN DAN KESENIAN SSAAS

Pusat Kebudayaan dan Kesenian SSAAS menyediakan tempat dan peralatan bagi aktiviti akademik, aktiviti kebudayaan, pameran dan majlis-majlis tertentu serta tempat untuk pelajar menjalani ujian bulanan dan peperiksaan akhir sepanjang tahun.

Pusat Kebudayaan mempunyai dua kumpulan kebudayaan yang aktif iaitu Caklempong dan Band Putra. Kumpulan ini sering mendapat undangan untuk meraikan majlis rasmi UPM. Antaranya majlis Konvokesyen, Jasa Putra dan juga luar kampus.

Antara aktiviti yang dijalankan oleh bahagian ini ialah:

- Majlis Tahlil
- Pesta Ang Pau
- Konsert Koir
- Pertandingan Laman Web
- Orkestra Simfoni Konsert
- Seminar Perakaunan Nasional
- Kolokium Belia Negara
- Malam Mesra AIESEC
- Malam Tunas Budaya
- Karnival Persatuan Mahasiswa Islam
- Forum Perdana (Cintai Insan Intelek)
- Meta Gathering
- Malam Silatulrahim
- Demonstrasi Pertandingan Wajadiri Peringkat Kebangsaan
- Fiesta Nasyid
- Konsert Kamar Conservatoire
- Persembahan Drama TESL
- Anugerah Khidmat Cemerlang
- Variety Show
- Persembahan Gema Senandung III
- Muktamar Senawi
- Konsert Akustik

## THE SSAAS ARTS AND CULTURAL CENTRE

This Centre provides space and equipment for academic and cultural events and exhibitions and functions. It also serve as a venue for semester and final examinations throughout the year.

The Centre has two active cultural groups that is the *Caklampung* and *Putra Band*. These groups are invited to perform at various official functions of UPM such as the Convocation, *Jasa and Setia Putra Awards* as well as at functions organised by external agencies.

Among the activities held at this Centre are:

- Thanksgiving Prayers
- Ang Pau Festival
- Choir Concert
- Website Competition
- Symphony Orchestra Concert
- National Accounting Seminar
- National Youth Colloquium
- AIESEC Nite
- *Tunas Budaya* Nite
- Islamic Graduate Association Carnival
- Prime Forum (Love the Intellect)
- Meta Gathering
- Fraternity Nite
- Demonstration of National *Wajadiri* Competition
- Nasyid Fest
- Concert Kamar Conservatoire
- Drama TESL – Presentation
- Excellent Service Award Ceremony
- Variety Show
- *Gema Senandung III*
- *Muktamar Senawi*
- Acoustic Concert





## PUSAT ISLAM

Pada tahun 1999, Pusat Islam UPM telah memperbanyakkan kegiatannya selari dengan objektif dan misi Pusat Islam UPM 'Sebagai Pusat Kecemerlangan dalam Mengembangkan dan Menyebarkan Agama Islam ke arah Pembinaan Masyarakat Madani dan Rabbani.

Aktiviti yang dijalankan adalah secara menyeluruh, meliputi pelbagai peringkat masyarakat daripada golongan kanak-kanak, remaja, mahasiswa, pegawai dan orang-orang tua. Aktiviti-aktiviti tersebut berbentuk pendidikan, akademik dan kebajikan masyarakat.

Aktiviti 1999, dijalankan dengan jayanya walaupun dalam keadaan kegawatan ekonomi, terutama aktiviti-aktiviti yang dijalankan sepenuh masa dan bersiri seperti Tadika Islam Antarabangsa, Kelas Pengajian selepas Maghrib, Kelas Fardhu A'in Kanak-kanak dan Remaja, Kursus Fardhu A'in Belia, Kursus Bahasa Arab, Kursus Praperkahwinan, Kursus Haji, Kelas Pengajian al-Qur'an, Kelas Pengajian Wanita, Kumpulan Marhaban dan Yassin dan juga aktiviti umum seperti sambutan Maulidur Rasul, Seminar Tradisi Ilmu dalam Islam, Forum Perdana, Ceramah-ceramah Umum Aktiviti Ramadhan dan sebagainya.

Selain daripada aktiviti di atas, Pusat Islam UPM juga sentiasa memenuhi jemputan dan memberi khidmat nasihat dan bimbingan kerohanian kepada masyarakat setempat. Bacaan doa di majlis-majlis rasmi universiti, sembahyang hajat, urusan jenazah, tahlil, khidmat tunjuk ajar dan ceramah di kolej-kolej kediaman, surau-surau, persatuan pelajar, fakulti-fakulti di UPM dan masyarakat setempat seperti sekolah, Badan NGO dan sebagainya.

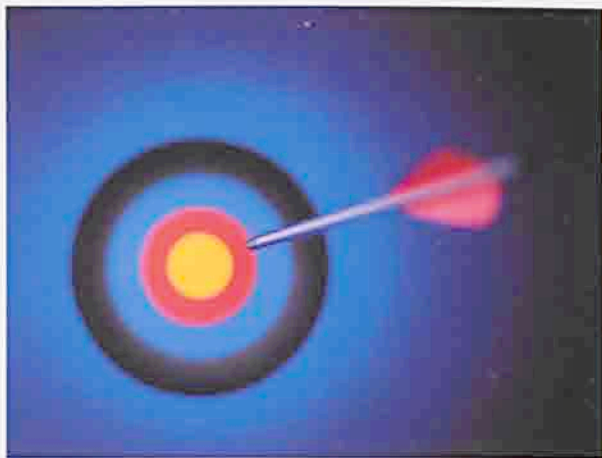
## ISLAMIC CENTRE

In 1999, the Centre conducted numerous courses in line with its objective and mission to develop into 'A Centre of Excellence for the dissemination and development of Islam towards building a caring and spiritual society'. The activities carried out by the Centre were directed at children, youth, students, officers and the elderly. The activities were education, academic and social service based.

Despite the economic constraints in 1999, both its on-going and ad-hoc activities were successfully conducted. These were the International Islamic Kindergarten, religious classes (after Maghrib), *fardhu ain* classes for children, teenagers and youth, Arab language classes, pre-marital courses, *Haj* courses, Al-Quran reading classes, women's courses, *Marhaban* and *Yassin* Groups. The general activities conducted were the commemoration of Maulidur Rasul', Seminar on the *Tradition of Knowledge in Islam*, *Forum Perdana*, public lectures and activities related to Ramadhan.

Apart from the above activities, the Islamic Centre is often called upon to be involved in spiritual counselling to the community in the vicinity, *Doa* reading at official university functions, special prayers, burials, sermons at colleges, suraus, student associations and faculties of UPM, NGOs. Local residents too very often draw on the expertise of the Centre.





## CORPORATE PLANNING UNIT (UPK)

The UPK serves to:

- Monitor the effectiveness of the management of UPM in providing services to customers and the quality of its services. Among its services are:
  - Analysis related to the effectiveness and usefulness of the teaching system in UPM
  - Analysis of the quality of services
  - Analysis of the quality of graduates/produced
  - Analysis of the market demand for UPM graduates
  - Analysis of client needs in terms of UPM's contribution
  - Analysis of the competitive strength of UPM in drawing new students
- To plan, organise and coordinate the strategic development of staff through training and strategic workshops
- To plan, organise and coordinate Quality Assurance projects through ISO 9000
  - To organise Quality Assurance Programmes for the administrative system, research, teaching and services in UPM
  - To monitor the quality control system of ISO 9001 which has been certified by SIRIM and to ascertain that the system is successfully audited by SIRIM
  - To develop and strengthen the ISO 9001 System by using digital compliance to Lotus Notes

## UNIT PERANCANGAN KORPORAT (UPK)

Tugas Unit ini adalah seperti berikut:

- Menjalankan pemantauan terhadap keberkesanan pengurusan Univesiti dalam menyediakan perkhidmatan kepada pelanggannya dan kualiti yang dilahirkan. Contohnya:
  - Analisis berkaitan kemandapan dan keberkesanan sistem pembelajaran di UPM
  - Analisis kualiti perkhidmatan kepada pelajar
  - Analisis kualiti graduan yang dihasilkan
  - Analisis tahap permintaan terhadap graduan UPM dalam pasaran
  - Analisis berkaitan keperluan luaran terhadap sumbangan UPM
  - Analisis kedudukan daya saing UPM dalam kemasukan pelajar baru mengikut program
- Merancang, menganjur dan menyelaraskan pembangunan strategik staf menerusi program-program latihan dan bengkel strategik
- Merancang, menganjur dan menyelaraskan projek-projek penjaminan kualiti (Quality Assurance) melalui ISO 9000
  - Mengendalikan program penjaminan kualiti sistem pentadbiran, penyelidikan, pembelajaran dan perundingan/perkhidmatan UPM
  - Mengendalikan pemantauan sistem kualiti ISO 9001 UPM yang telah disahkan oleh SIRIM bagi memastikan sistem tersebut lulus audit seterusnya oleh SIRIM
  - Membangun dan memperkukuh Sistem ISO 9001 UPM secara digital menggunakan perisian Lotus Notes

JADUAL/TABLE 33

### AKTIVITI SEPANJANG TAHUN 1999 ACTIVITIES FOR 1999

1. <b>Kepimpinan dan Bina Diri Berpasukan</b> Leadership & Teambuilding	Jeram Besu, Raub, Pahang
2. <b>ISO untuk Penolong Pendaftar</b> ISO for Assistant Registrars	Mutiara Budi
3. <b>Bengkel Intensif Perancangan Strategik dan ISO</b> Intensive Strategic Planning & ISO Workshop	Selesa Hill Homes, Bentong, Pahang
4. <b>Induksi SSB Kumpulan Pengurusan dan Profesional</b> SSB Induction Course for Management & Professional Group	Mutiara Budi
5. <b>Pengurusan Aset</b> Asset Management	Mutiara Budi
6. <b>Mesyuarat Rangkaian Penjaminan IPTA</b> Rangkaian Penjaminan IPTA Meeting	
7. <b>Bengkel Dasar Penyelidikan Universiti</b> University Research Policy Workshop	Country Heights, Kajang
8. <b>Program Gerak Putra Hutan</b> Gerak Putra Hutan Programme	Puchong
9. <b>Bengkel Perancangan Strategik</b> Strategic Planning Workshop	Sri Pena, Port Dickson
10. <b>Bengkel Perancangan Strategik Universiti Putra Malaysia</b> University Putra Malaysia Strategic Planning Workshop	Country Heights, Kajang

## PENERBIT UNIVERSITI PUTRA MALAYSIA

### Penerbitan

Pada tahun 1999, jumlah penerbitan yang dihasilkan oleh Penerbit adalah seperti berikut:

- 11 judul buku
- 2 isu *Pertanika Journal of Tropical Agricultural Science* yang mengandungi 29 makalah
- 2 isu *Pertanika Journal of Science and Technology* yang mengandungi 16 makalah
- 2 isu *Pertanika Journal of Social Science and Humanities* yang mengandungi 14 makalah
- 6 isu *The Company Secretary* untuk The Malaysian Association of the Insitute of Chartered Secretaries and Administrators
- 4 isu *Buletin Era Hijau* untuk Jabatan Alam Sekitar, Kementerian Science, Teknologi and Alam Sekitar
- 12 keluaran *Tribun Putra* Universiti Putra Malaysia

### Perkhidmatan

Selain daripada penerbitan tersebut, Penerbit juga telah menawarkan khidmat profesional seperti penyuntingan bahasa Melayu, bahasa Inggeris, penterjemahan, reka bentuk, mengatur huruf, percetakan digital dan sebagainya. Kebanyakan jabatan dan fakulti kini menggunakan perkhidmatan Penerbit untuk menguruskan penerbitan-penerbitan mereka seperti laporan kajian, brosur program, buku panduan, pengumuman persidangan dan sebagainya.

Pendapatan kasar penerbit daripada jualan buku dan perkhidmatan mencecah hampir satu juta. Bangunan Penerbit telah mula dibina dan dirancang siap pada bulan Mei 2000.

## UNIVERSITI PUTRA MALAYSIA PRESS

### Publications

For the year 1999, Penerbit succeeded in publishing the following:

- 11 books
- 2 issues of *Pertanika Journal of Tropical Agricultural Science* consisting of 29 articles
- 2 issues of *Pertanika Journal of Science and Technology* consisting of 16 articles
- 2 issues of *Pertanika Journal of Social Science and Humanities* consisting of 14 articles
- 6 issues of *The Company Secretary* for The Malaysian Association of the Insitute of Chartered Secretaries and Administrators
- 4 issues of *Buletin Era Hijau* for the Department of Environment, Ministry of Science, Technology and Environment
- 12 issues of *Tribun Putra* Universiti Putra Malaysia

### Services

Besides these publications, several departments and faculties of the Universiti have availed themselves of the services offered by the Press such as Bahasa and English translation, design and layout, digital printing etc to publish their publicity and programme brochures, guide books, research reports, and conference announcements.

The gross income of the Press for 1999 was almost RM one million. The construction of the Press Building was initiated towards the end of 1999 and is scheduled to be completed in May 2000.





## Perkembangan

Pada 4 September 1999, Universiti Putra Malaysia Terengganu (UPMT) telah mengadakan Majlis Konvokesyen di Dewan Besar, Wisma Darul Iman, Kuala Terengganu. Seramai 418 graduan telah menerima ijazah dan diploma masing-masing dari TYT Tun Dato' Seri Hamdan Sheikh Tahir, Canselor UPM.

Pada 23 November 1999, UPMT telah menerima lawatan Y.B Dato' Seri Najib Tun Abdul Razak, Menteri Pendidikan Malaysia. Dalam lawatan tersebut, YB Menteri telah mengisytiharkan penubuhan Kolej Universiti Terengganu.

Bagi tahun 1999, UPMT telah menawarkan empat program baru. Program tersebut yang ditawarkan mulai semester Mei 1999/2000 ialah Bachelor Ekonomi, Bachelor Sains (Pengajian Makanan) dan Bachelor Sains dengan Pendidikan (Kepujian) dan program luar kampus – Sarjana Pengurusan.

## Development

On 4 September 1999, UPMT held its convocation ceremony at the Dewan Besar, Wisma Darul Iman, Kuala Terengganu. 418 graduates received their Bachelors and Diplomas from TYT Tun Dato' Seri Hamdan Sheikh Tahir, Chancellor of UPM.

On 23 November, 1999 UPMT received YB Dato' Seri Najib Tun Razak, the Minister of Education, Malaysia. On the occasion of his visit, the Honorable Minister declared the establishment of College University Terengganu.

Dengan perkembangan pesat sektor pendidikan negara, UPMT memberi penumpuan dalam bidang-bidang pengurusan, ekonomi, sastera dan sains di samping mengekalkan bidang yang sedia ada. UPMT menawarkan sembilan program ijazah, satu program peringkat diploma dan tiga program matrikulasi.

Tahun 1999 menunjukkan peningkatan dalam kemasukan pelajar sebanyak 41.9% berbanding tahun 1998. Enrolmen pelajar juga menunjukkan peningkatan sebanyak 40.5%, manakala siswazah menunjukkan pertambahan sebanyak 129.7% berbanding tahun sebelumnya.

JADUAL/TABLE 34

**ENROLMEN PELAJAR UPMT  
STUDENT ENROLMENT UPMT**

	1998	1999
<b>Kemasukan Pelajar</b> Student Intake	1251	1775
<b>Enrolmen Pelajar</b> Student Enrolment	2014	2830
<b>Keluaran Pelajar</b> Graduating Students	182	418

## Pengisian Jawatan, Kenaikan Pangkat dan Persaraan

Dalam tahun 1999, terdapat 324 jawatan telah diisi di Universiti Putra Malaysia Terengganu. Pembahagian jawatan mengikut kategori adalah seperti di Jadual 34.

Daripada jumlah di atas, 11 merupakan kakitangan kontrak, sembilan kakitangan sambilan, 19 kakitangan sementara dan yang selebihnya adalah kakitangan tetap.

In the year 1999, four new programmes were offered for the May 1999/2000 semester. They were the Bachelors in Economics, Bachelors in Science (Food Studies) Bachelor of Science with Education (Honours) and an off-campus programme – the Masters in Management. Due to the rapid development in the educational sector UPMT has begun offering courses in management, economics, arts and science. Currently UPMT offers nine degree programmes, one diploma and 3 matriculation programmes.

For 1999, the student intake increased by 41.9% compared to the 1998 intake. Student enrolment saw an increase of 40.5% while the graduate population saw an increase of 129.7% compared to the previous year (Table 34).

JADUAL/TABLE 35

**JAWATAN MENGIKUT KUMPULAN  
POSTS BY GROUP**

Kumpulan Perkhidmatan Service Group	Jumlah Jawatan No. of Posts
<b>Profesor</b> Professor	7
<b>Profesor Madya</b> Assoc. Professor	18
<b>Pensyarah</b> Lecturers	61
<b>Tutor</b> Tutors	36
<b>Guru</b> Teachers	20
<b>Kakitangan Sokongan</b> Support Staff	182
<b>Jumlah/Total</b>	<b>324</b>

## Posts, Promotions and Retirement

In 1999, 324 posts were filled. The breakdown of posts according to category is as shown in Table 34. Of the total, 11 were contract staff, 19 temporary staff, 9 part-time staff with the rest being permanent staff.

In the promotion exercise, an Assistant Administrative officer (Grade N6) was promoted to Administrative Officer (Grade N3) another Grade N2 Administrative Officer was promoted to Grade N1, a Grade W3 Financial Officer was promoted to Finance KUP Grade W2, a Science Teacher (Grade DG3) was appointed as a Lecturer (Grade DS2), a tutor (Grade DA2) was appointed a lecturer (Grade DS2), two Associate Professors (Grade DS1) were promoted to Professors (Grade

Dalam urusan kenaikan pangkat pula, seorang Penolong Pegawai Tadbir (gred N6 dinaikkan pangkat secara lantikan ke Pegawai Tadbir (Gred N3), seorang lagi Pegawai Tadbir (Gred N2) dinaikkan pangkat Pegawai Tadbir (KUP) (Gred N1), Seorang Pegawai Kewangan (Gred W3) dinaikkan pangkat Pegawai Kewangan (KUP) (Gred W2), seorang Guru Sains (Gred DG3) dilantik sebagai Pensyarah (Gred DS2), seorang Tutor (Gred DA2) dilantik ke Pensyarah (Gred DS2), dua Profesor Madya (Gred DS1) dinaikkan pangkat ke Profesor (Gred VK7) dan tiga Pensyarah (Gred DS2) dinaikkan pangkat ke Profesor Madya (Gred DS1).

Empat kakitangan UPMT telah meletak jawatan. Mereka terdiri daripada kumpulan sokongan. Bagi persaraan pula, seorang dari kumpulan Profesional dan seorang lagi dari kumpulan sokongan. Seramai sembilan tutor telah diluluskan cuti belajar bagi melanjutkan pelajaran dalam program Sarjana dan dua pensyarah mengikuti Program Ph.D.

## Perkhidmatan Cemerlang

Majlis Anugerah Perkhidmatan Cemerlang UPMT telah diadakan pada 21 Oktober 1999 dan disampaikan oleh Y. Bhg. Prof. Dato' Dr. Mohd. Mahyuddin bin Mohd Dahan. Seramai 13 orang telah menerima Anugerah Perkhidmatan Cemerlang dan 26 lagi penerima Sijil Anugerah Perkhidmatan Cemerlang.

## Pusat Hal Ehwal Kemahasiswaan

Pusat Hal Ehwal Kemahasiswaan (HEK) UPMT diwujudkan untuk mengendalikan dan bertanggungjawab dalam semua urusan yang berkaitan dengan penempatan, kebajikan, persatuan dan kegiatan pelajar, biasiswa/pinjaman kewangan, kesihatan dan tatatertib pelajar.

## Penempatan Pelajar

Kolej Kediaman pelajar terbahagi kepada dua iaitu Asrama Dalam Kampus dan Asrama Taman Permint Makmur yang dapat menampung seramai 516 pelajar. Dengan pertambahan pelajar, pihak kolej kediaman telah menyewa dua bangunan dari Kolej Agama Sultan Zainal Abidin (KUSZA) yang dapat memuatkan seramai 1,072 orang dan rumah daripada orang perseorangan di sebuah kawasan perumahan yang dapat memuatkan seramai 350 pelajar.

VK7) and 3 lecturers (Grade DS2) were promoted to Associate Professors (Grade DS1).

Four staff of UPMT from the Support Group have resigned. Two staff retired, one from the Professional Group and another from the support group. Nine tutors have been given study leave to pursue their Masters and two lecturers to pursue their Ph.Ds.

## Excellent Service

The Excellent Service Award Ceremony of UPMT was held on 21 October 1999. Thirteen staff were awarded Excellent Service Awards and 26 others received Commendation Certificates from YB Dato' Dr. Mohd. Mahyuddin b. Mohd. Dahan.

## Graduate Affairs Centre (HEK)

The Graduate Affairs Centre of UPMT is responsible for all affairs pertaining to accommodation, welfare, social and student activities, scholarships/loans, health and discipline of students

## Students' Accomodation

There are two categories of residential colleges: Campus Residential Colleges and Non-campus Residential Colleges such as the ones in Taman Permint Makmur. All of these can accommodate a total of 516 students. With the increase in student intake, a further two buildings were rented at the College Agama Sultan Zainal Abidin (KUZA) to accommodate 1,072 students. Also, a number of individual houses have been rented to accommodate a further 350 students.



## Aktiviti Pelajar

Semua perjalanan aktiviti pelajar adalah di bawah kelolaan Majlis Perwakilan Pelajar (MPP) yang diterajui oleh Exco Tertinggi. MPP juga bertindak memupuk semangat hidup sebagai suatu perbadanan di kalangan pelajar universiti dengan prinsip "BERILTIZAM MEREALISASI ASPIRASI MAHASISWA". Pembentukan sekretariat dan kelab di bawah MPP dibuat bagi menjamin segala aktiviti dapat dijalankan dengan lebih licin, kemas dan teratur. Antara aktiviti yang dijalankan sepanjang tahun ialah:

- Perjumpaan MPP bersama pelajar Matrikulasi di Tok Jembal
- Kem Kepimpinan Mahasiswa Cemerlang
- Lawatan ke Prince Songkla, University
- Malam Teater dan Kebudayaan
- Pilihanraya MPP
- Kem Induksi
- Lawatan
- Pertandingan Kuiz Bina Bangsa Peringkat Kebangsaan

## Biasiswa

Pusat Hal Ehwal Kemahasiswaan dengan kerjasama Bahagian Hal Ehwal Pelajar UPM telah mengendalikan permohonan untuk mendapat biasiswa dan pinjaman bagi pelajar baru dan lama. Penganjur biasiswa sama seperti yang diberikan kepada pelajar UPM keseluruhan. Bilangan pelajar yang ditaja dan diberi biasiswa/pinjaman adalah 2,190 atau 80.43% daripada jumlah pelajar.

## Unit Kaunseling dan Kerjaya

Unit ini dikendalikan oleh seorang kaunselor yang pada asasnya adalah kakitangan akademik dan mengajar beberapa kursus Bimbingan dan Kaunseling di Unit Pendidikan Fakulti Sains dan Sastera. Pada masa hadapan, pihak pentadbir berharap untuk mendapatkan kaunselor sepenuh masa agar program-program kaunseling dapat dilaksanakan dengan teratur dan terancang sesuai dengan pertambahan bilangan pelajar.

## Unit Sukan

Unit sukan di Universiti Putra Malaysia Terengganu merupakan salah sebuah badan yang berada di bawah Pusat

## Student Activities

All student activities are conducted and supervised by the Students Representative Council (MPP) headed by the Higher Executive Council. The MPP endeavours to instill the spirit and principle of 'ENDEAVOUR TO REALISE THE UNDERGRADUATE ASPIRATION'. The establishment of the Secretariat and Clubs under the MPP assured the smooth, orderly and effective running of the various student activities. The following are some of the activities conducted in 1999.

- A get together of MPP and Matriculation students at Tok Jembal
- Excellent Graduate Leadership Camp
- Visit to Prince of Songkla University
- Cultural & Theatre Nite
- MPP Elections
- Induction Camp
- Visits
- National Nation-Building Kuiz

## Scholarships

The MPP with the assistance of HEP, Serdang arranged for scholarships and loans for new and current students seeking financial assistance. UPM Serdang Campus and UPMT tap the same sources for financial assistance. A total of 2,190 scholars or 80.43% of the students have been awarded scholarships/loans.

## Career & Counselling Unit

Currently this unit is operated by an academic who teaches various courses on guidance & counselling. In the future, UPMT hopes to have a full-time counsellor who will be able to plan a carefully organised counselling programme for the students.

## Sports Unit

The Sports Unit is under the Student Affairs Department. Numerous sports activities have been organised with the cooperation of MPP to further improve the relationship between students and staff. Some of the activities organised were Street Soccer, Badminton, Netball and others involving external bodies.

Hal Ehwal Kemahasiswaan (HEK). Pihak universiti banyak mengemukakan aktiviti-aktiviti sukan dengan kerjasama Majlis Perwakilan Pelajar (MPP) dalam mengeratkan lagi hubungan sesama pelajar begitu juga dengan kakitangan. Antara kejohanan yang dianjurkan ialah bola sepak pantai, "street soccer", badminton, bola jaring dan beberapa permainan lagi. Unit ini juga mengadakan beberapa aktiviti yang membabitkan pihak luar.

### **Pusat Kesihatan Pelajar**

Pusat Kesihatan Pelajar (PKP) telah diwujudkan di UPMT pada bulan Jun 1995. Kemudahan dan perkhidmatan yang mampu diberikan oleh Klinik Pelajar termasuklah memberi kemudahan rawatan awal kepada pesakit serta memberi panduan dan pendidikan kesihatan kepada pelajar dan kakitangan. Statistik tahun 1999 menunjukkan bahawa seramai 6,843 pelajar dan kakitangan mendapat perkhidmatan ini.

### **Penerbitan**

Dari segi penerbitan, pensyarah UPMT telah menghasilkan 113 artikel jurnal, 14 penerbitan telah dibukukan, 128 kertas kerja dibentangkan oleh pensyarah UPMT dalam seminar dan forum yang diadakan di pelbagai tempat. Sementara itu sepanjang tahun 1999, lebih daripada 100 aktiviti telah dijalankan oleh kakitangan UPMT yang melibatkan pelbagai agensi kerajaan mahupun swasta.

### **Students' Health Centre (PKP)**

This centre has been in operation in UPMT since June 1995. In terms of service and capacity, the clinic is only able to provide outpatient treatment, guidance and health education to the students and staff. A total of 6843 patients received treatment at the clinic in 1999.

### **Publications**

UPMT academic staff published 113 journal articles and 14 books. A further 128 working papers have been presented at conferences, seminars and forum. Besides, UPMT staff have conducted more than 100 activities involving staff and government and external agencies.

## LAWATAN RASMI OFFICIAL VISITS



### FEBRUARI

- 5-8 Delegasi Hujia Private School, Beijing, The People's Republic of China diketuai oleh Mr. Wang Jia Jun, Special Grade Teacher/ Headmaster.
- 12 Prof. Dr. Madeleine J. Atkins, Vice-Chancellor, University of Newcastle Upon Tyne, United Kingdom.
- 24 Ms. Akemi Nakatomi, Ms. Mieko Nagai, Ms. Shihoka Yamaguchi, Mr. Kazuya Ikeda dan Mr. Takehiro Nakashima daripada South-East Asia Study Club (SASC), Soka University, Japan.

### MAC

- 12 Dr. Nguyen Ngoc Tien, Director, The National Institute for Science and Technology Policy and Strategy Studies, Ministry of Science, Technology and Environmental, Vietnam serta delegasi.

### FEBRUARY

- 5-8 Delegation from Hujia Private School, Beijing, The People's Republic of China headed by Mr. Wang Jia Jun, Special Grade Teacher/ Headmaster.
- 12 Prof. Dr. Madeleine J. Atkins, Vice-Chancellor, University of Newcastle Upon Tyne, United Kingdom
- 24 Ms. Akemi Nakatomi, Ms. Mieko Nagai, Ms. Shihoka Yamaguchi, Mr. Kazuya Ikeda and Mr. Takehiro Nakashima from South-East Asian Study Club (SASC), Soka University, Japan

### MARCH

- 12 Dr. Nguyen Ngoc Tien, Director, The National Institute for Science and Technology Policy and Strategy Studies, Ministry of Science, Technology and Environmental, Vietnam and delegation.

**APRIL**

- 1 Ms. Kubo Naoka, Training Director, Aquarius Intelligence Institute dan Ms. Ng Kit Yoong, Training Coordinator/Translator, University of Hiroshima, Japan.
- 9 Delegasi Kesatuan Kakitangan Am Universiti Utara Malaysia.
- 26 Mrs. Mary Henry, Head of Kindergarten/Infant Sayfol International School, Petaling Jaya seramai 90 orang.
- 27 Prof. Dr. David Dilks, Vice Chancellor dan Prof. Terry King, Pro Vice-Chancellor University of Hull, United Kingdom.
28. Prof. Peter H. Omara-Ojungu, Dean, School of Environmental Science, University of Venda South Africa.

**MEI**

- 10 Prof. Daryl Le Grew, Vice-Chancellor dan Prof. Bob Park, Deputy Vice-Chancellor, University of Centerbury, New Zealand.
- 22 Prof. Mary O'Kane, Vice-Chancellor, University of Adelaide dan Prof. Ian Young, Executive Dean of Engineering, Computer and Mathematical Sciences, The University of Adelaide, Australia.
- 24 Mr. Milagros D. Ibe, Executive Director, Foundation for Upgrading the Standard of Education Inc, Philippines, Professor, College of Education, University of the Philippines.

**JULAI**

- 7 Prof. Yoshihiro Tachibana, Director (Head) of the International Exchange Programme, Mr. Nobukatsu Shimoyama, Director, International Exchange Programme dan Ms. Emiko Saito, Coordinator of Kokugakuin University, Japan.

**APRIL**

- 1 Ms. Kubo Naoka, Training Director, Aquarius Intelligence Institute and Ms. Ng Kit Yoong, Training Coordinator/Translator, University of Hiroshima, Japan
- 9 Delegation from General Staff Union, Universiti Utara Malaysia
- 26 Mrs. Mary Henry, Head of Kindergarten/Infant Sayfol International School, Petaling Jaya with 90 delegates
- 27 Prof. Dr. David Dilks, Vice Chancellor and Prof. Terry King, Pro Vice-Chancellor University of Hull, United Kingdom
28. Prof. Peter H. Omara-Ojungu, Dean, School of Environmental Science, University of Venda South Africa

**MAY**

- 10 Prof. Daryl Le Grew, Vice-Chancellor and Prof. Bob Park, Deputy Vice-Chancellor, University of Centerbury, New Zealand
- 22 Prof. Mary O'Kane, Vice-Chancellor, University of Adelaide and Prof. Ian Young, Executive Dean of Engineering, Computer and Mathematical Sciences, The University of Adelaide, Australia
- 24 Mr. Milagros D. Ibe, Executive Director, Foundation for Upgrading the Standard of Education Inc, Philippines, Professor, College of Education, University of the Philippines

**JULY**

- 7 Prof. Yoshihiro Tachibana, Director (Head) of the International Exchange Programme, Mr. Nobukatsu Shimoyama, Director, International Exchange Programme and Ms. Emiko Saito, Coordinator of Kokugakuin University, Japan

- 16 Mr. M. Jasimuddin, Chief Programme Officer, Asia Pacific, Commonwealth Secretariat, United Kingdom.
- 19 Lawatan Y.B. Dato' Seri Mohd. Najib Tun Hj. Abdul Razak, Menteri Pendidikan Malaysia.
- 21 Lawatan Duli Yang Maha Mulia Seri Paduka Baginda Raja Permaisuri Agong Tuanku Siti Aishah.
- 27 Mr. Dawood Auleer, President, ALIF Society, Mauritius.

- 16 Mr. M. Jasimuddin, Chief Programme Officer, Asia Pacific, Commonwealth Secretariat, United Kingdom.
- 19 YB Dato' Seri Mohd. Najib Tun Hj. Abdul Razak, Minister of Education, Malaysia
- 21 Her Royal Highness Yang Mulia Seri Paduka Baginda Raja Permaisuri Agong Tunku Siti Aishah
- 27 Mr. Dawood Auleer, President, ALIF Society, Mauritius

## OGOS

- 1 Prof. G T G Muhamedbhai, Vice-Chancellor, University of Mauritius.
- 21 Mr. Huynh Van Sau, Vice-Director Department of Student Affairs, Vietnam National University Ho Chi Minn City, Vietnam.
- 25 Dr. Peter Findlay, Head of Academic Development and Review, Academic Development Centre, University of Portsmouth, United Kingdom.

## AUGUST

- 1 Prof. G T G Muhamedbhai, Vice-Chancellor, University of Mauritius
- 21 Mr. Huynh Van Sau, Vice-Director Department of Student Affairs, Vietnam National University Ho Chi Minn City, Vietnam
- 25 Dr. Peter Findlay, Head of Academic Development and Review, Academic Development Centre, University of Portsmouth, United Kingdom



## SEPTEMBER

- 5 Prof. Stephen Hill, Director, UNESCO Jakarta Office.
- 6 Prof. Peroni, Director of Italian Centre for Tourism dan Prof. Merletti, University of Perugia, Italy.
- 8 Prof. Akimi Fujimoto dan Dr. Rie Miyaura, Tokyo University of Agriculture, Japan.

## SEPTEMBER

- 5 Prof. Stephen Hill, Director, UNESCO Jakarta Office
- 6 Prof. Peroni, Director of Italian Centre for Tourism and Prof. Merletti, University of Perugia, Italy
- 8 Prof. Akimi Fujimoto and Dr. Rie Miyaura, Tokyo University of Agriculture, Japan

20 Delegasi terdiri daripada H.E. Mr. Marek Paszucha, Ambassador of The Republic of Poland, Prof. Dr. Ryszard Tadeusiewics, Chancellor-Rector, Krakow Technical University of Poland, Dr. Zygmunt Langer, Deputy Chief of Mission/Counsellor of The Polish Embassy, Mrs. Malgorzata Tadeusiewics dan Mrs. Barbara Paszucha.

21 Mr. Akamine Eijin, Chief Executive Officer, Azuma Nissan Motors Company, Japan serta delegasi daripada Aquarius Intelligence Institute, Japan.

21 Mr. Yang Shu Xian, Chairman Ya'an Science and Technology Association of Sichuan, The People's Republic of China serta delegasi.

## OKTOBER

5 Prof. Cavazzoni, Professor in Accounting, University of Perugia, Italy.

## NOVEMBER

20 Dr. Peter Scott, Director, Programme Development, CAB International.

## DISEMBER

1 Delegasi dari Kokugakuin University, Japan terdiri daripada Prof. Yoshihiro Tachibana, Chairman of International Exchange Committee, Department of Foreign Languages and Cultures, Mr. Nobukatsu Shimoyama, Director, International Exchange Program dan Ms. Emiko Saoti, Coordinator of Kokugakuin University, Japan.



20 Delegation led by H.E. Mr. Marek Paszucha, Ambassador of The Republic of Poland, Prof. Dr. Ryszard Tadeusiewics, Chancellor-Rector, Krakow Technical University of Poland, Dr. Zygmunt Langer, Deputy Chief of Mission/Counsellor of The Polish Embassy, Mrs. Malgorzata Tadeusiewics and Mrs. Barbara Paszucha

21 Mr. Akamine Eijin, Chief Executive Officer, Azuma Nissan Motors Company, Japan with a delegation from Aquarius Intelligence Institute, Japan

21 Mr. Yang Shu Xian, Chairman Ya'an Science and Technology Association of Sichuan, The People's Republic of China and delegates

## OCTOBER

5 Prof. Cavazzoni, Professor in Accounting, University of Perugia, Italy

## NOVEMBER

20 Dr. Peter Scott, Director, Programme Development, CAB International

## DECEMBER

1 Delegation from Kokugakuin University, Japan consisting of Prof. Yoshihiro Tachibana, Chairman of International Exchange Committee, Department of Foreign Languages and Cultures, Mr. Nobukatsu Shimoyama, Director, International Exchange Program and Ms. Emiko Saoti, Coordinator of Kokugakuin University, Japan



# MEMORANDUM PERSEFAHAMAN MEMORANDUM OF UNDERSTANDING



## FEBRUARI

5 Optical Media Sdn. Bhd.

## APRIL

9 Mauritius Sugar Industry Research Institute (MSIRI), Mauritius

9 Indah Water Konsortium Sdn. Bhd.

## MEI

5 IEC Softwares Ltd., India dan Global Knowledge Vision IT Sdn. Bhd.

6 BERNAS Dominals Sdn. Bhd.

24 Mauritius Research Council (MRC), Mauritius.

## FEBRUARY

5 Optical Media Sdn. Bhd.

## APRIL

9 Mauritius Sugar Industry Research Institute (MSIRI), Mauritius

9 IndahWater Konsortium Sdn. Bhd

## MAY

5 IEC Softwares Ltd., India and Global Knowledge Vision IT Sdn. Bhd.

6 BERNAS Dominals Sdn. Bhd.

24 Mauritius Research Council (MRC), Mauritius

## JUN

4 Mahirnet Sdn. Bhd.

30 KFC Holdings (M) Bhd.

## JULAI

24 Nanyang Technological University, Singapore.

## OGOS

4 University of Mauritius, Mauritius.

11 Malaysian Pineapple Industry Board, Johor.

## SEPTEMBER

18 The Academy of Family Physicians of Malaysia.

## NOVEMBER

11 Netlink Business Systems, India.  
Global Knowledge Vision IT.

## DISEMBER

1 Kokugakuin University, Japan.

## JUNE

4 Mahirnet Sdn. Bhd.

30 KFC Holdings (M) Bhd.

## JULY

24 Nanyang Technological University, Singapore

## AUGUST

4 University of Mauritius, Mauritius

11 Malaysian Pineapple Industry Board, Johor

## SEPTEMBER

18 The Academy of Family Physicians of Malaysia

## NOVEMBER

11 Netlink Business Systems, India  
Global Knowledge Vision IT

## DECEMBER

1 Kokugakuin University, Japan



## AKTIVITI SEPANJANG TAHUN MAJOR ACTIVITIES AND EVENTS



### FEBRUARI

- 7 Malam Sirih Bertepuk Pinang Menari  
Anjuran Persatuan Seni Silat Cekak.
- Malam Perpaduan Pesta Ang Pau Raya  
Anjuran: Pertubuhan Golden Key National Honour Malaysia, UPM dan Jabatan Kesenian dan Kebudayaan Majlis Tertinggi Mahasiswa Kolej Tun Perak UPM.
- Sambutan Dekad dan 'Reunion'  
Anjuran: Jabatan Biokimia dan Mikrobiologi.

### FEBRUARY

- 7 *Malam Sirih Bertepuk Pinang Dance Night,*  
*organised by Persatuan Seni Silat Cekak*
- Solidarity Night – Festival Ang Pau Raya,*  
*UPM Association of Golden Key National Honour Malaysia and Arts & Culture Department, Student Representative Council, College Tun Perak UPM*
- Welcoming the Decade and Reunion,*  
*Chemical and Microbiology Department*



10 Majlis Sambutan Hari Raya FBMK  
Anjuran: Fakulti Bahasa Moden dan Komunikasi (FBMK).

Majlis Anugerah Sukan UPM Ke 18 sesi 98/99.

27 Malam Graduan Fakulti Pertanian  
Anjuran: Fakulti Pertanian.

## MAC

13 Majlis Reunion 2  
Anjuran: Fakulti Sains Pengajian Alam Sekitar.

22 "FLORA FAIR 99"  
Anjuran: Fakulti Pertanian, UPM

## APRIL

5-15 Kejohanan Terbuka Kakitangan UPM  
Anjuran: Jawatankuasa Pengurusan Sukan Staf UPM dan Jawatankuasa Kecil Permainan.

## MEI

19 Majlis Pendaftaran Pelajar Baru Sesi 1999/2000

19-22 Kem Kadet Renjer Hutan  
Anjuran: Jabatan Perhutanan Semenanjung dan Jabatan Perhutanan Perlis.

20 Majlis Setia Putra  
Anjuran Universiti Putra Malaysia.

24 Majlis Public Relations Talk  
Anjuran: Universiti Putra Malaysia.

10 Hari Raya Celebrations,  
Faculty of Modern Languages & Communication

18<sup>th</sup> Annual Sports Award Ceremony, 98/99  
Session

27 Faculty of Agriculture Graduate's Night,  
Faculty of Agriculture

## MARCH

13 Reunion 2  
Faculty of Science & Environment Studies

22 FLORA FAIR 99,  
Faculty of Agriculture

## APRIL

5-15 Staff Open Championships  
organised by Staff Sports Management  
Committee and Miner Sports sub-committee

## MAY

19 Registration of New Students 1999/2000

19 – 22 Forest Cadet Ranger Camp,  
Organised by National Forestry Department and  
Forestry Department of Perlis

20 Setia Putra Ceremony  
Registry, UPM

24 Public Relations Talk,  
Universiti Putra Malaysia



## JUN

- 9 Seminar Usahawan Siber  
Anjuran: Institut Multimedia.
- 13 Hari Pendaftaran dan Program Suai Kenal  
Diploma dan Matrikulasi Sesi 1999/2000.

## JULAI

- 16 Kolokium 'Academic Duty'  
Anjuran: Fakulti Sains dan Pengajian Alam  
Sekitar.
- 19 Perasmian Putra Infoport.
- 21 Lawatan Duli Yang Maha Mulia Seri Paduka  
Baginda Raja Permaisuri Agong Tuanku Siti  
Aishah.
- 27 Bengkel Halatuju Program Sains di IPTA  
Anjuran: Fakulti Sains dan Pengajian Alam  
Sekitar.
- 31 Majlis Konvokesyen Ke 23.

## OGOS

- 3 Majlis Konvokesyen Ke 23.

## SEPTEMBER

- 10 Majlis Khidmat Cemerlang.
- 29 Ekspidisi Puncak Kinabalu  
Anjuran: Universiti Putra Malaysia.



## JUNE

- 9 *Cyber Businessmen Seminar*  
Multimedia Institute
- 12 Diploma & Matriculation Students Registration  
& Orientation Programme, 1999/2000 Session.

## JULY

- 16 Colloquium on *Academic Duty*  
organised by Faculty of Science & Environmental  
Studies
- 19 Official Opening of Putra Infoport
- 21 Visit by Her Royal Highness Yang Mulia Seri  
Paduka Baginda Raja Permaisuri Agong Tunku  
Siti Aishah .
- 27 *Workshop on the Future of Science at IPTA*  
organised by Faculty of Science & Environmental  
Studies
- 31 23<sup>rd</sup> Convocation Ceremony

## AUGUST

- 3 23<sup>rd</sup> Convocation Ceremony.

## SEPTEMBER

- 10 Excellent Service Award Ceremony
- 29 Mt. Kinabalu Expedition,  
organised by Universiti Putra Malaysia



## OKTOBER

- 1-5 Ekspidisi Tingkat Keyakinan Diri  
Anjuran: UPMT.
- 12-13 Seminar Pengurusan dan Ekologi Hutan Simpan Ayer Hitam  
Anjuran: Fakulti Perhutanan UPM.
- 20-24 Perkampungan Teater Antara IPT 99  
Anjuran: Kumpulan Penggiat Teater Sejagat (PENTAS).

## NOVEMBER

- 13 Ceramah Kanser  
Anjuran: Persatuan Wanita Universiti Putra Malaysia.
- Eseiton 99-Program Ilmiah Generasi Muda  
Anjuran: Fakulti Perhutanan.

## DISEMBER

- 2 Forum Perdana  
Anjuran: Biro Kebajikan dan Kerohanian (BKR) Kolej Canselor.
- ELC 99  
Anjuran: Persatuan Mahasiswa Kejuruteraan (PEMAJU).
- 18 Malam Fiesta Cahaya Putra 99  
Anjuran: Sekretariat Kesenian dan Kebudayaan Kolej Tun Perak.

## OCTOBER

- 1-5 Enhancing Self-confidence Expedition, UPMT
- 12-13.1 Seminar on *Management & Ecology of Ayer Hitam Forest Reserve*, Faculty of Forestry, UPM
- 20-24 The 1999 IPT Theatre Village, organised by PENTAS Group.

## NOVEMBER

- 13 Lecture on Cancer, Women's Association, UPM
- Essayton 99-Youth Programme, Faculty Forestry, UPM

## DECEMBER

- 1 Forum Perdana, Spiritual & Welfare Bureau, Chancellor College
- ELC 99, Engineering Graduate Association (PEMAJU)
- 18 Putra Lights Festival 99, Arts & Cultural Secretariat, College Tun Perak



# PRESTASI KEWANGAN FINANCIAL PERFORMANCE



## PERBELANJAAN MENGURUS

Daripada jumlah pendapatan ini, sebanyak RM158.4 juta atau 79.97% adalah pemberian Kerajaan dan bakinya, RM39.7 juta atau 20.03% adalah daripada sumber pelbagai seperti yuran pengajian, sewa dan pelbagai pendapatan lain.

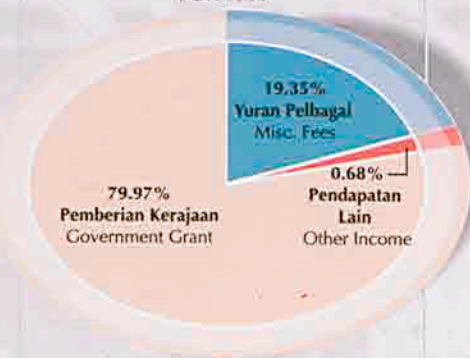
## OPERATING EXPENDITURE

For the financial year ending 31 December 1999, the total allocation for operating expenditure saw a decrease of 1.09% from RM200.3 million in 1998 to RM198.1 million in 1999.

JADUAL/TABLE 36  
PENDAPATAN MENGURUS  
OPERATING INCOME

	Tahun/Year 1999		Tahun/Year 1998	
	(RM juta)	(%)	(RM juta)	(%)
<b>Pemberian Kerajaan</b> Government Grants	158.4	79.97	167.3	83.53
<b>Yuran Pelbagai</b> Misc. Fees	38.3	19.35	30.9	15.40
<b>Pendapatan Lain</b> Other Expenditure	1.4	0.68	2.1	1.07
<b>Jumlah/Total</b>	<b>198.1</b>		<b>200.3</b>	

CARTA/CHART 10  
PUNCA PENDAPATAN MENGURUS  
UNTUK TAHUN 1999  
SOURCES OF OPERATING INCOME  
FOR 1999



Perbelanjaan mengurus Universiti meningkat sebanyak 17.63% daripada RM168.4 juta pada tahun 1998 kepada RM198.0 juta pada tahun 1999. Pembayaran emolumen merupakan perbelanjaan yang paling besar iaitu atas kadar 62.62% daripada keseluruhan perbelanjaan untuk tahun 1999. Perbelanjaan emolumen telah meningkat sebanyak 7.80% berbanding tahun 1998 dan bagi pembayaran bukan emolumen, perbelanjaan telah meningkat pada kadar 38.81%

Of this amount, RM158.4 million or 79.97% represented government grants while the balance of RM 39.7 million or 20.03% was raised from other sources such as tuition fees, rentals and others.

The operating expenditure saw a 17.63% increase, that is from RM168.4 million in 1998 to RM198.0 million in 1999. Emolument payouts constituted the largest component of operating expenditure with 62.62% of the total for the year 1999. There was a 7.80% increase in emolument payments in 1999 while for other expenditure excluding emoluments there was a 38.81% increase.

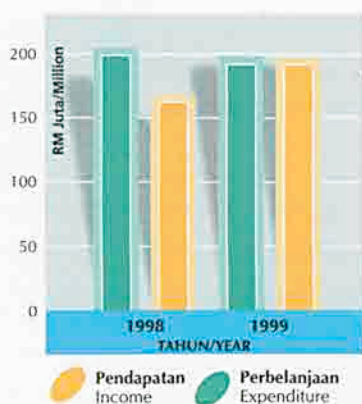
**JADUAL/TABLE 37**  
**PERBELANJAAN MENGURUS**  
**OPERATING EXPENDITURE**

	Tahun/Year 1999		Tahun/Year 1998	
	(RM juta)	(%)	(RM juta)	(%)
<b>Emolumen</b> Emolument	124.0	62.62	115.0	68.33
<b>Perbelanjaan selain Emolumen</b> Expenditure other than Emolument	74.0	37.38	53.4	31.67
<b>Jumlah/Total</b>	<b>198.0</b>		<b>168.4</b>	

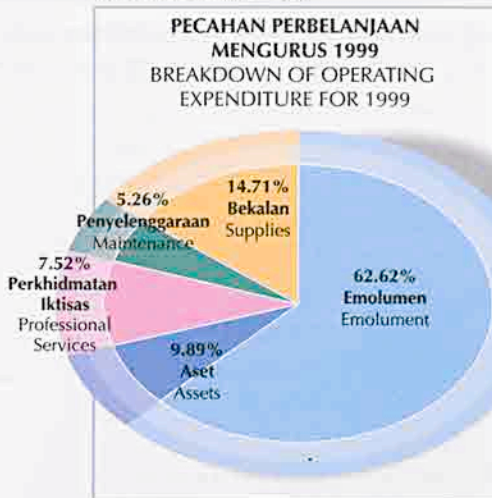
**JADUAL/TABLE 38**  
**PECAHAN PERBELANJAAN MENGURUS 1999**  
**BREAKDOWN OF 1999 OPERATING EXPENDITURES**

	Tahun/Year 1999		Tahun/Year 1998	
	(RM juta)	(%)	(RM juta)	(%)
<b>Emolumen</b> Emoluments	124.0	62.62	115.0	68.33
<b>Bekalan &amp; Bahan-Bahan</b> Equipment & Supplies	29.1	14.71	23.0	13.66
<b>Penyelenggaraan &amp; Pembaikan</b> Maintenance & Repairs	10.4	5.26	7.2	4.26
<b>Perkhidmatan Iktis &amp; Lain-Lain</b> Professional & other Services	14.9	7.52	13.9	8.24
<b>Aset Tetap</b> Fixed Assets	19.6	9.89	9.3	5.51
<b>Jumlah/Total</b>	<b>198.0</b>		<b>168.4</b>	

**CARTA/CHART 11**  
**AKAUN MENGURUS: PERBANDINGAN**  
**PENDAPATAN DAN PERBELANJAAN**  
**OPERATING ACCOUNT:**  
**COMPARISON BETWEEN**  
**INCOME AND EXPENDITURE**



CARTA/CHART 12



CARTA/CHART 13



## PERBELANJAAN PEMBANGUNAN

Jumlah yang diterima daripada Kerajaan untuk Perbelanjaan Pembangunan bagi tahun 1999 ialah sebanyak RM18.6 juta dengan 94.15% adalah untuk membiayai projek-projek baru RMK-7 dan 5.85% adalah untuk meneruskan projek-projek sambungan RMK-6.

Pemberian daripada Kerajaan merupakan peratusan terbesar iaitu 99.2% daripada keseluruhan pendapatan untuk tahun 1999.

## DEVELOPMENT EXPENDITURE

In 1999, the total grant received from the government for Development Expenditure was RM18.6 million. Of this amount, 94.15% was to finance new projects under the 7th Malaysia Plan while 5.85% was to finance projects initiated under the 6<sup>th</sup> Malaysian Plan.

The government allocation for development was 99.5% of the grant received in 1999.

JADUAL/TABLE 39

### PENDAPATAN PEMBANGUNAN DEVELOPMENT INCOME

	Tahun/Year 1999		Tahun/Year 1998	
	(RM juta)	(%)	(RM juta)	(%)
Pemberian Kerajaan Government Grants	18.6	99.20	35.6	90.33
Pendapatan Lain Other Expenditure	0.2	0.80	3.8	9.67
<b>Jumlah/Total</b>	<b>18.8</b>		<b>39.4</b>	

JADUAL/TABLE 40

### PERBELANJAAN PEMBANGUNAN DEVELOPMENT EXPENDITURE

	Tahun/Year 1999		Tahun/Year 1998	
	(RM juta)	(%)	(RM juta)	(%)
Tanah, Bangunan & Kemudahan Land, Buildings & Infrastructure	22.4	79.98	12.0	63.82
Alat Kelengkapan & Buku Equipment & Books	0.1	0.33	0.1	0.55
Mesin & Komputer Machinery & Computers	1.6	5.88	4.6	24.17
Perbelanjaan-Perbelanjaan Lain Other Expenditure	3.9	13.81	2.2	11.46
<b>Jumlah/Total</b>	<b>28.0</b>		<b>18.9</b>	

Daripada jumlah perbelanjaan pembangunan, perbelanjaan untuk tanah, bangunan dan kemudahan merupakan perbelanjaan terbesar iaitu sebanyak RM22.4 juta atau 79.98%.

Expenditure for land, building & infrastructure was the major expense item accounting for RM22.4 m or 79.98% of the total expenditure on development.

CARTA/CHART 14



### PERBELANJAAN PENYELIDIKAN IRPA (TERMASUK PROJEK GABUNGAN)

Jumlah pemberian Kerajaan bagi Perbelanjaan Penyelidikan IRPA pada tahun 1999 adalah sebanyak RM15.1 juta dengan RM2 juta telah diperuntukkan untuk membiayai projek-projek jangka pendek.

Pemberian Kerajaan merupakan sumbangan terbesar iaitu sebanyak 83.09% daripada keseluruhan jumlah pendapatan dan sebanyak 16.91% adalah pelbagai pendapatan lain.

### IRPA RESEARCH ALLOCATION (INCLUDING COLLABORATIVE PROJECTS)

For the year 1999, the total government allocation for IRPA research was RM15.1 million. Another RM2 million was reserved for short-term projects.

The government was the major contributor towards IRPA, accounting for 83.09% of the total allocation. Only 16.91% was from other sources.

JADUAL/TABLE 41

#### GERAN PENYELIDIKAN (IRPA – TERMASUK PROJEK GABUNGAN) RESEARCH GRANTS (IRPA – INCLUDING COLLABORATIVE PROJECTS)

	Tahun/Year 1999		Tahun/Year 1998	
	(RM juta)	(%)	(RM juta)	(%)
<b>Pemberian Kerajaan</b> Government Grants	15.1	83.09	29.5	89.11
<b>Pendapatan Lain</b> Other Expenditure	3.0	16.91	3.5	10.89
<b>Jumlah/Total</b>	<b>18.1</b>		<b>33.0</b>	

JADUAL/TABLE 42

#### PERBELANJAAN PENYELIDIKAN (IRPA – TERMASUK PROJEK GABUNGAN) RESEARCH EXPENDITURE (IRPA – INCLUDING COLLABORATIVE PROJECTS)

	Tahun/Year 1999		Tahun/Year 1998	
	(RM juta)	(%)	(RM juta)	(%)
<b>Bekalan &amp; Bahan-Bahan</b> Supplies & Materials	9.5	38.24	8.1	40.56
<b>Penyelenggaraan &amp; Pembaikan</b> Maintenance & Repairs	1.0	4.15	0.9	4.30
<b>Perkhidmatan Iktisas &amp; Lain-Lain</b> Professional & Other Services	8.5	34.50	8.3	41.50
<b>Aset Tetap</b> Fixed Assets	5.7	23.11	2.7	13.64
<b>Jumlah/Total</b>	<b>24.7</b>		<b>20.0</b>	

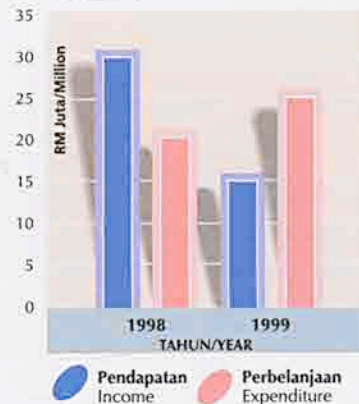
Jumlah perbelanjaan Penyelidikan IRPA untuk tahun 1999 telah meningkat sebanyak 23.74% iaitu RM24.7 juta berbanding RM20.0 juta pada tahun 1998.

The total expenditure incurred for IRPA for 1999 saw a 23.74% increase i.e. from RM20.0 million in 1998 to RM24.7 million in 1999.

CARTA/CHART 15



CARTA/CHART 16  
PERBANDINGAN PENDAPATAN DAN PERBELANJAAN IRPA  
COMPARISON BETWEEN INCOME AND EXPENDITURE FOR IRPA



## PERBELANJAAN KOLEJ KEDIAMAN

Sumber utama pendapatan Kolej Kediaman adalah daripada kutipan yuran kolej kediaman dan selebihnya hasil dari pelbagai pendapatan. Pada tahun 1999, hasil kutipan yuran telah meningkat kepada RM13.01 juta atau 36.54% berbanding RM9.53 juta pada tahun 1998. Peningkatan ini disebabkan oleh wujudnya dua kolej kediaman baru iaitu Kolej Kesepuluh dan Kolej Kesebelas.

## RESIDENTIAL COLLEGES EXPENDITURE

Collection of hostel fees was the major source of income for the Residential Colleges, with the remainder coming from other sources. In 1999, hostel fee collection increased to RM13.0 million or 36.54%, compared to RM9.53 million in 1998. This increase can be attributed to the completion and occupation of two new Colleges that is Colleges 10 and 11.

JADUAL/TABLE 43

**PENDAPATAN KOLEJ KEDIAMAN**  
INCOME OF RESIDENTIAL COLLEGES

	Tahun/Year 1999		Tahun/Year 1998	
	(RM juta)	(%)	(RM juta)	(%)
Yuran Kolej Kediaman/ Hostel Fees	13.0	82.97	9.5	83.00
Yuran Pelbagai Misc. Fees	1.1	7.21	0.5	4.56
Pendapatan Lain Other Income	1.5	9.82	1.4	12.44
<b>Jumlah/Total</b>	<b>15.6</b>		<b>11.4</b>	

JADUAL/TABLE 44

**PERBELANJAAN KOLEJ KEDIAMAN**  
EXPENDITURE OF RESIDENTIAL COLLEGES

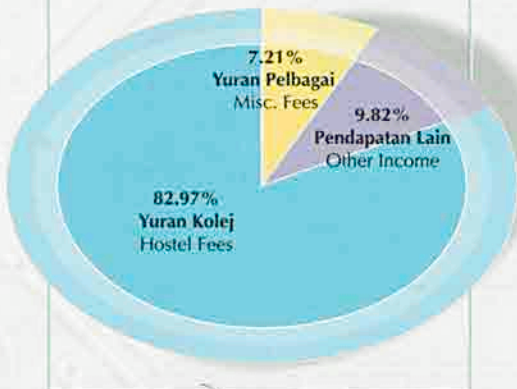
	Tahun/Year 1999		Tahun/Year 1998	
	(RM juta)	(%)	(RM juta)	(%)
Bekalan & Bahan-Bahan Supplies & Materials	5.4	47.03	3.9	49.43
Penyelenggaraan & Pembaikan Maintenance & Repairs	4.0	34.55	2.3	29.40
Perkhidmatan Iktisas & Lain-Lain Professional & Other Services	1.8	15.18	1.4	17.24
Aset Tetap Fixed Assets	0.4	3.24	0.3	3.93
<b>Jumlah/Total</b>	<b>11.6</b>		<b>7.9</b>	

Jumlah perbelanjaan mengurus Kolej Kediaman bagi tahun 1999 adalah sebanyak RM11.6 juta atau 46.84% lebih daripada jumlah perbelanjaan bagi tahun 1998 iaitu RM7.9 juta tidak termasuk emolumen yang dibiayai oleh belanja mengurus universiti. Peningkatan ini adakah disebabkan oleh perbelanjaan bagi Kolej Kediaman baru iaitu Kolej Kesepuluh dan Kolej Kesebelas.

The total operating expenditure for Residential Colleges for 1999 amounted to RM11.6 million or a 46.84% increase over the expenditure of RM7.9 million in 1998. This does take into account the amount for emolument paid through the management expenditure of the University. This increase was mainly due to the expenditure incurred on two new colleges, that is Colleges 10 and 11.

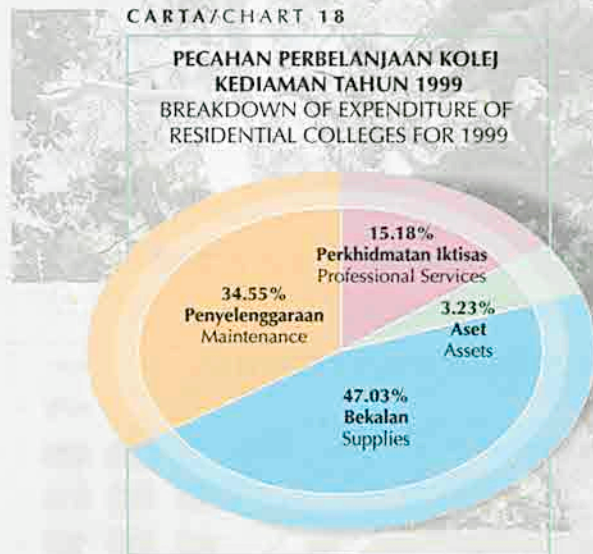
CARTA/CHART 17

**SUMBER PENDAPATAN KOLEJ KEDIAMAN TAHUN 1999**  
SOURCE OF INCOME OF RESIDENTIAL COLLEGES FOR 1999



CARTA/CHART 18

**PECAHAN PERBELANJAAN KOLEJ KEDIAMAN TAHUN 1999**  
BREAKDOWN OF EXPENDITURE OF RESIDENTIAL COLLEGES FOR 1999



## RINGKASAN KEDUDUKAN KEWANGAN DAN PRESTASI TAHUN 1999 (Setelah Diaudit) A BRIEF OVERVIEW OF FINANCIAL STATUS AND PERFORMANCE FOR THE YEAR 1999 ( Audited)

Nama Agensi / Name of Agency: **Universiti Putra Malaysia**

### Perangkaan Kewangan Yang Penting Important Financial Details

		1999 Actual (RM)	1998 (RM)	Perbezaan (%) Difference (%) + (-)
I	Pendapatan / Income			
	- Pengurusan / Operation	198,128,640	200,311,538	(1.09)
	- Pembangunan / Development	18,799,778	39,416,278	(52.30)
	- Jumlah / Total	216,928,418	239,727,816	(9.51)
II	*Perbelanjaan / Expenditure			
	- Pengurusan / Operation	198,051,796	168,373,505	17.63
	- Pembangunan / Development	27,976,166	18,946,797	47.66
	- Jumlah / Total	226,027,962	187,320,302	20.66
III	Lebih/Kurangan / Excess/Deficit			
	- Pengurusan / Operation	76,844	31,938,033	(99.76)
	- Pembangunan / Development	(9,176,388)	20,469,481	(144.83)
	- Jumlah / Total	(9,099,544)	52,407,514	(117.36)
IV	Lebih/Kurangan Terkumpul /** Cumulative Excess/Deficit			
	- Pengurusan / Operation	248,762,698	239,292,511	3.96
	- Pembangunan / Development	67,807,837	49,978,633	35.67
	- Jumlah / Total	316,570,535	289,271,144	9.44
V	Harta Tetap / Fixed Assets	231,566,118	202,905,265	14.13
VI	Harta Semasa / Current Assets	384,529,945	346,168,083	11.08
VII	Tanggungan Semasa / Current Liabilities	38,501,836	65,129,092	(40.88)
VIII	Tanggungan Jangka Panjang / Long Term Liabilities	-	-	-
IX	Harta Bersih / Net Assets	346,028,109	281,038,991	23.12
X	Nisbah Kewangan / Financial Ratio			
	- Harta Semasa/Tanggungan Semasa / - Current Assets/Current Liabilities	9.99	5.32	
	- Harta Mudah Cair/Tanggungan Semasa / Liquid Assets/Current Liabilities	8.63	4.57	
	- Jumlah Hutang/Jumlah Harta / Total Debts/Total Assets	0.08	0.09	
	- Modal Digunakan/Jumlah Tanggungan / Used-up Capital /Total Liabilities	-	-	
	- Modal Digunakan/Harta Tetap / Used-up Capital/Fixed Assets	-	-	

#### Nota/Notes:

\*Perbelanjaan meliputi bayaran untuk: / Expenditure includes payment for:

	Pengurusan / Operation	Pembangunan / Development
(i) Aset dan Inventori Barangan dan aset tidak dimodalkan / Goods and assets not capitalised	9,203,546	134,779
Aset dipermodalkan untuk tahun 1999 Assets capitalised for the year 1999	19,562,016	1,735,894
(ii) Perbelanjaan peruntukan <i>one-off</i> bagi tahun: Includes expenditure on one-off allocation for year:		
1996	1,813,355	
1998	12,074,758	
Jumlah / Total	13,888,113	

\*\*Lebih/Kurangan Terkumpul terdiri daripada: /  
Surplus /Deficit Accumulated consisting of:

(i) Pengurusan / Operation

	(RM)	(RM)
Aset Tetap / Final Assets		189,959,332
Pembinaan Dalam Kemajuan / Works In Progress		5,163,180
Aset Semasa / Current Assets		
- Pelbagai Siberhutang / Sundry Debtors	19,175,211	
- Simpanan Tetap / Fixed Deposite	70,148,311	
- Wang di tangan dan dibank / Cash in Hand and Bank	<u>6,554,346</u>	<u>95,877,868</u>
		291,000,380
Tolak: Pemiutang / Less: Creditors		<u>42,237,682</u>
		<u>248,762,698</u>

(ii) Pembangunan / Development

Pembinaan Dalam Kemajuan / Works In Progress		20,787,662
Aset Semasa / Current Assets		
- Pelbagai Siberhutang / Sundry Debtors	5,524,934	
- Simpanan Tetap / Fixed Deposits	<u>41,495,241</u>	<u>47,020,175</u>
		<u>67,807,837</u>

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**SIJIL KETUA AUDIT NEGARA MENGENAI  
AKAUN UNIVERSITI PUTRA MALAYSIA  
BAGI TAHUN BERAKHIR 31 DISEMBER 1999**

Kunci kira-kira Universiti Putra Malaysia seperti pada 31 Disember 1999, penyata pendapatan dan perbelanjaan serta penyata aliran tunai bagi tahun tersebut telah diperiksa oleh Tetuan Sahir & Co., Akauntan Awam, di bawah arahan saya. Pihak pengurusan Universiti Putra Malaysia bertanggungjawab terhadap penyata kewangan. Tanggungjawab saya adalah untuk memberi pendapat terhadap penyata kewangan tersebut berdasarkan kepada pengauditan yang dijalankan.

2. Pengauditan telah dilaksanakan mengikut Akta Audit 1957 dan berpandukan Piawaian Pengauditan Antarabangsa. Piawaian-piawaian tersebut mengkehendaki pengauditan dirancang dan dilaksanakan untuk mendapat kepastian yang munasabah sama ada penyata kewangan Universiti Putra Malaysia adalah bebas daripada kesilapan atau ketinggalan yang ketara. Pengauditan itu termasuk memeriksa rekod-rekod secara semak uji, menyemak bukti-bukti yang menyokong angka-angka dan memastikan penzahiran yang mencukupi dalam penyata kewangan. Penilaian juga dibuat terhadap prinsip-prinsip perakaunan yang digunakan dan penyampaian penyata kewangan secara keseluruhan.

**Aset Tetap RM190,699,942**  
**Pemberian Komputer Dari Kerajaan RM2,991,360**

3. Pada akhir tahun 1999, Universiti telah menerima 820 buah komputer bernilai RM2,991,360 daripada Kerajaan. Pihak Universiti tidak mengambil kira jumlah ini dalam akaun tahun 1999. Oleh itu, kedua-dua akaun tersebut di atas telah terkurang diambil kira dengan jumlah yang sama.

4. Kecuali apa yang dinyatakan oleh saya di perenggan 3 di atas, pada pendapat saya, penyata kewangan ini memberi gambaran yang benar dan saksama terhadap kedudukan kewangan Universiti Putra Malaysia pada 31 Disember 1999, hasil operasi serta aliran tunainya untuk tahun tersebut.



(HJ. AB. RAHMAN BIN MOHAMMED)  
b.p. KETUA AUDIT NEGARA

KUALA LUMPUR  
10 JULAI 2000



**PENYATA LEMBAGA PENGARAH**  
**BOARD OF DIRECTORS' STATEMENT**

Kami, DATUK RAMLY BIN AHMAD dan PROFESOR TAN SRI DATO' DR. SYED JALALUDIN BIN SYED SALIM yang merupakan Pengerusi dan salah seorang Ahli Lembaga Pengarah UNIVERSITI PUTRA MALAYSIA, dengan ini menyatakan bahawa, pada pendapat Lembaga Pengarah, Kunci Kira-kira, Penyata Pendapatan dan Perbelanjaan dan Penyata Aliran Tunai yang berikut ini berserta dengan nota-nota yang mengiringinya adalah disediakan untuk menunjukkan pandangan yang benar dan saksama berkenaan kedudukan UNIVERSITI PUTRA MALAYSIA pada 31 Disember 1999 dan hasil kendaliannya serta aliran tunai bagi tahun berakhir pada tarikh tersebut.

We, DATUK RAMLY BIN AHMAD and PROFESSOR TAN SRI DATO' DR. SYED JALALUDDIN BIN SYED SALIM, as Chairman and a Member of the Board of Directors respectively, of UNIVERSITI PUTRA MALAYSIA, hereby state that in the view of the Board of Directors, the Balance Sheet, the Statement of Income and Expenditure and Statement of Cash Flow taken together with the Notes represent a true and fair view of the financial position of UNIVERSITI PUTRA MALAYSIA as at 31 December 1999 and reflect the changes in cash flow for the year ending on the date stated.

Bagi pihak Lembaga Pengarah  
On behalf of the Board of Directors



**(DATUK RAMLY BIN AHMAD)**  
Pengerusi Lembaga Pengarah  
Chairman, Board of Directors



**(PROFESOR TAN SRI DATO' DR.  
SYED JALALUDIN BIN SYED SALIM)**  
Naib Canselor/Vice-Chancellor

Tarikh: 29 Februari 2000  
Date: 29 February 2000

UPM Serdang UPM Serdang

## AKUAN BERKANUN STATUTORY DECLARATION

Saya, NOORMAH BT. HAJI MOHAMED, pegawai utama yang bertanggungjawab ke atas pengurusan kewangan UNIVERSITI PUTRA MALAYSIA, dengan ikhlasnya mengakui bahawa Kunci Kira-Kira, Penyata Pendapatan dan Perbelanjaan dan Penyata Aliran Tunai yang berikut ini berserta dengan nota-nota yang mengiringinya, mengikut sebaik-baik pengetahuan dan kepercayaan saya, adalah betul dan saya membuat ikrar ini dengan sebenarnya mempercayai bahawa ianya itu adalah benar dan atas kehendak-kehendak Akta Akuan Berkanun, 1960.

I, NOORMAH BT HAJI MOHAMED, the principal officer responsible for the financial management of UNIVERSITI PUTRA MALAYSIA, sincerely declare that the Balance Sheet, Statement of Income and Expenditure and Cash Flow Statement that are presented here as well as the Notes included, to the best of my knowledge and belief, are accurate and I make this declaration in the belief that it is true and in accordance with the requirements of the Statutory Declaration Act 1960.

(Sebenar dan sesungguhnya  
diakui oleh penama di atas  
di Bangi pada 29 Februari 2000)

(Truly and solemnly  
declared by the above  
mentioned person at Bangi  
on 29 February 2000)



**(NOORMAH BT HAJI MOHAMED)**

(Bendahari / Bursar)

Di hadapan saya,  
In the presence of



**AHMAD DARDIRI B HL. ANUAR**

**KUNCI KIRA-KIRA PADA 31 DISEMBER 1999**  
**BALANCE SHEET AS AT 31 DECEMBER 1999**

	NOTA / NOTE	1999 RM	1998 RM
ASET TETAP/FIXED ASSETS	2	190,699,942	185,146,314
PEMBINAAN DALAM KEMAJUAN/WORKS IN PROGRESS	3	31,061,612	11,148,289
PELABURAN/INVESTMENTS	4	9,804,564	6,610,662
<b>ASET SEMASA/CURRENT ASSETS</b>			
Pelbagai Penghutang/Sundry Debtors	5	52,298,882	48,509,294
Simpanan Tetap/Fixed Deposits	6	323,500,000	247,484,898
Wang di Tangan dan di Bank /Cash in Hand and Bank	7	8,731,063	50,173,891
		<u>384,529,945</u>	<u>346,168,083</u>
<b>LIABILITI SEMASA/CURRENT LIABILITIES</b>			
Pelbagai Pemiutang/Sundry Creditors	8	38,501,836	65,129,092
		<u>38,501,836</u>	<u>65,129,092</u>
ASET SEMASA BERSIH/NET CURRENT ASSETS		346,028,109	281,038,991
		<u>577,594,227</u>	<u>483,944,256</u>
Dibiayai oleh: / Financed by:			
Kumpulanwang Am Terkumpul / General Accumulated Fund	9	248,762,698	239,292,511
Kumpulanwang Kolej Kediaman / Residential College Fund	10	18,918,136	13,304,465
Kumpulanwang Pembangunan / Development Fund	11	67,807,837	49,978,633
Kumpulanwang Tabung Penyelidikan / Research Fund	12	39,372,329	44,541,140
Kumpulanwang Tabung Pusingan / Revolving Fund	13	5,161,623	4,773,359
Kumpulanwang Amanah Lain / Other Trust Fund	14	58,600,157	23,261,316
Kumpulanwang Penginapan & Rekreasi / Accommodation & Recreation Fund	15	5,539,203	5,805,236
Kumpulanwang Pelaburan / Investment Fund	16	81,899,551	67,181,456
Kumpulanwang Kursus, Seminar, Konferensi dan Lawatan Sambil Belajar / Course, Seminar, Conference and Study Visit Fund	17	36,532,693	20,806,140
Kumpulanwang Pinjaman Komputer dan Pinjaman Kenderaan / Computer and Vehicle Loan Fund	18	15,000,000	15,000,000
<b>JUMLAH KUMPULANWANG / TOTAL FUNDS</b>		<u>577,594,227</u>	<u>483,944,256</u>

Sila lihat nota-nota yang mengiringi akaun-akaun ini.  
 The Accounts are to be read with accompanying Notes.

**PENYATA PENDAPATAN DAN PERBELANJAAN BAGI TAHUN BERAKHIR 31 DISEMBER 1999**  
**STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 31 DECEMBER 1999**

	NOTA / NOTE	1999 RM	1998 RM
<b>PENDAPATAN / INCOME</b>			
Pemberian Kerajaan / Government Grants		200,162,978	234,705,261
Pelbagai Yuran/ Fees		101,674,219	60,700,056
Sumbangan Luar / Contributions		13,937,983	21,674,602
Faedah dan Keuntungan Saham / Interest & Share Proceeds		23,259,348	23,570,639
Jualan Aset / Sale of Assets		82,446	0
Pampasan Tanah / Land Compensation		16,548,321	0
Pengurangan Peruntukan Rosotnilai Saham / Less Provision for Diminution of Shares		2,840,328	0
Pelbagai Sewa / Sundry Rentals		737,746	728,121
Pendapatan Ladang / Income from Farm Operations		0	381,512
Pelbagai Pendapatan / Miscellaneous Income		25,608,139	18,919,750
		<b>384,851,508</b>	<b>360,679,941</b>
<b>TOLAK: PERBELANJAAN / LESS: EXPENDITURE</b>			
Emolumen / Emoluments		124,091,000	115,206,891
Perjalanan / Travel		4,294,279	3,802,421
Pengangkutan / Transportation		136,464	167,463
Perhubungan / Communication		1,018,096	882,171
Utiliti / Utilities		10,541,614	8,152,301
Sewaan / Rentals		3,216,328	3,028,674
Bekalan dan Bahan-bahan / Supplies		32,099,479	27,700,108
Penyelenggaraan dan Pembaikan / Maintenance & Repair		17,841,049	12,177,649
Perkhidmatan Iktisas dan Hospitaliti / Professional & Hospitality Services		51,152,206	40,033,204
Pemberian dan Kenaan Bayaran Tetap / Grants & Fixed Payments		7,695,841	9,618,438
Perbelanjaan-perbelanjaan Lain / Other Expenses		1,750,803	2,329,352
Susutnilai / Depreciation	2	25,547,051	23,897,525
Pelupusan Aset Tetap / Fixed Assets Written-off		67,276	2
Pelunasan Tanah / Amortization of Land	2	92,130	92,889
Hutang Lapuk / Bad Debts		10,763,477	226,267
Peruntukan Rosotnilai Saham / Provision for Diminution of Shares		0	1,215,224
		<b>290,307,093</b>	<b>248,530,579</b>
<b>LEBIHAN PENDAPATAN / SURPLUS INCOME</b>			
<b>KUMPULANWANG TERKUMPUL</b>			
<b>DIBAWA KE HADAPAN / BALANCE OF ACCUMULATED FUND BROUGHT FORWARD</b>			
- Seperti yang Dinyatakan Terdahulu / As Previously Stated		483,944,256	370,466,624
- Pelarasan Tahun Lalu / Prior Year Adjustment	20	(894,444)	1,328,270
		<b>483,049,812</b>	<b>371,794,894</b>
<b>KUMPULANWANG TERKUMPUL DIHANTAR KE HADAPAN/ BALANCE OF ACCUMULATED FUND CARRIED FORWARD</b>			
		<b>577,594,227</b>	<b>483,944,256</b>

Sila lihat nota-nota mengiringi akaun-akaun ini  
 The Accounts are to be read with accompanying Notes

**PENYATA ALIRAN TUNAI BAGI TAHUN BERAKHIR 31 DISEMBER 1999**  
**CASH FLOW STATEMENT FOR THE YEAR ENDED 31 DECEMBER 1999**

	NOTA / NOTE	1999 RM	1998 RM
<b>TUNAI DARI AKTIVITI OPERASI /</b>			
<b>CASH GENERATED FROM OPERATING ACTIVITIES</b>			
Lebih Pendapatan / Surplus Income		94,544,415	112,149,362
<b>Pelarasan ke Atas: / Adjustments to:</b>			
Susutnilai / Depreciation		25,547,051	23,897,525
Pelunasan Tanah / Amortization		92,130	92,889
Untung Atas Jualan Aset Tetap / Profit / Incurred from Sale of Fixed Assets		(70,741)	(316,388)
Untung Atas Pampasan Tanah / Profits of Land Compensation		(16,492,750)	0
(Keuntungan)/Rugi atas Jualan Saham / (Profit)/Losses Incurred from Sale of Shares		(150,078)	1,468,692
Peruntukan Rosotnilai Saham / Provision for Diminution in Value of Shares		(2,840,328)	1,215,224
		<hr/>	<hr/>
<b>Keuntungan Operasi Sebelum Perubahan Modal Kerja /</b>		100,629,699	138,507,304
<b>Operating Profits Prior to Working Capital Adjustments</b>			
(Penambahan)/Pengurangan Penghutang / (Increase) (Decrease in Debtors)		(3,789,588)	(20,799,170)
Penambahan/(Pengurangan)Pemiutang / Increase (Decrease) in Creditors		(26,627,256)	32,753,073
Pelarasan Akaun / Adjustment to Accounts	20	(894,444)	1,328,270
		<hr/>	<hr/>
<b>Tunai Bersih Dihasilkan dari Aktiviti Operasi /</b>		69,318,411	151,789,477
<b>Cash Generated from Operating Activities</b>		<hr/>	<hr/>
<b>TUNAI DARI AKTIVITI PELABURAN / CASH GENERATED FROM INVESTMENT ACTIVITIES</b>			
Pembelian Aset Tetap / Purchase of Fixed Assets		(31,260,086)	(51,960,685)
Pembinaan dalam Kemajuan / Works in Progress		(19,913,323)	15,248,292
Jualan Aset Tetap / Sale of Fixed Assets		82,446	316,390
Pampasan Tanah / Land Compensation		16,548,321	0
Jualan Saham / Sale of Shares		6,219,388	8,887,992
Pembelian Saham / Purchase of Shares		(6,422,883)	(9,113,591)
		<hr/>	<hr/>
<b>Tunai Bersih Dihasilkan dari Aktiviti Pelaburan /</b>		(34,746,137)	(36,621,602)
<b>Cash Generated from Investment Activities</b>		<hr/>	<hr/>
Penambahan Bersih Dalam Jumlah Tunai dan Kesetaraan Tunai/ Net Increase in Cash and Cash Equivalents		34,572,274	115,167,875
Jumlah Tunai dan Kesetaraan Pada Awal Tahun / Cash and Cash Equivalents at Beginning of Year		297,658,789	182,490,914
Jumlah Tunai dan Kesetaraan Pada Akhir Tahun / Cash and Cash Equivalents at End of Year		<hr/>	<hr/>
		332,231,063	297,658,789
		<hr/>	<hr/>
<b>Tunai dan Kesetaraan Tunai Diwakili Oleh: / Cash and Cash Equivalents represented by:</b>			
Simpanan Tetap / Fixed Deposit		323,500,000	247,484,898
Wang di Tangan dan di Bank / Cash in Hand and Bank	7	8,731,063	50,173,891
		<hr/>	<hr/>
		332,231,063	297,658,789
		<hr/>	<hr/>

Sila lihat nota-nota yang mengiringi akaun-akaun ini

To be read with accompanying Notes

**1. DASAR-DASAR PERAKAUNAN PENTING / ACCOUNTING POLICY**

**(a) Am / General**

Semua dasar perakaunan adalah bersamaan dengan dasar-dasar yang digunakan pada tahun lalu.  
 All accounting policies are similar to those used in previous years.

**(b) Asas Perakaunan / Basis of Accounting**

Penyediaan akaun-akaun adalah mengikut konvensyen kos sejarah.  
 The Accounts were prepared according to the historical cost convention.

**(c) Pengiktirafan Pendapatan / Recognition of Income**

Pendapatan diiktiraf atas dasar akruan.  
 Income is recognised on an accrual basis.

**(d) Hutang Lapuk dan Hutang Ragu / Bad Debts & Doubtful Debts**

Peruntukan dibuat bagi hutang lapuk yang dikenali berdasarkan kepada penyemakan akhir tahun ke atas hutang yang belum dapat dipungut.  
 Provision is made for bad debts based on a year—end appraisal of debts that have not been recovered.

**(e) Aset tetap dan Susutnilai / Fixed Assets and Depreciation**

Aset tetap dinyatakan pada kos setelah ditolak susutnilai dan didefinisikan sebagai barang-barang takluak yang mempunyai tempoh penggunaan ekonomik yang lebih daripada 12 bulan yang bernilai RM3,000 atau lebih setiap satu.  
 Fixed assets are stated at cost after deduction of depreciation, and are defined as tangible assets that have an economic usage of more than 12 months, and are valued at or more than RM3,000 each.

Tanah dipermodalkan mulai tahun 1993. Susutnilai tidak diperuntukkan bagi tanah milik bebas manakala tanah pajakan dilunaskan mengikut jangkamasa pajakan.  
 Land has been capitalised from the year 1993. Depreciation is not allocated for freehold land whereas leasehold is amortized according to the mortgaged period.

Bagi kesemua aset yang lain, susutnilai dikira berasaskan kaedah garis lurus ke atas anggaran hayat kegunaan aset berkenaan. Kadar susutnilai tahunan utama adalah seperti berikut:

For all other assets, depreciation is calculated based on straight line method over their estimated useful lives. The annual depreciation rates are as follows:

	(%)
Bangunan/Buildings	2
Bangunan tidak kekal / Temporary Buildings	10
Infrastruktur dan kemudahan / Infrastructure and Facilities	5
Kenderaan dan jentera / Vehicles & Machinery	20
Perabot dan kelengkapan / Furniture & Fittings	20
Mesin dan komputer / Machinery & Computers	20

**(f) Pembinaan Dalam Kemajuan / Works in Progress**

Pembinaan dalam kemajuan seperti bangunan yang sedang dibina dinilai mengikut kos dan susutnilai tidak diperuntukkan. Apabila siap, kos pembinaan dipindahkan ke aset tetap yang berkenaan.

In the case of buildings under construction, they are valued at cost and no provision is made for depreciation. On completion, the cost of construction is transferred to the relevant fixed asset.

**(g) Pelaburan / Investment**

Pelaburan dinyatakan pada kos ditolak rosotan nilai pelaburan berkenaan yang kekal.  
 Investment is stated at cost less the depreciation value of a permanent investment.

## 2. ASET TETAP / FIXED ASSETS

	Pada awal tahun Beginning of Year RM	Pindahan/ tambahan Transfers/ Increase RM	Penjualan/ pelupusan Sales/ Write-off RM	Pada akhir tahun Year- end RM	Nilai Buku Bersih Net Book Value RM
<b>1999</b>					
<b>KOS/COST</b>					
Tanah pajakan / Leased Land	8,739,246	0	(75,165)	8,664,081	
Tanah milik kekal / Freehold Land	8,962,151	0	0	8,962,151	
Bangunan / Buildings	129,658,316	1,673,256	(15,000)	131,316,572	
Infrastruktur dan kemudahan / Infrastructure & Facilities	18,990,906	413,320	0	19,404,226	
Kenderaan dan jentera / Vehicles & Machinery	11,536,683	2,555,861	(368,412)	13,724,132	
Perabot dan Kelengkapan / Furniture & Fittings	7,282,109	1,440,402	0	8,722,511	
Mesin dan komputer / Machinery & Computers	162,346,886	25,177,247	0	187,524,133	
	<b>347,516,297</b>	<b>31,260,086</b>	<b>(458,577)</b>	<b>378,317,806</b>	
<b>SUSUTNILAI TERKUMPUL / ACCUMULATED DEPRECIATION</b>					
Tanah pajakan / Leased Land	2,134,452	92,130	(19,593)	2,206,989	6,457,092
Tanah milik kekal / Freehold Land	0	0	0	0	8,962,151
Bangunan / Buildings	12,816,237	2,759,420	(3,300)	15,572,357	115,744,215
Infrastruktur dan kemudahan / Infrastructure & Facilities	3,514,901	1,277,959	0	4,792,860	14,611,366
Kenderaan dan jentera / Vehicle & Machinery	9,308,564	1,269,417	(368,407)	10,209,574	3,514,558
Perabot dan kelengkapan / Furniture & Fittings	4,947,363	997,471	0	5,944,834	2,777,677
Mesin dan komputer / Machinery & Computers	129,648,466	19,242,784	0	148,891,250	38,632,883
	<b>162,369,983</b>	<b>25,639,181</b>	<b>(391,300)</b>	<b>187,617,864</b>	<b>190,699,942</b>

Termasuk di dalam tambahan harta tetap adalah sejumlah RM1,411,911 (1998: RM32,999,935) yang merupakan pindahan dari pembinaan dalam kemajuan yang telah siap dalam tahun semasa.

Included are the increase in fixed assets totaling RM1,411,911 (1998: RM32,999,935) which represents transfers from completed Works in Progress during the Current Year.

	Pada awal tahun Beginning of Year RM	Pindahan/ tambahan Transfers/ Increase RM	Penjualan/ pelupusan Sales/ Write-off RM	Pada akhir tahun Year- end RM	Nilai Buku Bersih Net Book Value RM
<b>1998</b>					
<b>KOS/COST</b>					
Tanah pajakan / Leased Land	8,739,246	0	0	8,739,246	
Tanah milik kekal / Freehold Land	8,962,151	0	0	8,962,151	
Bangunan / Buildings	98,356,332	31,301,984	0	129,658,316	
Infrastruktur dan kemudahan / Infrastructure & Facilities	17,136,930	1,853,976	0	18,990,906	
Kenderaan dan jentera / Vehicles & Machinery	14,504,293	276,514	(3,244,124)	11,536,683	
Perabot dan kelengkapan / Furniture & Fittings	5,791,904	1,490,205	0	7,282,109	
Mesin dan komputer / Machinery & Computers	145,308,881	17,038,005	0	162,346,886	
	<b>298,799,737</b>	<b>51,960,684</b>	<b>(3,244,124)</b>	<b>347,516,297</b>	

**SUSUTNILAI TERKUMPUL / ACCUMULATED DEPRECIATION**

Tanah pajakan / Leased Land	2,041,563	92,889	0	2,134,452	6,604,794
Tanah milik kekal / Freehold Land	0	0	0	0	8,962,151
Bangunan / Buildings	10,102,707	2,713,530	0	12,816,237	116,842,079
Infrastruktur dan kemudahan / Infrastructure & Facilities	2,297,099	1,217,802	0	3,514,901	15,476,005
Kenderaan dan jentera / Vehicle & Machinery	11,224,004	1,328,682	(3,244,122)	9,308,564	2,228,119
Perabot dan kelengkapan / Furniture & Fittings	4,114,379	832,984	0	4,947,363	2,334,746
Mesin dan komputer / Machinery & Computers	111,843,939	17,804,527	0	129,648,466	32,698,420
	<b>141,623,691</b>	<b>23,990,414</b>	<b>(3,244,122)</b>	<b>162,369,983</b>	<b>185,146,314</b>

### 3. PEMBINAAN DALAM KEMAJUAN / WORKS IN PROGRESS

	Pada awal		Pelarasan Adjustment	Pindahan Transfers	Pada akhir
	Tahun Beginning of Year	Tambahan Increase			Tahun Year- end
1999	RM	RM	RM	RM	RM
Bangunan /Buildings	1,529,635	15,447,834	0	1,411,911	15,565,558
Kemudahan Riadah / Recreation Facilities	7,780,817	1,260,200	0	0	9,041,017
Lain-lain / Others	1,837,837	4,617,200	0	0	6,455,037
	<u>11,148,289</u>	<u>21,325,234</u>	<u>0</u>	<u>1,411,911</u>	<u>31,061,612</u>

#### 1998

Bangunan / Buildings	21,050,727	11,674,317	0	31,195,409	1,529,635
Kemudahan Riadah / Recreation Facilities	4,465,884	1,837,674	3,281,785	1,804,526	7,780,817
Lain-lain / Others	879,970	1,039,151	0	81,284	1,837,837
	<u>26,396,581</u>	<u>14,551,142</u>	<u>3,281,785</u>	<u>33,081,219</u>	<u>11,148,289</u>

Pada tahun semasa pembinaan dalam kemajuan sebanyak RM1,411,911 (RM32,999,935) telah dipindahkan ke aset tetap dan sebanyak RM0 (RM81,284) telah dipindahkan ke inventori.

In current year Works in Progress totaling RM1,411,911 (RM32,999,935) was transferred to Fixed Assets and RM0 (RM81,284) was transferred to Inventory.

### 4. PELABURAN / INVESTMENTS

	1999 RM	1998 RM
Pelaburan Tersiarharga - di Malaysia, pada kos / Quoted price of Investment - in Malaysia, at Cost	10,942,988	10,889,414
Tolak: Peruntukan Rosot/nilai Pelaburan / Less: Provision for Diminution of Investment	(1,438,424)	(4,278,752)
Nilai Pasaran Pelaburan Tersiarharga - di Malaysia / Market Value of Quoted Price of Investment - in Malaysia	<u>9,504,564</u>	<u>6,610,662</u>
Campur: Pelaburan Tidak Tersiarharga - di Malaysia / Plus Non-quoted Investment - in Malaysia	300,000	0
	<u>9,804,564</u>	<u>6,610,662</u>

**5. PELBAGAI PENGHUTANG / SUNDRY DEBTORS**

	<b>1999</b>	<b>1998</b>
	<b>RM</b>	<b>RM</b>
Kumpulanwang Am / General Fund	22,249,934	34,040,710
Kumpulanwang Kolej Kediaman / Residential College Fund	2,004,020	2,374,616
Kumpulanwang Pembangunan / Development Fund	5,524,934	0
Kumpulanwang Kursus, Seminar, Konferensi / Course, Seminar & Conference Fund	19,489,938	118,391
Kumpulanwang Pinjaman Kenderaan / Vehicle Loan Fund	11,717,749	10,499,893
Kumpulanwang Pelaburan / Investment Fund	1,753,186	1,079,326
Kumpulanwang Pinjaman Komputer / Computer Loan Fund	1,307,207	<u>1,387,519</u>
	64,046,968	49,500,455
Tolak : Peruntukan Hutang Ragu / Less: Provision for Doubtful Debts	11,748,086	991,161
	<u>52,298,882</u>	<u>48,509,294</u>

Jumlah pelbagai penghutang tidak termasuk hutang denda pecah kontrak perkhidmatan UPM. Sehingga 31 Disember 1999, jumlah denda tersebut adalah RM1,688,439 (RM1,654,383).  
The total debts does not include the fines for breach of service contracts with UPM. As at 31 December 1999, total value of fines is RM1,688,439 (RM1,654,383).

Angka-angka pelbagai penghutang adalah nilai bersih setelah diselaraskan dalam proses penyatuan item-item kontra antara akaun-akaun penghutang dan pemiutang.  
The amount owed to UPM is computed as the net value less adjustments to balance the contra items in the accounts of the Debtors and the Creditors.

**6. SIMPANAN TETAP / FIXED DEPOSITS**

	<b>1999</b>	<b>1998</b>
	<b>RM</b>	<b>RM</b>
Simpanan dengan institusi kewangan berlesen: Deposits with Licensed Financial Institutions:		
Bank / Bank	221,900,000	163,384,898
Syarikat Kewangan / Financial Institutions	101,600,000	84,100,000
	<u>323,500,000</u>	<u>247,484,898</u>

**7. WANG DI TANGAN, DI BANK DAN DALAM PERJALANAN / CASH IN HAND, BANK & TRANSIT**

	<b>1999</b> RM	<b>1998</b> RM
<b>Wang di tangan: / Cash in Hand:</b>		
Kumpulanwang Am / General Fund	56,306	56,873
Kumpulanwang Kolej Kediaman / Residential College Fund	8,057	8,000
	<b>64,363</b>	<b>64,873</b>
<b>Wang di bank: / Cash at Bank</b>		
Kumpulanwang Am / General Fund	6,498,040	48,232,174
Kumpulanwang Kolej Kediaman / Residential College Fund	1,953,566	1,672,808
	<b>8,451,606</b>	<b>49,904,982</b>
<b>Wang dalam perjalanan: / Cash in Transit</b>		
Kumpulanwang Am / General Fund	0	154,889
Kumpulanwang Kolej Kediaman / Residential College Fund	215,094	49,147
	<b>215,094</b>	<b>204,036</b>
<b>Jumlah wang di tangan dan di bank / Cash in Hand and Bank</b>	<b>8,731,063</b>	<b>50,173,891</b>

**8. PELBAGAI PEMIUTANG / SUNDRY CREDITORS**

	<b>1999</b> RM	<b>1998</b> RM
Kumpulanwang Am / General Fund	36,752,178	64,852,616
Kumpulanwang Kolej Kediaman / Residential College Fund	1,749,658	276,476
	<b>38,501,836</b>	<b>65,129,092</b>

Angka-angka pelbagai pemiutang adalah nilai bersih setelah diselaraskan dalam proses penyatuan item-item kontra antara akaun-akaun penghutang dan pemiutang.

The amount in Sundry Creditors represents the net value less adjustments to the contra items of the Debtors and Creditors Accounts.

## 9. KUMPULANWANG AM / GENERAL FUND

	1999 RM	1998 RM
<b>PENDAPATAN / INCOME</b>		
Pemberian Kerajaan / Government Grants	158,435,607	167,316,608
Pelbagai Yuran / Miscellaneous Fees	38,337,135	30,854,833
Pelbagai Sewa / Sundry Rentals	278,303	264,061
Jualan Aset Tetap / Fixed Asset Sales	82,446	0
Pendapatan Ladang / Income from Farm Operations	0	381,511
Pendapatan-pendapatan Lain / Other Income	995,149	1,494,525
	<u>198,128,640</u>	<u>200,311,538</u>
<b>TOLAK : PERBELANJAAN / LESS: EXPENDITURE</b>		
Emolumen / Emoluments	124,028,022	115,049,117
Perjalanan / Travel	1,501,776	1,052,921
Pengangkutan / Transportation	119,536	162,807
Perhubungan / Communication	725,283	650,814
Utiliti / Utilities	7,254,857	6,287,267
Sewaan / Rentals	1,802,170	1,693,807
Bekalan dan Bahan-bahan / Supplies & Materials	17,735,582	13,145,740
Penyelenggaraan dan Pembaikan / Maintenance & Repairs	10,425,519	7,171,576
Perkhidmatan Iktis dan Hospitaliti / Professional & Hospitality Services	10,822,517	9,025,600
Pemberian dan Kenaan Bayaran Tetap / Grants & Fixed Payments	2,440,224	3,236,551
Perbelanjaan-perbelanjaan Lain / Other Expenses	1,634,293	1,578,059
Susutnilai / Depreciation	25,261,803	23,665,551
Pelupusan Aset Tetap / Fixed Assets Written-off	11,705	2
Pelunasan Tanah / Amortization of Land	92,130	92,889
Hutang Lapuk / Bad Debts	564,107	133,934
Pindahan Peruntukan Antara Kumpulanwang / Transfers between Funds	0	35,000
	<u>204,419,524</u>	<u>182,981,635</u>
(KURANGAN)/LEBIHAN PENDAPATAN / (DEFICIT)/SURPLUS INCOME	(6,290,884)	17,329,903
<b>BAKI KUMPULANWANG DIBAWA KE HADAPAN / BALANCE OF FUND BROUGHT FORWARD</b>		
- Seperti yang Dinyatakan Terdahulu / As Previously Stated	239,292,511	178,652,318
- Pelarasan Tahun Lalu/ Prior Year Adjustment	(81,871)	488,641
	<u>239,210,640</u>	<u>179,140,959</u>
<b>Pindahan dari/(ke): / Transfers from/(to):</b>		
Kumpulanwang Pembangunan / Development Fund	3,605,626	36,047,935
Kumpulanwang Tabung Penyelidikan / Research Fund	6,071,699	4,945,334
Kumpulanwang Amanah Lain / Other Funds	1,893,117	1,343,080
Kumpulanwang Pelaburan / Investment Fund	4,772,500	485,300
Kumpulanwang Kolej Kediaman / Residential College Fund	(500,000)	0
	<u>248,762,698</u>	<u>239,292,511</u>
<b>BAKI KUMPULANWANG DIHANTAR KE HADAPAN / BALANCE CARRIED FORWARD</b>		

## 10. KUMPULANWANG KOLEJ KEDIAMAN / RESIDENTIAL COLLEGE FUND

	1999 RM	1998 RM
<b>PENDAPATAN / INCOME</b>		
Yuran Kolej Kediaman / Residential Fees	13,006,098	9,525,675
Yuran-yuran Lain / Miscellaneous Fees	2,592,434	523,776
Faedah / Interest	822,187	764,630
Sewa / Rental	65,526	63,590
Pendapatan-pendapatan Lain / Other Income	651,329	1,484,408
	<u>17,137,574</u>	<u>12,362,079</u>
<b>TOLAK : PERBELANJAAN / LESS: EXPENDITURE</b>		
Perjalanan / Transport	61,422	22,136
Perhubungan / Communication	32,630	34,156
Utiliti / Utilities	2,839,251	1,511,433
Sewaan / Rental	615,935	243,442
Bekalan dan Bahan-bahan / Supplies & Materials	1,844,340	2,097,183
Penyelenggaraan dan Pembaikan / Maintenance & Repairs	4,286,004	2,321,243
Perkhidmatan Iktis dan Hospitaliti / Professional & Hospitality Services	1,975,652	1,426,375
Perbelanjaan-perbelanjaan Lain / Other Expenditure	11,258	145,519
Susutnilai / Depreciation	285,248	231,974
Hutang Lapuk / Bad Debts	140,913	92,333
	<u>12,092,653</u>	<u>8,125,794</u>
LEBIHAN PENDAPATAN / SURPLUS INCOME	5,044,921	4,236,285
BAKI KUMPULANWANG DIBAWA KE HADAPAN / BALANCE BROUGHT FORWARD		
- Seperti yang Dinyatakan Terdahulu / As Previously Stated	13,304,465	8,894,295
- Pelarasan Tahun Lalu / Prior Year Adjustment	68,750	173,885
	<u>13,373,215</u>	<u>9,068,180</u>
- Seperti yang Dinyatakan Semula / As Re-stated		
Pindahan dari: / Transfers from:		
Kumpulanwang Am / General Fund	500,000	0
	<u>18,918,136</u>	<u>13,304,465</u>
BAKI KUMPULANWANG DIHANTAR KE HADAPAN / BALANCE CARRIED FORWARD		

## 11. KUMPULANWANG PEMBANGUNAN / DEVELOPMENT FUND

	1999 RM	1998 RM
<b>PENDAPATAN / INCOME</b>		
Pemberian Kerajaan / Government Grants	18,649,400	35,606,000
Sumbangan Luar / Other Donations	141,728	3,626,241
Pendapatan-pendapatan Lain / Other Income	8,650	184,037
	<u>18,799,778</u>	<u>39,416,278</u>
<b>TOLAK: PERBELANJAAN / LESS: EXPENDITURE</b>		
Emolumen / Emoluments	46,917	58,800
Bekalan dan Bahan-bahan / Supplies & Materials	140,187	786,941
Penyelenggaraan dan Pembaikan / Maintenance & Repairs	577,691	133,814
Perkhidmatan Iktisas dan Hospitaliti / Professional & Hospitality Services	3,100,153	1,206,491
	<u>3,864,948</u>	<u>2,186,046</u>
LEBIHAN PENDAPATAN / SURPLUS INCOME	14,934,830	37,230,232
BAKI KUMPULANWANG DIBAWA KE HADAPAN / BALANCE BROUGHT FORWARD		
- Seperti yang Dinyatakan Terdahulu / As Previously Stated	49,978,633	44,743,537
- Pelarasan Tahun Lalu / Prior Year Adjustment	0	3,350,491
	<u>49,978,633</u>	<u>48,094,028</u>
- Seperti yang Dinyatakan Semula / As Re-stated	49,978,633	48,094,028
Pindahan dari/(ke): / Transfers from/(to):		
Kumpulanwang Am / General Fund	(3,605,626)	(36,047,935)
Kumpulanwang Pelaburan / Investment Fund	6,500,000	702,308
	<u>67,807,837</u>	<u>49,978,633</u>
BAKI KUMPULANWANG DIHANTAR KE HADAPAN / BALANCE CARRIED FORWARD		

## 12. KUMPULANWANG TABUNG PENYELIDIKAN / RESEARCH FUND

	1999 RM	1998 RM
<b>PENDAPATAN/INCOME</b>		
Pemberian Kerajaan / Government Grants	15,069,971	30,416,518
Pelbagai Yuran / Miscellaneous Fees	44,822	51,196
Sumbangan / Other Donations	8,735,525	9,631,008
Sumbangan Universiti / University Donations	140,000	160,000
Faedah Simpanan Tetap / Interest from Fixed Deposits	4,380	9,653
Pelbagai Sewa / Rental	19,976	103,969
Pendapatan-pendapatan Lain / Other Income	2,016,071	2,239,267
	<hr/> 26,030,745	<hr/> 42,611,611
<b>TOLAK: PERBELANJAAN/LESS: EXPENDITURE</b>		
Emolumen / Emoluments	1,707	33,333
Perjalanan / Travel	1,575,673	1,686,056
Pengangkutan / Transport	6,315	3,731
Perhubungan dan Utiliti / Communication & Utilities	85,698	153,909
Sewaan / Rentals	370,589	357,564
Bekalan dan Bahan-bahan / Supplies & Materials	9,386,559	9,346,410
Penyelenggaraan dan Pembaikan / Maintenance & Repairs	1,147,859	1,120,593
Perkhidmatan Iktis dan Hospitaliti / Professional & Hospitality Services	12,480,607	11,537,447
Perbelanjaan-perbelanjaan Lain / Other Expenditure	32,633	473,696
Pindahan Pusatkos untuk Belian Aset Tetap / Transfers from Costcentres for Acquisition of Fixed Assets	55,297	0
	<hr/> 25,142,937	<hr/> 24,712,739
<b>LEBIHAN PENDAPATAN/SURPLUS INCOME</b>	887,808	17,898,872
<b>BAKI KUMPULANWANG DIBAWA KE HADAPAN / BALANCE BROUGHT FORWARD</b>		
- Seperti Yang Dinyatakan Terdahulu / As Previously Stated	44,541,140	32,552,403
- Pelarasan Tahun Lalu / Prior Year Adjustment	6,000	(964,801)
	<hr/> 44,547,140	<hr/> 31,587,602
- Seperti Yang Dinyatakan Semula / As Re-stated		
Pindahan (Ke): / Transfers (to):		
Kumpulanwang Am / General Fund	(6,016,402)	(4,945,334)
Kumpulanwang Amanah Lain / Other Trust Fund	(17,720)	0
Kumpulanwang Seminar & Konferensi / Seminar & Conference Fund	(28,497)	0
	<hr/> 39,372,329	<hr/> 44,541,140
<b>BAKI KUMPULANWANG DIHANTAR KE HADAPAN / BALANCE CARRIED FORWARD</b>		

### 13. KUMPULANWANG TABUNG PUSINGAN / REVOLVING FUND

	1999 RM	1998 RM
<b>PENDAPATAN / INCOME</b>		
Pelbagai Yuran / Fees	176,450	241,289
Sumbangan / Contributions	35,733	176,821
Faedah Simpanan Tetap / Interest from Fixed Deposits	207,298	824,355
Pendapatan-pendapatan Lain / Other Income	323,189	443,876
	<u>742,670</u>	<u>1,686,341</u>
<b>TOLAK: PERBELANJAAN / LESS: EXPENDITURE</b>		
Perjalanan / Travel	11,756	12,680
Perhubungan dan Utiliti / Communication & Utilities	4,603	4,186
Sewaan /Rental	11,306	6,725
Bekalan dan Bahan-bahan / Supplies & Materials	137,693	198,318
Penyelenggaraan dan Pembaikan / Maintenance & Repairs	56,111	53,253
Perkhidmatan Iktisas dan Hospitality / Professional & Hospitality Services	896,511	625,249
	<u>1,117,980</u>	<u>900,411</u>
<b>(KURANGAN)/LEBIHAN PENDAPATAN / (DEFICIT) SURPLUS INCOME</b>	<b>(375,310)</b>	<b>785,930</b>
<b>BAKI KUMPULANWANG DIBAWA KE HADAPAN</b>		
<b>BALANCE BROUGHT FORWARD</b>		
- Seperti Yang Dinyatakan Terdahulu / As Previously Stated	4,773,359	4,705,694
- Pelarasan Tahun Lalu / Prior Year Adjustment	0	(651,891)
	<u>4,773,359</u>	<u>4,053,803</u>
<b>Pindahan Dari/(Ke): / Transfer from/(to):</b>		
Kumpulanwang Am / General Fund	(69,431)	(66,374)
Kumpulanwang Pelaburan / Investment Fund	833,005	0
<b>BAKI KUMPULANWANG DIHANTAR KE HADAPAN /</b>	<b>5,161,623</b>	<b>4,773,359</b>
<b>BALANCE CARRIED FORWARD</b>	<u>5,161,623</u>	<u>4,773,359</u>

#### 14. KUMPULANWANG AMANAH LAIN / OTHER TRUST FUNDS

	1999 RM	1998 RM
<b>PENDAPATAN / INCOME</b>		
Pemberian Kerajaan / Government Grants	8,008,000	1,366,135
Pelbagai Yuran / Miscellaneous Fees	10,672,931	6,382,300
Sumbangan / Contributions	3,283,042	5,359,514
Faedah Simpanan Tetap / Interest from Fixed Deposits	381,186	759,172
Pelbagai Sewa / Rental	72,291	76,957
Pampasan Tanah / Land Compensation	16,548,321	0
Pendapatan-pendapatan Lain / Other Income	15,686,000	5,750,296
	<u>54,651,771</u>	<u>19,694,374</u>
<b>TOLAK: PERBELANJAAN / LESS: EXPENDITURE</b>		
Emolumen / Emoluments	7,112	3,521
Perjalanan / Travel	452,431	221,818
Perhubungan / Communication	68,326	53,169
Utiliti / Utilities	58	3,241
Sewaan / Rental	163,109	408,881
Bekalan dan Bahan-bahan / Supplies & Materials	1,160,793	1,086,839
Penyelenggaraan dan Pembaikan / Maintenance & Repairs	399,268	244,844
Perkhidmatan Iktis dan Hospitaliti / Professional & Hospitality Services	10,439,377	9,287,145
Pemberian dan Kenaan Bayaran Tetap / Grants & Fixed Payments	5,227,472	6,381,887
Perbelanjaan-perbelanjaan lain / Other Expenditure	18,355	30,167
Hutang Lapuk / Bad Debts	72,452	0
Pelupusan Tanah / Land Written-off	55,571	0
Pindahan Peruntukan Antara Kumpulanwang / Transfers Between Funds	96,000	0
	<u>18,160,324</u>	<u>17,721,512</u>
<b>LEBIHAN PENDAPATAN/SURPLUS INCOME</b>	<b>36,491,447</b>	<b>1,972,862</b>
<b>BAKI KUMPULANWANG DIBAWA KE HADAPAN / BALANCE BROUGHT FORWARD</b>		
- Seperti Yang Dinyatakan Terdahulu / As Previously Stated	23,261,316	22,402,052
- Pelarasan Tahun Lalu / Prior Year Adjustment	121,315	(373,198)
	<u>23,382,631</u>	<u>24,001,716</u>
- Seperti Yang Dinyatakan Semula / As Re-stated		
Pindahan Dari/(Ke): / Transfers from/(to):		
Kumpulanwang Am / General Fund	(1,291,641)	(740,400)
Kumpulanwang Tabung Pusingan / Revolving Fund	17,720	0
	<u>58,600,157</u>	<u>23,261,316</u>
<b>BAKI KUMPULANWANG DIHANTAR KE HADAPAN / BALANCE CARRIED FORWARD</b>		

**15. KUMPULANWANG PENGINAPAN & REKREASI / ACCOMMODATION & RECREATION FUND**

	<b>1999</b>	<b>1998</b>
	<b>RM</b>	<b>RM</b>
<b>PENDAPATAN / INCOME</b>		
Sumbangan / Contributions	5,630	6,348
Sumbangan Universiti / Contributions from University	25,000	0
Pelbagai Sewa / Rental	104,649	131,469
Pendapatan-pendapatan Lain / Other Income	1,473,312	2,109,173
	<u>1,608,591</u>	<u>2,246,990</u>
<b>TOLAK: PERBELANJAAN / LESS: EXPENDITURE</b>		
Emolumen / Emoluments	4,669	38,539
Perjalanan / Travel	12,134	17,140
Perhubungan / Communication	574	2,127
Utiliti / Utilities	45,387	59,780
Sewaan / Rental	14,131	5,730
Bekalan dan Bahan-bahan / Supplies & Materials	419,130	371,385
Penyelenggaraan dan Pembaikan / Maintenance & Repairs	681,307	719,950
Perkhidmatan Iktis dan Hospitaliti / Professional & Hospitality Services	627,621	734,346
Perbelanjaan-perbelanjaan lain / Other Expenditure	21,771	13,179
	<u>1,826,724</u>	<u>1,962,176</u>
(KURANGAN)/LEBIHAN PENDAPATAN / (DEFICIT) SURPLUS INCOME	(218,133)	284,814
<b>BAKI KUMPULANWANG DIBAWA KE HADAPAN /</b>		
<b>BALANCE BROUGHT FORWARD</b>		
- Seperti Yang Dinyatakan Terdahulu / As Previously Stated	5,805,236	5,574,436
- Pelarasan Tahun Lalu/Prior Year Adjustment	0	(12,694)
	<u>5,805,236</u>	<u>5,561,742</u>
- Seperti Yang Dinyatakan Semula / As Re-stated		
Pindahan (Ke) : / Transfers (to):		
Kumpulanwang Am / General Fund	(47,900)	(41,320)
	<u>5,539,203</u>	<u>5,805,236</u>
<b>BAKI KUMPULANWANG DIHANTAR KE HADAPAN /</b>		
<b>BALANCE CARRIED FORWARD</b>		

## 16. KUMPULANWANG PELABURAN / INVESTMENT FUND

	1999 RM	1998 RM
<b>PENDAPATAN / INCOME</b>		
Faedah, Dividen dan Keuntungan Saham / Interest, Dividends and Profits from Shares	21,571,311	20,942,099
Pengurangan Peruntukan Rosotnilai Saham / Less Provision for Diminution in Value of Shares	2,840,328	0
Pendapatan-Pendapatan Lain / Other Income	1,128,148	327
	<hr/> 25,539,787	<hr/> 20,942,426
<b>TOLAK : PERBELANJAAN / LESS: INCOME</b>		
Perkhidmatan Iktisas dan Hospitaliti / Professional & Hospitality Services	25,208	29,691
Peruntukan Rosotnilai Saham / Provision for Diminution in Value of Shares	0	1,215,224
	<hr/> 25,208	<hr/> 1,244,915
<b>LEBIHAN PENDAPATAN / SURPLUS INCOME</b>	25,514,579	19,697,511
<b>BAKI KUMPULANWANG DIBAWA KE HADAPAN / BALANCE BROUGHT FORWARD</b>		
- Seperti Yang Dinyatakan Terdahulu / As Previously Stated	67,181,456	47,840,860
- Pelarasan Tahun Lalu / Prior Year Adjustment	(66,609)	(316,196)
	<hr/> 67,114,847	<hr/> 47,524,664
<b>Pindahan Dari/(Ke): / Transfers from/(to):</b>		
Kumpulanwang Am / General Fund	(4,772,500)	(485,300)
Kumpulanwang Pembangunan / Development Fund	(6,500,000)	(702,308)
Kumpulanwang Kursus, Seminar dan Konferensi / Courses, Seminar & Conference Fund	1,375,630	1,146,889
Kumpulanwang Tabung Pusingan / Revolving Fund		
Kumpulanwang Rekreasi / Recreation Funds	(833,005)	0
	<hr/> 81,899,551	<hr/> 67,181,456
<b>BAKI KUMPULANWANG DIHANTAR KE HADAPAN / BALANCE CARRIED FORWARD</b>		

**17. KUMPULANWANG KURSUS, SEMINAR KONFERENSI DAN LAWATAN SAMBIL BELAJAR /  
COURSE, SEMINAR, CONFERENCE & STUDY VISIT FUNDS**

	1999 RM	1998 RM
<b>PENDAPATAN / INCOME</b>		
Pelbagai Yuran / Miscellaneous Fees	36,844,349	13,120,987
Sumbangan / Contributions	1,736,325	2,874,670
Faedah Simpanan Tetap / Interest from Fixed Deposits	272,986	270,730
Pelbagai Sewa / Rentals	197,001	88,075
Pendapatan-pendapatan Lain / Other Income	3,257,291	5,053,841
	<u>42,307,952</u>	<u>21,408,303</u>
<b>TOLAK: PERBELANJAAN / LESS: EXPENDITURE</b>		
Emolumen / Emoluments	2,573	23,581
Perjalanan / Travel	679,087	789,670
Pengangkutan / Transport	10,613	925
Perhubungan / Communication	147,635	102,946
Utiliti / Utilities	355,408	171,444
Sewaan / Rental	239,088	312,525
Bekalan dan Bahan-bahan / Supplies & Materials	1,275,195	667,292
Penyelenggaraan dan Pembaikan / Maintenance & Repairs	267,290	412,376
Perkhidmatan Iktis dan Hospitaliti / Professional & Hospitality Services	10,784,560	6,160,860
Pemberian dan Kenaan Bayaran Tetap / Grants & Fixed Payments	28,145	0
Perbelanjaan-perbelanjaan Lain / Other Expenditure	32,493	53,732
Hutang Lapuk / Bad Debts	9,986,005	0
	<u>23,808,092</u>	<u>8,695,351</u>
<b>LEBIHAN PENDAPATAN / SURPLUS INCOME</b>	<b>18,499,860</b>	<b>12,712,952</b>
<b>BAKI KUMPULANWANG DIBAWA KE HADAPAN / BALANCE BROUGHT FORWARD</b>		
- Seperti Yang Dinyatakan Terdahulu / As Previously Stated	20,806,140	10,101,029
- Pelarasan Tahun Lalu / Prior Year Adjustment	(942,029)	(365,967)
	<u>19,864,111</u>	<u>9,735,062</u>
<b>- Seperti Yang Dinyatakan Semula / As Re-stated</b>		
Pindahan Dari/(Ke): / Transfers from/(to):		
Kumpulanwang Am / General Fund	(484,145)	(494,985)
Kumpulanwang Pelaburan / Investment Account	(1,375,630)	(1,146,889)
Kumpulanwang Tabung Penyelidikan / Research Trust Fund	28,497	0
	<u>36,532,693</u>	<u>20,806,140</u>
<b>BAKI KUMPULANWANG DIHANTAR KE HADAPAN / BALANCE CARRIED FORWARD</b>		

**18. KUMPULANWANG PINJAMAN KENDERAAN DAN KOMPUTER /  
VEHICLES & COMPUTER LOAN FUNDS**

	1999 RM	1998 RM
<b>Kumpulanwang Pinjaman Kenderaan / Vehicle Loan Funds</b>		
BAKI KUMPULANWANG DIBAWA DAN DIHANTAR KE HADAPAN / BALANCE BROUGHT FORWARD	13,000,000	13,000,000
<b>Kumpulanwang Pinjaman Komputer / Computer Loan</b>		
BAKI KUMPULANWANG DIBAWA DAN DIHANTAR KE HADAPAN / BALANCE BROUGHT FORWARD	<u>2,000,000</u>	<u>2,000,000</u>
JUMLAH BAKI KUMPULANWANG DIHANTAR KE HADAPAN / TOTAL BALANCE CARRIED FORWARD	<u>15,000,000</u>	<u>15,000,000</u>

**19. PENGLIBATAN MODAL / CAPITAL INVOLVEMENT**

	1999 RM	1998 RM
Perbelanjaan Modal Diluluskan Tetapi Tidak Diperuntukan di dalam akaun: / Capital Expenditure was Approved but not Provided for in the Accounts		
- Dikontrakkan / Contracted	58,642,815	1,024,724
- Tidak dikontrakkan / Not Contracted	95,244,103	88,277,972
	<u>153,886,918</u>	<u>89,302,696</u>

Peningkatan jumlah penglibatan modal dari RM89,302,696 kepada RM153,886,918 adalah kerana pertambahan kelulusan bagi projek-projek bangunan Pusat Penyelidikan dan Pembangunan (R&D), bangunan Fakulti Rekabentuk dan Senibina serta bangunan Klinikal di Hospital Kajang untuk Rancangan Malaysia Ketujuh- RMK7.

The increase in value of capital involvement from RM89,302,696 to RM153,886,918 was due to an additional approval for construction of the R&D Building, the faculty of Architecture & Design and the Clinic Building under the 7th Malaysian Plan.

## 20. PELARASAN TAHUN LALU / PRIOR YEAR ADJUSTMENT

	1999 RM	1998 RM
Kerja-kerja Tanah Sintetik Trek D Diakaunkan Semula ke Akaun Pembinaan Dalam Kemajuan / Ground Works for Synthetic Track D Accounted for in the Accounts of Work in Progress	0	3,350,491
Selaras Peruntukan Hutang Lapok / Adjustments to Provision of Bad Debts	0	554,100
Bayaran Balik Pinjaman Antara Kumpulanwang Repayment of Loans Between Funds	206,415	675,000
	206,415	4,579,590
<b>TOLAK:LESS</b>		
Pindah Baki Akaun Unit Ayam ke Akaun Taman Penyelidikan UPM / Transfer of Balance in the Chicken Unit to the Accounts of UPM Research Park	0	627,390
Faedah Simpanan Tetap Terakru Terlebih Diambilkira dalam Tahun 1998 / Surplus Interest Accrued from Fixed Deposits Accounted for in 1998	76,959	463,764
Selaras Transaksi Salah Caj / Adjustments for Wrongly Charged Transactions	1,023,900	2,160,166
	1,100,859	3,251,320
Baki pada 31 Disember 1999/98 / Balance as at 31 December 1999/98	(894,444)	1,328,270

## 21. LIABILITI KONTINGENSI / CONTINGENCY LIABILITIES

	1999 RM	1998 RM
Tindakan undang-undang diambil oleh Syarikat Juta Yakin terhadap UPM dengan mengemukakan tuntutan saman berkaitan Projek Membina dan Menyiapkan Bangunan Markas Palapes. Legal action taken by Syarikat Juta Yakin against UPM with a summons claim related for the construction of Palapes Headquarters.	240,000	240,000
Syarikat May Teknik telah mengemukakan saman berkaitan penginapan pelajar di Vintage Point Condominium, Desa Petaling. A Summons by Syarikat May Teknik in relation to Student Accommodation at Vintage Point Condominium, Desa Petaling	120,000	0
	360,000	240,000

## 22. ANGKA - ANGKA PERBANDINGAN / COMPARATIVE FIGURES

Sebahagian dari angka-angka bandingan tahun lalu telah dipinda untuk disesuaikan dengan persembahan tahun ini.

A portion of prior year comparative figures have been reclassified for adjustment to this year's presentation.

