UNIVERSITI MALAYA

PUSAT ASASI SAINS

Centre for Foundation Studies in Science

BUKU PANDUAN PROGRAM ASASI SAINS

UNIVERSITI MALAYA

SESI 2024/2025

Home of the Bright,
Land of the Brave

Di Sini Bermulanya Pintar,
Tanah Tumpahnya Berani

ISI KANDUNGAN

MISI

"Pushing the boundaries of knowledge and nurturing aspiring leaders."

VISI

"A global university impacting the world."

Nilai Teras

P : Passion, Embrace, Inspire, Resourceful
O : Oneness, Accord, Partnership, Mutual Respect
I : Integrity, Disciplined, Trustworthy
S : Sincerity, Honest, Willing, Transparent
E : Empathy, Concern, Tolerant, Receptive

KATA-KATA ALUAN PENGARAH EKSEKUTIF PASUM

اَلسَلامُ عَلَيْكُم وَرَحْمَةُ اَللهِ وَبَرَكاتُهُ dan salam sejahtera

Seluruh warga Pusat Asasi Sains, Universiti Malaya (PASUM), mengucapkan setinggi-tinggi tahniah kepada semua pelajar kerana terpilih untuk mengikuti Program Asasi Sains di PASUM bagi sesi 2024/2025.

Untuk makluman semua pelajar, PASUM ditubuhkan sebagai wadah untuk para pelajar memantapkan pengetahuan dalam bidang asas sains dalam suasana pembelajaran di kampus sebelum melangkah ke Fakulti. Proses pembelajaran para pelajar akan disokong dengan tenaga pensyarah yang berpengalaman dan berdedikasi, fasiliti pengajaran dan makmal sains yang lengkap serta sistem sokongan hal ehwal pelajar yang tersusun. Tumpuan kami adalah untuk memastikan PASUM menjadi batu loncatan kepada kejayaan para pelajar di fakulti nanti.

Selain itu, bermula pada sesi 2023/2024, PASUM semakin berkembang dengan pertambahan program akademik baharu, iaitu Asasi Sains Sosial sebagai sebuah platform persediaan untuk melahirkan profesional dalam bidang perundangan, perniagaan, ekonomi, kesenian dan bidang-bidang sains sosial yang lain.

Saya mewakili seluruh warga Pusat Asasi Sains mengalu-alukan kedatangan para pelajar sebagai sebahagian daripada keluarga besar kami. Saya percaya para pelajar telah bersedia untuk memberi komitmen terbaik kepada proses pembelajaran sepanjang tempoh pengajian di PASUM serta akan menjadi kebanggaan kepada semua terutamanya kepada ibu bapa dan keluarga pelajar sendiri. Saya percaya bahawa sifat positif yang dibentuk pada usia remaja akan mempengaruhi kematangan dan jati diri pelajar. Seluruh warga PASUM komited dan berusaha sedaya upaya untuk menyokong perkembangan akademik dan sahsiah diri para pelajar agar para pelajar menjadi insan cemerlang untuk agama, bangsa dan negara.

Semoga para pelajar akan sentiasa berusaha bersungguh-sungguh untuk mencapai kejayaan dan kecemerlangan yang berterusan!

Profesor Madya Dr. Ir Farazila Yusof
2024

SEJARAH PASUM

Pusat Asasi Sains Universiti Malaya (PASUM) merupakan sebuah institusi pengajian prauniversiti nombor 1 negara yang telah ditubuhkan pada tahun 1976 di bawah Peruntukan Seksyen 18 Perlembagaan Universiti Malaya. Perancangan program pengajian akademik di PASUM adalah bertujuan untuk melengkapkan para pelajar bumiputera dengan pengetahuan asas sains dan matematik yang kukuh sebagai persediaan untuk melanjutkan pengajian di peringkat Ijazah Sarjana Muda khususnya di Universiti Malaya serta universiti awam yang lain.

Sesi pengajian 1977/78 merupakan kumpulan pertama pelajar yang telah berjaya meneruskan pengajian ke Fakulti Perubatan, Fakulti Kejuruteraan dan Fakulti Sains. Para alumni ini telah berjaya menerima Ijazah Sarjana Muda dalam konvokesyen Universiti Malaya pada tahun 1983. Manakala konvokesyen pada tahun 1984 pula telah menyaksikan kumpulan pertama Program Asasi Sains yang telah berjaya menerima Ijazah Sarjana Muda dalam bidang perubatan.

Para pelajar Pusat Asasi Sains adalah ditempatkan di kolej-kolej kediaman Universiti Malaya bertujuan untuk memberi pendedahan dan pengalaman suasana kehidupan di kampus universiti. Pada tahun 1982, program Rancangan Persediaan Khas (Jepun) telah diperkenalkan, dan selanjutnya diikuti pula dengan dua program baharu mulai sesi pengajian 1988/89, iaitu Program Pra Perakaunan untuk pelajar ke Fakulti Ekonomi dan Pentadbiran, dan Program Pra-Inggeris Sebagai Bahasa Kedua bagi persediaan pelajar ke Fakulti Pendidikan. Seterusnya, Program Pra Undang-Undang dan Pra Alam Bina telah diperkenalkan pada sesi pengajian 1997/98.

Pada sesi pengajian 2004/05, sesi pengajaran dan pembelajaran bagi Program Asasi Sains dikendalikan dalam Bahasa Inggeris sepenuhnya. Pusat Asasi Sains telah memberi penekanan dalam kursus Bahasa Inggeris supaya para pelajar mendapat pendedahan sewajarnya bagi memudahkan proses pembelajaran yang berkesan.

Pada masa kini, Pusat Asasi Sains menawarkan program Asasi Sains Hayat, Asasi Sains Fizikal, Asasi Sains Sosial dan Rancangan Persediaan Khas (Jepun). PASUM juga mempunyai tenaga pengajar yang memiliki Ijazah Kedoktoran dengan kepakaran, kemahiran dan pengalaman dalam pelbagai bidang serta infrastruktur yang moden dan berteknologi tinggi bagi melaksanakan sesi pengajian dan pembelajaran.

Dengan pengalaman lebih 48 tahun penubuhan, Pusat Asasi Sains Universiti Malaya telah berjaya melahirkan seramai lebih 45,000 pelajar bumiputera dengan asas sains dan matematik yang mantap untuk persediaan melanjutkan pengajian di peringkat Ijazah Sarjana Muda dan seterusnya berkhidmat dalam pelbagai bidang profesional seperti perubatan, kejuruteraan, sains & teknologi, teknologi maklumat dan lain-lain bidang di seluruh Malaysia dan di persada antarabangsa.

PENTADBIRAN PASUM

Pentadbiran Pusat Asasi Sains diketuai oleh seorang Pengarah dan dibantu oleh 2 orang Timbalan Pengarah Eksekutif. Bagi memantapkan pentadbiran akademik di Pusat Asasi Sains, 10 orang penyelaras kursus/program telah diwujudkan. Selain itu, terdapat seorang Pengurus, 2 orang Penolong Pendaftar dan seorang Penolong Pegawai Tadbir serta kakitangan pelaksana yang turut membantu dalam pentadbiran dan hal ehwal pelajar Pusat Asasi Sains.

KAKITANGAN PUSAT ASASI SAINS

Pusat Asasi Sains mempunyai 93 orang kakitangan akademik yang terdiri daripada seorang Profesor Madya (Pengarah Eksekutif), 28 orang Pensyarah Kanan, 2 orang Pensyarah, 20 orang Pegawai Perkhidmatan Pendidikan, 8 orang Guru Bahasa Inggeris, 34 orang Guru Bahasa dan Guru Subjek untuk Program Rancangan Persediaan Khas (Jepun)/RPKJ. Sebahagian besar daripada mereka berkelayakan Ijazah Sarjana dan Ijazah Doktor Falsafah dalam bidang masing-masing.

Selain itu, Pusat Asasi Sains mempunyai 52 orang kakitangan bukan akademik yang membantu mengendalikan dan memberi khidmat sokongan di Pusat Asasi Sains. Keterangan lanjut mengenai kakitangan Pusat Asasi Sains bagi Sesi 2024/2025 adalah seperti berikut:

PEJABAT PENTADBIRAN

PENGARAH EKSEKUTIF
Profesor Madya Dr. Ir Farazila binti Yusof – Beng CAD/M(Malaya), MEng. Sc (Malaya), PhD (Japan), CEng MIMescel

TIMBALAN PENGARAH EKSEKUTIF (AKADEMIK DAN HAL EHWAL PELAJAR)
Dr. Norsiah binti Hashim – BSc (UTM), MSc (UTM), PhD (UM)

TIMBALAN PENGARAH (PEMBANGUNAN, PENYELIDIKAN & INOVASI)
Dr. Norli Anida binti Abdullah – BSc (UM), MSc (UM), PhD (UM)

PENGURUS
Puan Nohzah binti Zulkarnain – Bachelor in Human Sc. (Political Science) (Hons) (UIAM)

PENOLONG PENDAFTAR
Encik Amirul Eqhwan bin Rahim - BSc (UM)
Encik Mohd Sharil bin Mat Nayan - BBA.Fin (UiTM) M.Fin (UPM)

PENOLONG PEGAWAI TADBIR
Cik Intan Shafura binti Abdullah – B Corp Admin (UiTM), Dip Public Admin (UiTM)

PEMBANTU SETIAUSAHA PEJABAT
Puan Amirah Nadia binti Saringat
Cik Puteri Nur Nasuha Idayu binti Mohd Nazri

PENOLONG PEGAWAI SAINS
Encik Mohamad Hairul Azmir bin Harun
Puan Norsyuhadah binti Yahya
Puan Noor Fhadzilah binti Mansur

PENOLONG JURUTERA
Encik Muhammad Zubir Abd Manaf
Encik Muhammad Syamiel bin Zulkifli
Encik Mohammad Hafizi bin Mohd Ghazali

PENOLONG PEGAWAI TEKNOLOGI MAKLUMAT
Encik Mohd Hasri bin Che Ros

JURUTEKNIK KOMPUTER
Encik Seemandass a/l Ryepun

PEMBANTU TADBIR (P/O)
Puan Nor Aziah binti Abas
Puan Norhaniyah binti Mohamed Yunos
Puan Nurulasyikin binti Abd Majid
Puan Nurul Syahirah binti Abdul Hamid
Puan Raja Kamariah binti Raja Bakar
Puan Nur Ezzati binti Esham
Puan Amirah Fadhilah binti Anuar

PEMBANTU TADBIR (KEWANGAN)
Encik Mohd Shahrulnizam bin Mohamed Sufian
Puan Johamira binti Johan

PEREKA
Encik Azwan Azali bin Abd Rahman

PEMBANTU OPERASI
Puan Nor Haslinda binti Hassan
Puan Rozilah Mohamad Tahi
Encik Mohd Jauzi bin Mohd Shahidin
Puan Vilasini a/p Sukumaran
Encik Muhamad Illzam bin Ishak
Encik Mohd Farhan bin Shamsudin

PEMANDU KENDERAAN
Encik Mohd Safwan bin Jasmi

BAHAGIAN FIZIK

Penyelaras
Dr. Mohd Fahmi Azman – B.Eng (UM), MEngSC (UM), PhD (UM)

Pensyarah Kanan/Pensyarah
Dr. Aisyah Hartini Jahidin –B.Eng (UM), MEngSc (UM), PhD (UiTM)
Dr. Salmiah Ibrahim – BSc (UM), MPhil (UM), PhD (UM)
Dr. Zainal Abidin Ali– BSc (UM), MSc (UM), PhD (UM)
Dr. Norhiwani Mohd Hapipi – BSc (UPM), MPhil (UTM), PhD (UTM)
Dr. Siti Nabila binti Aidit – BSc (UTM) PhD (UM)
Dr. Hashlina Rusdi – BSc (UM), MSc (UM), PhD (UM)

Pegawai Perkhidmatan Pendidikan
Puan Norhafiza Muda –BSc (UiTM), MSc (UM), PGDE (UM)
Encik Naharudin Mustafa –BSc (UKM), MSc (UM), PGDE (UM)
Encik Hafizul Mat –BSc (UiTM), PGDE (UM)
Encik Mohd Yahya Ahmad –BSc (UiTM), MSc (UiTM), PGDE (UM)
Encik Amirul Hakimi Baderus–BSc (UKM), PGDE (UM)
Cik Nur Shamimi Akmal Azany - BSc Ed (UPM)

Pembantu Makmal
Encik Shahnizam Sakiman
Puan Noor Ilham Aliya Zulkifli
Puan Nurfarhana Mohd Azmi
Cik Shamsiah Abd Rahman
Cik Siti Intan Nor Ain Rahim
Encik Muhammad Izzat Ramli
Encik Aminuddin Bin Basrom

BAHAGIAN BIOLOGI

Penyelaras
Puan Maslenda Markom – BSc (UM), MSc (UM), PGDE (UM)

Pensyarah Kanan
Dr. Mahassan Mamat – BSc (UM), MSc (UM), PhD (UM)
Dr. Nor Azlina Abd Aziz – BSc (UM), MPhil (UM), PhD (UM)
Dr. Mahanom Jalil – BSc (UM), MSc (UM), PhD (UM)
Dr. Hazwani Mat Saad - BSc (UM), MSc (UM), PhD (UM)
Dr. Ahmad Husaini Suhaimi - BSc (UM), PhD (UM)
Dr. Mohd Fadhli Hamdan - BSc (USA), MSc (UKM), PhD (UK)

Pembantu Makmal
Encik Mohd Hafiszan Mohd Yusuf
Puan Hajartul Niza Abd Ghani
Encik Sadek Sanusi
Encik Muhammad Azrul Razali
Encik Muhammad Shafiq Rohaidi

BAHAGIAN MATEMATIK

Penyelaras
Dr. Ahmad Syafadhli Abu Bakar – BSc (UiTM), MSc (UiTM), PhD (UK)

Pensyarah Kanan/Pensyarah
Dr. Siti Fatimah Hassan – BSc (Ed) (UM), MPhil (UM), PhD (UM)
Dr. Norsiah Hashim – BSc (UTM), MSc (UTM), PhD (UM)
Dr. Norli Anida Abdullah – BSc (UM), MSc (UM), PhD (UM)
Dr. Norhaslina Kamarulzaman - BSc (UTM), MSc (UM), PhD (UM)
Dr. Nor Zatul-Iffa Ismail - BEc (UM), MSc (USM), PhD (UiTM)

Pegawai Perkhidmatan Pendidikan
Dr. Ahmad Zaki Mohamad Amin – Dip.Sc (UITM), BSc (UiTM), MSc (UTM), PhD (UTM)
Encik Jedzry Fadzlin Jalaluddin –BSc (UM), MSc (UiTM), PGDE (UM)
Encik Amirul Mohamad Khairi Mannan –BSc (UM), MSc (UiTM), PGDE (UM)
Encik Fakhrulrozi Hussain –BSc (Mal), MPhil (UM), PGDE (UM)
Puan Raiha Shazween Redzuan –BSc (UM), PGDE (UM)
Cik Raihan Zainudin –B.Eng (USyd), PGDE (UM)
Encik Hisham Safuan Mohamad Sukri – BSc Ed (UM)

BAHAGIAN KIMIA

Penyelaras
Dr. Nurshafiza binti Shahabudin – BSc (UM), MSc (UM), PhD (UM)

Pensyarah Kanan/Pensyarah
Dr. Fauzani Md Salleh – BSc (UKM), MSc (UKM), PhD (UM)
Dr. Liew Sook Yee – BSc (UMT), PhD (UM)
Dr. Ahmad Danial Azzahari - BSc (UM), MSc (UM), PhD (UM)
Dr. Siti Nor Farhana Yusuf – BSc (UM), MSc (UM), PhD (UM)
Dr. Syazreen Nadia Sulaiman - BSc (UKM), MSc (UM), PhD (UM)
Dr. Siti Mastura Mohamad Zakaria – BMedSc (IIUM), MSc (UM), PhD (UM)
Encik Mohd Hilmi Jaafar – BSc (UM), MSc (UM)

Pegawai Perkhidmatan Pendidikan:
Cik Azlina Puang – BSc (UM), MSc (UM), PGDE (UM)
Puan Zuraini Kadir –BSc (UM), MSc (UM), PGDE (UM)
Puan Mahfuzah Yusoff –BSc (UM), MSc (UM), PGDE (UM)
Puan Wan Nurhidayah A Karim –BSc (UM), MSc (UM), PGDE (UM)
Encik Che Mohd Farhan Che Mat Dusuki –BSc (UM), MSc (UKM), PGDE (UM)
Encik Muhammad Hafiz Husna Hasnan – B.Ed (UPSI), MSc (UPSI)

Pembantu Makmal
Encik Muhammad Syafiq Muhamad Wahid
Encik Mohd Saiful Nizam Nordin
Puan Tengku Nur Yuhanie Tengku Ahmad
Puan Nurul Ashikim Mohd
Encik Mohd Fazly Ab. Rahim
Cik Nurul Artika Mohd Samsuri
Puan Siti Nurhusna Jamalluddin

Pembantu Operasi
Puan Rosliza Yosof
Encik Wan Mohd Arif Wan Mahmood
Encik Wan Ahmad Idlan bin Nasron

BAHASA INGGERIS

Penyelaras
Puan Shazlin Niza Ab Razak – MLinguistics (UM), B.Edu in TESL (UiTM),

Guru Bahasa Inggeris
Puan Nik Fatin Nik Hashim – B.HSc in ELL (UIA)
Puan Rabiatul Adawiyyah Abdullah – MLinguistics (UM,B.Edu (Hons) in TESL (UiTM),
Puan Sakila Govindaraju – M.ESL (UM), B.Edu in TESL (UM),
Puan Suhaila Hani Zaidin – B.Art Eng (Madison)
Puan Nurul Nazifah Dato' Haji Mat Noh - MA (USM, B.HSc in ELL (UIA),
Encik Andy Helmy Zainal Abidin – B.English in TESOL (Unirazak)
Puan Zarinah S.A Mohd Abu Bakar Ali – Med TESL (UM), B.A English (UM)

JATI DIRI

Penyelaras
Dr. Aisyah Hartini binti Jahidin – B.Eng (UM), MEngSc (UM), PhD (UiTM)

TEKNOLOGI MAKLUMAT

Penyelaras
Encik Fakhrulrozi bin Hussain –BSc (Mal), MPhil (UM), PGDE (UM)

PROGRAM ASASI PENGAJIAN ISLAM DAN SAINS (BAHAGIAN SAINS)

Penyelaras
Dr. Salmiah binti Ibrahim – BSc (UM), MPhil (UM), PhD (UM)

PROGRAM ASASI SAINS SOSIAL

Penyelaras
Puan Suhaila Hani binti Zaidin – B.Art Eng (Madison)

Pensyarah Kanan
Dr. Nur Ameera A Jaz - BEc (UPM), MEcon (UPM), PhD (UPM)
Dr. Nur Syazwani binti Ahmad – BBA (UPM) MBA (UPM) PhD(UM)
Dr. Nurul Aishah binti Khairuddin – BEcon (UUM), Mecon (UKM), PhD (UKM)

RANCANGAN PERSEDIAAN KHAS (JEPUN)/RPKJ

Penyelaras Program
Cik Rosniza Mohamed Noor – BE (Yamagata), MA (Tokyo Foreign Studies)

Ketua Guru-Guru Jepun
Encik Kurioka Seishi – MSc (Ed) (Kobe)

Ketua Guru-Guru Subjek Jepun
Encik Sato Takayuki – BSc, MSc (Yamagata)

Ketua Guru-Guru Bahasa Jepun
Encik Takei Yasujiro – LL.B (Nihon), MA (Japanese Language) (Oberlin)

Penyelaras Bahasa Jepun Tahun 1
Puan Fazrina binti Said – BInf (Shizuoka), MSc (UiTM)

Guru Bahasa Jepun (Tahun 1)
Puan Fazrina binti Said – BInf (Shizuoka), MSc (UiTM)
Encik Fujisaki Yasunori – BA (Musashi), MA (Ohio State)
Cik Khairul Bariah binti Abd Latif Azmi – BE (Akita), MA (UM)
Encik Mohd Norhaswira bin Hasan – BE (Nagoya)
Encik Sakashita Taichi – BA Oriental History (Kokushikan), MA (Japanese Lang) (Oberlin)
Encik Kuchikata Shuichi – BA, MEd (Tokyo Gakugei)
Cik Kubo Aki – BA (Osaka), MA (Osaka)
Cik Siti Fatimah Abdul Alim – BEAS (UM), MMS (UM)

Penyelaras Bahasa Jepun Tahun 2
Encik Muhammad Nazrul Nana bin Khurizan – BE (Miyazaki), MA (Tokyo Foreign Studies)

Guru Bahasa Jepun (Tahun 2)
Encik Muhammad Nazrul Nana Khurizan – BE (Miyazaki), MA (Tokyo Foreign Studies)
Encik Takei Yasujiro – LL.B (Nihon), MA (Japanese Language) (Oberlin)
Cik Rosniza binti Mohamed Noor – BE (Yamagata), MA (Tokyo Foreign Studies)
Puan Maisarah binti Kamal – BE (Fukui), MA (Kanazawa)
Cik Takao Mariko – Postgraduate Diploma (London), MSc Language Teaching (Edinburgh)
Cik Ayaka Maki – BEd (Yokohama National), MA, PhD (Tohoku)

Guru Subjek Jepun (Kimia)
Encik Shinomiya Teruo – BSc, MSc (Soka)
Encik Sato Takayuki – BSc, MSc (Yamagata)
Encik Fujita Takeshi – BE, ME (Nihon)
Encik Unten Osamu – BAgric (Kobe), MSc (Kyoto)
Cik Chiba Maho – BAgric (Tohoku)

Guru Subjek Jepun (Fizik)
Encik Ikemoto Taizo – BSc (Kwansei Gakuin)
Encik Domoto Fumiya – BEd (Hiroshima)
Encik Kimura Michiro – BSc (Chiba), MSc (Okayama)
Encik Shiga Toshiki – BSc, ME (Osaka City)
Encik Isobe Kinichi – BAstr, MAstr (Tohoku)

Guru Subjek Jepun (Matematik)
Encik Abe Tsuneyuki – BSc (Tohoku)
Encik Takahara Satoshi – BSc (Kyushu)
Encik Niijima Kazuki – BSc, MSc (Niigata)
Encik Hasama Naoki – BE (Yamagata), MEd (Joetsu)
Encik Nakajima Junichi – BSc.CSE, MSc.CSE (Aizu)
Encik Saito Hajime – BEd (Akita)
Encik Mugitani Naohisa – BSc (Tohoku)
Encik Saito Tomoki – BEd (Hiroshima)

KALENDAR PENGAJIAN 2024/2025

KALENDAR AKADEMIK SESI 2024/2025
KAMPUS UM - PROGRAM ASASI SAINS HAYAT, ASASI SAINS FIZIKAL, ASASI SAINS SOSIAL & ASASI PENGAJIAN ISLAM DAN SAINS

SEMESTER I				
Haluansiswa		21.07.2024	-	28.07.2024
Kuliah	8 minggu*	29.07.2024	-	22.09.2024
Cuti Pertengahan Semester I	1 minggu	23.09.2024	-	29.09.2024
Ujian Pertengahan Semester I	1 minggu	30.09.2024	-	06.10.2024
Kuliah	9 minggu*	07.10.2024	-	08.12.2024
Minggu Ulangkaji	1 minggu	09.12.2024	-	15.12.2024
Peperiksaan Akhir Semeter I	2 minggu*	16.12.2024	-	29.12.2024
Cuti Semester I	1 minggu*	30.12.2024	-	05.01.2025
	23 minggu			
SEMESTER II				
Kuliah	8 minggu*	06.01.2025	-	02.03.2025
Ujian Pertengahan Semester II	1 minggu	03.03.2025	-	09.03.2025
Kuliah	3 minggu*	10.03.2025	-	30.03.2025
Cuti Pertengahan Semester II	1 minggu	31.03.2025	-	06.04.2025
Kuliah	6 minggu*	07.04.2025	-	18.05.2025
Minggu Ulangkaji	1 minggu	19.05.2025	-	25.05.2025
Peperiksaan Akhir Semester II	2 minggu*	26.05.2025	-	08.06.2025
	22 minggu			

*Tarikh-tarikh adalah tertakluk kepada cuti umum dan hari kelepasan am bagi Kuala Lumpur

- *Hari Kebangsaan (31 Ogos 2024)*
- *Hari Malaysia (16 September 2024)*
- *Maulidur Rasul (16 September 2024)*
- *Hari Deepavali (31 Oktober 2024)*
- *Hari Krismas (25 Disember 2024)*
- *Cuti Tahun Baharu (1 Januari 2025)*
- *Cuti Tahun Baharu Cina (29-30 Januari 2025)*
- *Hari Wilayah Persekutuan (1 Februari 2025)*
- *Hari Thaipusam (11 Februari 2025)*
- *Nuzul Quran (17 Mac 2025)*
- *Hari Raya Aidilfitri (31 Mac & 1 April 2025)*
- *Hari Pekerja (1 Mei 2025)*
- *Hari Wesak (12 Mei 2025)*
- *Hari Keputeraan YDP Agong (2 Jun 2025)*
- *Hari Raya Aidiladha (6 Jun 2025)*

MUET Speaking : 26, 27 & 28 November 2024, 2, 3 & 4 Disember 2024
MUET Writing : 7 Disember 2024

YURAN PENGAJIAN
PROGRAM PASUM
SESI AKADEMIK 2024/2025

SALURAN PERDANA (UPU)						
BUTIR	**ASASI SAINS HAYAT**		**ASASI SAINS FIZIKAL**		**ASASI SAINS SOSIAL**	
	SEMESTER 1	**SEMESTER 2**	**SEMESTER 1**	**SEMESTER 2**	**SEMESTER 1**	**SEMESTER 2**
Yuran Kemasukan	370.00		370.00		370.00	
Yuran Pengajian	400.00	400.00	375.00	375.00	350.00	350.00
Yuran Perkhidmatan	290.00	290.00	290.00	290.00	290.00	290.00
JUMLAH MENGIKUT SEMESTER	1060.00	690.00	1035.00	665.00	1010.00	640.00
JUMLAH KESELURUHAN	1,800.00		1,700.00		1,700.00	

- Kadar yuran telah **dibundarkan** kepada ratus yang terdekat.
- Yuran Kemasukan adalah telah termasuk dalam jumlah yuran Semester 1 dan Semester 2.
- Bayaran yang disenaraikan di atas tidak termasuk yuran asrama.
- Kadar yuran yang dinyatakan adalah tertakluk kepada perubahan. Bantuan kewangan oleh pihak KPT akan diberikan kepada pelajar Asasi yang layak. Proses permohonan bantuan kewangan ini akan dimaklumkan kemudian.
- Yuran Peperiksaan *Malaysian University English Test* (MUET) adalah termasuk dalam yuran di atas. Pihak PASUM akan menguruskan pendaftaran dan peperiksaan pelajar yang berdaftar.

SALURAN SATU

BUTIR	ASASI SAINS HAYAT		ASASI SAINS FIZIKAL		ASASI SAINS SOSIAL	
	SEMESTER 1	SEMESTER 2	SEMESTER 1	SEMESTER 2	SEMESTER 1	SEMESTER 2
Yuran Kemasukan	500.00		500.00		500.00	
Yuran Pengajian Yuran Perkhidmatan	5,667.00	5,667.00	5,667.00	5,667.00	4,667.00	4,667.00
JUMLAH MENGIKUT SEMESTER	6,176.00	5,667.00	6,176.00	5,667.00	5,167.00	4,667.00
JUMLAH KESELURUHAN	11,900.00		11,900.00		9,900.00	

- Kadar yuran telah **dibundarkan** kepada ratus yang terdekat.
- Yuran Kemasukan adalah telah termasuk dalam jumlah yuran Semester 1 dan Semester 2.
- Bayaran yang disenaraikan di atas tidak termasuk yuran asrama.
- Kadar yuran yang dinyatakan adalah tertakluk kepada perubahan. Bantuan kewangan oleh pihak KPT akan diberikan kepada pelajar Asasi yang layak. Proses permohonan bantuan kewangan ini akan dimaklumkan kemudian.
- Yuran Peperiksaan *Malaysian University English Test* (MUET) adalah termasuk dalam yuran di atas. Pihak PASUM akan menguruskan pendaftaran dan peperiksaan pelajar yang berdaftar.

MAKLUMAT PENTADBIRAN

1. PROSEDUR MENARIK DIRI DARIPADA PROGRAM ASASI

Pelajar yang berkenaan adalah diminta untuk memohon penarikan diri dengan **segera** menerusi sistem MAYA (Sila rujuk tatacara lengkap di Lampiran A).

2. PINDAAN MAKLUMAT PERIBADI

Pelajar adalah dinasihatkan untuk memaklumkan sebarang pertukaran alamat kediaman atau lain-lain maklumat peribadi dengan mengisi Borang Pindaan Maklumat Peribadi (UM.F/116/2006) yang boleh didapati di Pejabat Am, Pusat Asasi Sains dengan segera untuk pengemaskinian maklumat pelajar. (Sila rujuk borang seperti di Lampiran B)

3. KETIDAKHADIRAN SEMASA PENGAJIAN

a. Pengecualian Kuliah/Tutorial/Amali

Seseorang pelajar yang tidak boleh menghadiri kuliah/tutorial/amali pada minggu pengajian hendaklah memohon kebenaran daripada Pengarah Pusat Asasi Sains dengan mengisi Permohonan Cuti/Pengecualian daripada Kuliah/Tutorial/Amali secara atas talian (sila klik link yang disediakan) dan lampirkan surat/dokumen sokongan.

Pelajar hanya akan diberikan pengecualian daripada menghadiri Kuliah/Tutorial/Amali pada tarikh atau masa tersebut hanya setelah mendapat kebenaran daripada Pengarah sahaja.

b. Cuti Sakit

Sekiranya pelajar tidak dapat menghadiri Kuliah/Tutorial/Amali atas sebab kesihatan, sijil cuti sakit pelajar perlu mengisi permohonan secara atas talian (sila klik link yang disediakan), Pusat Asasi Sains Universiti Malaya dalam tempoh **7 hari** untuk direkodkan.

https://asasi.um.edu.my/e-data-pelajar

4. KETIDAKHADIRAN SEMASA PEPERIKSAAN / UJIAN

Pelajar perlulah mengemukakan sijil cuti sakit dan laporan doktor tentang jenis penyakit dan keadaan kesihatan pelajar yang dikeluarkan oleh Pengamal Perubatan Berdaftar, Klinik Universiti Malaya/Hospital Kerajaan/Pusat Perubatan Universiti Malaya atau Pusat Perubatan Swasta.

5. KAEDAH DAN PERATURAN UNIVERSITI MALAYA (ASASI) 2024

Semua pelajar adalah tertakluk kepada Kaedah-kaedah Universiti Malaya (Asasi) 2024 dan Peraturan-Peraturan Universiti Malaya (Asasi) 2024.

MAKLUMAT PENGAJIAN

PROGRAM ASASI SAINS HAYAT/FIZIKAL

Objektif Pendidikan Program
Programme Educational Objectives (PEO)

PE01 Menggunakan pengetahuan asas pada peringkat pengajian asasi untuk melanjutkan pelajaran ke peringkat pengajian tinggi dalam bidang Matematik, Sains dan Kejuruteraan.

Use basic knowledge at foundation level of studies to pursue tertiary education in various fields of Mathematics, Science and Engineering.

PE02 Menunjukkan kemahiran teknikal dalam bidang pengajian mereka serta proses pemikiran kritis, kreatif dan penyelesaian masalah.

Demonstrate technical skills in their field of study and the processes of critical thinking, creative thinking and problem solving.

PE03 Memiliki sikap positif terhadap pembelajaran seumur hidup.

Possess positive attitudes for lifelong learning.

MATLAMAT PROGRAM

Program ini ditawarkan bertujuan untuk menyediakan pelajar lepasan SPM dengan pengetahuan dan kemahiran dalam bidang Sains, Teknologi, Kejuruteraan dan Matematik (STEM) secara holistik bagi memastikan mereka berjaya mengikuti pengajian pada peringkat Sarjana Muda di fakulti-fakulti berkaitan di Universiti Malaya khususnya, atau di institusi pengajian tinggi lain umumnya.

HASIL PEMBELAJARAN PROGRAM

Pada akhir program pengajian, pelajar dapat:

1. Mengguna pakai fakta, konsep, prinsip dan proses asas sains dalam membuat keputusan.
2. Mengaplikasikan prinsip asas sains bagi mengenal pasti dan menyelesaikan masalah.
3. Terlibat dalam pembelajaran secara berterusan dan aktiviti amali dalam bidang asas sains yang berkaitan.
4. Berkomunikasi mengenai konsep asas sains dengan berkesan, tepat dan koheren secara lisan dan tulisan.
5. Mengaplikasi teknologi digital dalam mencari dan memproses data dan maklumat asas sains yang berkaitan.
6. Mencari, mentafsir dan menggunakan maklumat asas sains berkaitan untuk kemahiran kendiri bagi pembelajaran sepanjang hayat.

PROGRAM ASASI SAINS SOSIAL

Objektif Pendidikan Program
Programme Educational Objectives (PEO)

Program Asasi Sains Sosial ini bertujuan untuk melahirkan:

PE01 Graduan berpengetahuan secara teori dan praktikal dalam bidang sains sosial.

PE02 Graduan boleh berkomunikasi dalam pasukan dan menunjukkan ciri-ciri kepimpinan yang baik serta beretika dalam kumpulan.

PE03 Graduan boleh menggunakan kemahiran numerasi dan digital dalam penyelesaian masalah.

HASIL PEMBELAJARAN PROGRAM

Pada akhir program pengajian, pelajar dapat:

1. Menjelaskan konsep, prinsip dan proses dalam bidang pengajian sains sosial.
2. Mengaplikasikan teori dan prinsip asas yang dipelajari bagi penyelesaian masalah.
3. Menjalankan aktiviti akademik seperti mengumpul, menganalisis, menyusun dan memproses data.
4. Menunjukkan kemahiran hubungan sosial dan berkomunikasi dalam menjalankan kerja secara berpasukan.
5. Menggunakan data numerasi dan aplikasi digital bagi memproses data dalam bidang sains sosial.
6. Melaksanakan asas kemahiran kepimpinan dalam aktiviti berkumpulan.
7. Menunjukkan kemahiran kendiri dan ciri-ciri usahawan dalam pelaksanaan aktiviti.
8. Mengenal pasti amalan etika dan profesionalisme dalam aktiviti yang dijalankan.

PROGRAM ASASI SAINS

ASASI SAINS HAYAT

KOMPONEN	SEMESTER 1		SEMESTER 2		JUMLAH KREDIT
	MATA PELAJARAN	KREDIT	MATA PELAJARAN	KREDIT	
KURSUS UNIVERSITI	FAX1001 – Jati Diri	1	FAX1001 – Jati Diri	1	55
	FAX1002 – Teknologi Maklumat	1	FAX1006 – Asas Kemahiran Berkomunikasi	2	
	FAX1005 – Bahasa Inggeris Untuk Pengajian Asasi	4			
KURSUS TERAS PROGRAM	FAD1001 – Biologi 1	3	FAD1003 – Biologi 3	3	
	FAD1002 – Biologi 2	3	FAD1004 – Biologi 4	3	
	FAD1016 – Kimia Asas 1	4	FAD1018 – Kimia Asas 2	4	
	FAD1017 – Kimia Amali 1	2	FAD1019 – Kimia Amali 2	2	
	FAD1020 – Fizik Asas 1	4	FAD1022 – Fizik Asas 2	3	
	FAD2021 – Fizik Amali 1	2	FAD1023 – Fizik Amali 2	3	
	FAD1013 – Matematik I	4	FAD1014 – Matematik II	3	
			FAD1015 – Matematik III	3	
	Jumlah Kredit (JK)	**28**		**27**	

Jumlah Kredit Keseluruhan 55 Kredit

ASASI SAINS FIZIKAL

KOMPONEN	SEMESTER 1		SEMESTER 2		JUMLAH KREDIT
	MATA PELAJARAN	KREDIT	MATA PELAJARAN	KREDIT	
KURSUS UNIVERSITI	FAX1001 – Jati Diri	1	FAX1001 – Jati Diri	1	55
	FAX1002 – Teknologi Maklumat	1	FAX1006 – Asas Kemahiran Berkomunikasi	2	
	FAX1005 – Bahasa Inggeris Untuk Pengajian Asasi	4			
KURSUS TERAS PROGRAM	FAC1001 – Matematik Lanjutan I	3	FAC1003 – Pengaturcaraan II	3	
	FAC1002 – Pengaturcaraan I	3	FAC1004 – Matematik Lanjutan II	3	
	FAD1016 – Kimia Asas 1	3	FAD1018 – Kimia Asas 2	3	
	FAD1017 – Kimia Amali 1	3	FAD1019 – Kimia Amali 2	3	
	FAD1020 – Fizik Asas 1	3	FAD1022 – Fizik Asas 2	3	
	FAD2021 – Fizik Amali 1	3	FAD1023 – Fizik Amali 2	3	
	FAD1013 – Matematik I	4	FAD1014 – Matematik II	3	
			FAD1015 – Matematik III	3	
	Jumlah Kredit (JK)	**28**		**27**	

Jumlah Kredit Keseluruhan 55 Kredit

ASASI SAINS SOSIAL

KOMPONEN	SEMESTER 1		SEMESTER 2		JUMLAH KREDIT
	MATA PELAJARAN	KREDIT	MATA PELAJARAN	KREDIT	
KURSUS UNIVERSITI	FAG1001 – Kemahiran Berfikir FAG1002 – Bahasa Inggeris I FAG1003 – Asas Teknologi Maklumat dan Komunikasi FAG1004 - Matematik	3 3 3 4	FAG1005 – Bahasa Inggeris II FAG1006 – Ko-kurikulum	3 2	55
KURSUS TERAS PROGRAM	FAG1007 – Asas Pengurusan FAG1008 – Prinsip Ekonomi FAG1009 – Pengenalan Kepada Undang-undang	4 4 4			
KURSUS TERAS PROGRAM			**PERNIAGAAN** FAG1010 – Perakaunan Kewangan FAG1011 – Prinsip Pengurusan **KEMANUSIAAN** FAG1013 – Asas Psikologi FAG1014 – Sosiologi FAG1015 – Kemahiran Menulis dan Penyelidikan **SENI** FAG1017 – Pengenalan Kepada Seni Visual FAG1020 – Asas Tari Kontemporari FAG1021 – Pengenalan kepada Seni Persembahan Malaysia	4 4 4	
KURSUS ELEKTIF			FAG1016 – Pengenalan kepada Kewangan FAG1018 – Media dan Komunikasi Massa FAG1019 – Kemahiran Perundangan FAG1022 – Asas Praktis Muzik FAG1023 – Asas Tari Melayu **(Pilih dua kursus elektif sahaja)**	4 4	
	Jumlah Kredit (JK)	**25**		**25**	

Jumlah Kredit Keseluruhan 55 Kredit

RINGKASAN KURSUS (*COURSE SYNOPSIS*)

PROGRAM ASASI HAYAT & FIZIKAL

FAX1001 *JATI DIRI (SELF DEVELOPMENT STUDIES)* *(2 credit hours)*

1. ***Empowering study skills will focus on the following aspects:***

    (i) Critical & Creative thinking skills
    (ii) Study groups & teamwork
    (iii) Time management & Self- management

2. ***Motivational aspects that concern***

    (i) Positive personal attributes
    (ii) Attitude to help others
    (iii) Attitude willing to change
    (iv) How to judge self- weakness and strength in oneself
    (v) How to create a positive self-image
    (vi) How to face the challenges of identity in cyberspace or the ICT era

3. *Coping with stress and stress management with reference to adolescent and student life. Causes of stress, symptoms of stress, and tips on managing stress successfully.*
4. *Reveal the characteristics of effective communication to students.*
5. *Enhancing knowledge of Malaysian statehood, as well as rights, roles, and responsibilities as citizens of Malaysia.*

At the end of the course, the students are able to:

1. *Explain the sense of their identity (Jati diri).*
2. *Demonstrate a positive attitude, behavior, and leadership value.*
3. *Communicate ideas clearly and effectively to the parties concerned.*

Main Reference Book:

1. *Zainol Abidin Kasim (Third Edition, 2020), Jati diri: Pembinaan dan Pemantapan, Penerbit Universiti Malaya, Kuala Lumpur*

Assessment Methods: *Continuous Assessment : 85%, Online Quiz : 15%*
Medium of Instruction: *Malay*

FAX1002 TEKNOLOGI MAKLUMAT (*INFORMATION TECHNOLOGY*) *(1 credit hour)*

This course introduces the Microsoft 365 tools where students will use this throughout their learning in PASUM. In addition, basic of ICT and programming are involved in this course. The basic ICT topics covered are Information Technology Literacy, Information System, Social Informatics, Network Computing, IoT, Machine Learning and Virtual/Augmented Reality. Meanwhile, the basic programming topics are Theoretical Programming, Propositional Logic, Microsoft Excel and Numerical Programming.

At the end of the course, students are able to:

1. *Apply suitable ICT tools to solve ICT related problems.*
2. *Giving presentation clearly and compact.*

Main Reference Books

1. *Oxford Information Technology for CSEC: Third edition Paperback (2019) by Glenda Gay & Ronald Blades.*
2. *Office 365 All-in-One for Dummies (For Dummies (Computer/Tech)) 1st Edition (2019)*
3. *Computer Programming for Absolute Beginners: Learn essential computer science concepts and coding techniques to kick-start your programming career Paperback – July 31, 2020, by Joakim Wassberg.*
4. *Related Website*

Assessment Methods: *Assignment 1- 35%, Presentation 1- 15%;*
Assignment 2 – 35%, Presentation 2 - 15%
Medium of Instruction: *English*

FAX1005 BAHASA INGGERIS UNTUK PENGAJIAN ASASI (*ENGLISH FOR FOUNDATION STUDIES*)
(4 credit hours)

This is the initial course in upgrading students' competency level in the English language for the academic purpose especially for the MUET exam at the university level. They will continuously be exposed to many different aspect of the English language as required accordingly to the CEFR standard. Thus, this syllabus will emphasize in sharpening students' knowledge in the four skills of language; listening, speaking, reading and writing. They will be listening to variation of texts to build up their listening skills. Students will also be given many different types of practices to build up their communication. This course will also expose the students to the different types of reading texts as well as emphasizing on their writing skills.

At the end of the course, students are able to:

1. *Derive information using listening skills*
2. *Deliver ideas effectively through speaking and writing*
3. *Analyse information from academic texts using reading skills*
4. *Apply effective writing skills in essay writing and translating information from other source*

Main Reference Book

1. *Choo Wan Yat, Yeoh Wei Tzee, Yee Sook Fen,*
ACE MUET - A coursebook for the Malaysian University ENGLISH TEST – Based on the latest CEFR – aligned Test Specification. Penerbit Ehsan, 2022.

Assessment Methods: *Continuous Assessment: 50%, Final Examination: 50%*
Medium of Instruction: *English*

FAX1006 ASAS KEMAHIRAN BERKOMUNIKASI (*BASIC COMMUNICATION SKILLS*)
(2 credit hours)

This course is designed to sharpen students' knowledge in basic communication skills which focuses on initial interview techniques and academic presentation. Students will participate in continuous reading through study activities in preparation for the speech outline. This extensive reading will promote basic literacy skills as a preparation for their presentation. Students will be exposed to various basic interview techniques to aid them to articulate their abilities and knowledge in different interview situations. It will assist them to be more selective in applying appropriate techniques of interview skills. Extensive reading will be carried out in academic studies as a preparation for presentation.

At the end of the course, the students are able to:

1. *Present using the presentation skills they have learned*
2. *Gather sources of information from reliable and trustworthy materials guidelines for an intended purpose.*
3. *Equip students with the appropriate communication and interview skills*

Main Reference Books

1. *Latisha Asmaak Shafie, Nor Alifah Rosaidi, English for Oral Presentations.Oxford University Press.2017*
2. *Steven Gershon,Present Yourself 2. Cambridge.2015*
3. *Stephen, E. Lucas.The Art of Public Speaking*

Assessment Methods: *Continuous Assessment: 50%, Final Examination: 50%*
Medium of Instruction: *English*

FAD1001 BIOLOGI 1 (*BIOLOGY 1*) *(3 credit hours)*

This course consists of the following topics:

Chemistry of Life:
Inorganic compounds: water, acids, bases and mineral salts. Organic compounds: carbohydrates, lipids, phospholipids, protein, nucleic acids and vitamins.

Cell Structure and Function:
Prokaryotes and eukaryotes, microscopy, technique for the study of cell, structure, function and distribution of organelles in animal and plant cell, application of cell structure and function, cell membrane (Davson-Danielli and Fluid Mosaic Model by Singer), transport across membrane and application of transport across membrane.

Enzymes, Cellular Respiration and Photosynthesis:
Mechanism of enzyme action, activation energy, factors affecting enzyme activity. Enzyme cofactors, inhibitors. Enzyme classification and application of enzyme concept. Aerobic and anaerobic respiration. Photosynthesis – organelle and chemical processes.

Cell Cycle and Cell Division:
Cell cycle, mitosis and meiosis, comparison between mitosis and meiosis, nondisjunction of chromosome (aneuploidy and euploidy).

At the end of the course, the students are able to:

1. *Understand the basic concepts and principles of biology.*
2. *Apply the concepts and principles in biology to solve biological problems.*
3. *Conduct biological experiments in biology related topics using appropriate scientific methods.*
4. *Ability to understand the guidelines and ethics in handling samples and biology equipment.*

Main Reference Books:

1. *Campbell Biology, 12th Edition (2020). Lisa A. Urry,Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, Rebecca Orr. Pearson.*
2. *Biology 11th Edition (2019). Eldra P. Solomon, Charles E. Martin, Diana W. Martin, Linda R. Berg. CENGAGE.*
3. *Pre-University Biology (2021) Nor Azlina A. A., Noor Hashida H., Mahanom J., Maslenda M., Haliza H. & Nazira Z. SAP Publication.*

Assessment Methods: *Continuous Assessment 50%, Final Examination 50%*
Medium of Instruction: *English*

FAD1002 BIOLOGI 2 (*BIOLOGY 2*)
(3 credit hours)

This course consists of the following topics:

***Genetic inheritance**:*
Mendelian genetics – monohybrid and dihybrid inheritance. Mendel's Laws. Deviation from Mendelian genetics. Gene, alleles and chromosomes. Gene linkage.

***DNA and Protein Synthesis**:*
DNA as genetic material, structure and function of DNA and RNA. Replication, transcription and protein synthesis (translation).

***Mutation and Human Genetics**:*
Types of mutation, mutation agent. Autosomal recessive, dominant and sex-linked inheritance. Syndrome due to mutation. Pedigree analysis. Genetic counseling and screening.

***Genetic Engineering**:*
DNA recombinant technology, endonuclease enzyme, DNA ligase, cloning vector. Genome and gene library. Application in medicine and agriculture.

At the end of the course, the students are able to:

1. *Explain the basic concepts and principles of biology.*
2. *Apply the basic concepts and principles in biology to solve biological problems.*
3. *Demonstrate skill to relate scientific information gathered in solving problems related to biological concepts and principles.*
4. *Ability to practice positive attitude and integrity towards research.*

Main Reference Books:

1. *Campbell Biology, 12th Edition (2020). Lisa A. Urry, Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, Rebecca Orr. Pearson.*
2. *Biology 11th Edition (2019). Eldra P. Solomon, Charles E. Martin, Diana W. Martin, Linda R. Berg. CENGAGE.*
3. *Pre-University Biology (2021) Nor Azlina A. A., Noor Hashida H., Mahanom J., Maslenda M., Haliza H. & Nazira Z. SAP Publication.*

Assessment Methods: *Continuous Assessment 50%, Final Examination 50%*
Medium of Instruction: *English*

FAD1003 BIOLOGI 3 (*BIOLOGY 3*)
(3 credit hours)

This course consists of the following topics:

***Population genetics**:*
Population genetics – gene pool, Hardy-Weinberg Laws and equation.

***Plant diversity**:*
Taxonomy, virus and bacteria, fungi, algae, bryophyte, pteridophyte gymnosperm and angiosperm. Plant reproduction and growth.

***Animal Diversity**:*
Classification, characteristics of protozoa, coelenterata, nematoda, annelida, platyhelminthes, athropoda, mollusca, echinodermata and chordata.

***Histology**:*
Cell specialisation, classification, structure and function of plant and animal tissues.

Autotrophic and Heterotrophic Nutrition:
Autotrophic and heterotrophic nutrition, autotrophic and chemosynthetic bacteria, human digestive system.

At the end of the course, the students are able to:

1. *Explain the basic concepts and principles of biology.*
2. *Apply the basic concepts and principles in biology to solve biological problems.*
3. *Demonstrate skill to relate scientific information gathered in solving problems related to biological concepts and principles.*
4. *Ability to practice positive attitude and integrity towards research*

Main Reference Books:

1. *Campbell Biology, 12th Edition (2020). Lisa A. Urry, Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, Rebecca Orr. Pearson.*
2. *Biology 11th Edition (2019). Eldra P. Solomon, Charles E. Martin, Diana W. Martin, Linda R. Berg. CENGAGE*
3. *Pre-University Biology (2021) Nor Azlina A. A., Noor Hashida H., Mahanom J., Maslenda M., Haliza H. & Nazira Z. SAP Publication.*

Assessment Methods: *Continuous Assessment 50%, Final Examination 50%*
Medium of Instruction: *English*

FAD1004 BIOLOGI 4 (*BIOLOGY 4*)
(3 credit hours)

This course consists of the following topics:

Animal Respiration and Circulation System:
Respiration surface, adaptation and organ. Human respiration mechanism. Human circulation system. Lymphatic system.

Homeostasis and Resistance to Diseases:
Control of body sugar level and temperature. Excretion and osmoregulation. Resistance mechanism, human blood group, antibody and antigen.

Response and Communication:
Nervous system organisation. Effector (skeletal muscle). Stimulation receptors. Endocrine system – hormones.

Animal Reproduction and Development:
Structure and function of human reproductive system, hormone regulation, gametogenesis, fertilisation, embryonic development, pregnancy, delivery and lactation.

Ecology:
Basic principles of ecology, energy flow, food web, interaction between organisms, biogeochemical cycles, succession and pollution.

At the end of the course, the students are able to:

1. *Understand the basic concepts and principles of biology.*
2. *Apply the concepts and principles in biology to solve biological problems.*
3. *Conduct biological experiments in biology related topics using appropriate scientific methods.*
4. *Ability to understand the guidelines and ethics in handling samples and biology equipment*

Main Reference Books:

1. *Campbell Biology, 12th Edition (2020). Lisa A. Urry, Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, Rebecca Orr. Pearson.*

2. *Biology 11th Edition (2019). Eldra P. Solomon, Charles E. Martin, Diana W. Martin, Linda R. Berg. CENGAGE*
3. *Pre-University Biology (2021) Nor Azlina A. A., Noor Hashida H., Mahanom J., Maslenda M., Haliza H. & Nazira Z. SAP Publication.*

Assessment Methods: *Continuous Assessment 50%, Final Examination 50%*
Medium of Instruction: *English*

FAD1016 KIMIA ASAS 1 (*BASIC CHEMISTRY 1*) *(4 credit hours)*

This course consists of the following topics:

General Chemistry:

Matter, phases of matter, behavior and phase change processes, proton, electron and neutron, isotope and isotopic abundance, mass spectrometer, mass spectrum, average atomic mass, IUPAC nomenclature of ions and salts, mole, Avogadro constant, molar volume, concentration of a solution, mole fraction, oxidation number, chemical equation including redox equations, empirical and molecular formulae, stoichiometry

Atomic Structure:

Bohr's atomic model, line spectrum of hydrogen atom, Rydberg equation, de Broglie's postulate, Heisenberg's uncertainty principle, four quantum numbers, shapes of s, p and d orbitals, electron configuration of an atom, Aufbau Principle, Pauli exclusion principle, Hund's rule & diagonal rule, orbital box diagram, anomalous electron configuration of chromium & copper.

State of Matters:

Boyle's law, Charle's law & ideal gas equation, Dalton's law of Partial Pressure, kinetic molecular theory of gases, Maxwell-Boltzman distribution, ideal and non-ideal behaviours of gases, van der Waals equation, effusion and diffusion of gases, Graham's Law, rate of effusion, vapour pressure and boiling point.

Periodic Table:

Arrangement of elements, electronic configuration, locations of representative/main-group elements, transition and inner-transition elements, group and period of elements, chemical groups, metallic and non-metallic behaviour of an element, atomic and ionic radius, ionization energy, electron affinity, electronegativity, melting point & boiling point in terms of structure and bonding, melting and boiling points across period 2 and 3, group 1 and 17, oxides of Period 3 elements.

Chemical Bonding:

Types of stability for the atoms and ions, Lewis symbols, octet rule, Lewis diagrams, formal charges, ionic bonding, covalent bonding, exceptions from Octet Rule, co-ordinate (dative covalent) bonding, resonance structures, VSEPR theory, orbital overlap, hybridization, bond polarity and dipole moments, intermolecular forces, hydrogen bonding.

Introduction to organic compound:

Saturated and unsaturated organic compounds, molecular formula, structural formula, functional group, homologous series, classification, naming (IUPAC rule), structural/constitutional isomerism, stereoisomerism, chiral centre, homolytic and heterolytic cleavage of covalent bonds, primary, secondary and tertiary free radical, carbocation, carbanion and inductive effect, electrophile, nucleophile, organic reactions.

Introduction to hydrocarbon:

Alkanes - general formula, naming (IUPAC rules), physical properties, natural sources, combustion in excess and limited oxygen, unreactivity, halogenation reaction, free radical substitution. Alkenes - general formula, functional group, naming, physical properties, preparation, mechanisms of dehydration of alcohols and dehydrohalogenation of haloalkanes, Saytzeff's rule, addition reaction, Markonikov's rule, anti-Markonikov's rule, unsaturation tests, oxidation reaction.

Introduction to Aromatic Compounds:

Kekule structure and resonance structure, structures and nomenclature of benzene and its derivatives, electrophilic aromatic substitution reaction of benzene, ortho-para and meta directing substituents, reactions of benzene derivatives, usage of aromatic compounds including the carcinogenic effects.

At the end of the course, students are able to:

1. *Describe the basic concepts of chemistry in the subject of atomic structure, general chemistry, state of matters, periodic table, chemical bonding, introduction of organic compound, hydrocarbon and aromatic compound.*
2. *Apply the basic principles of chemistry in the subject of atomic structure, general chemistry, state of matters, periodic table, chemical bonding, introduction of organic compound, hydrocarbon and aromatic compound.*
3. *Demonstrate the basic principles of chemistry in the subject of atomic structure, general chemistry, state of matters, periodic table, chemical bonding, introduction of organic* compound, hydrocarbon and aromatic compound.

Main Reference Books:

1. *Pre-University Chemistry, Norbani et.al, SAP Education (2021)*
2. *ISE Chemistry 13th Edition, Raymond Chang, 8th Edition, Mc Graw Hill (2018)*
3. *Chemistry A Molecular Approach, 5th Edition, Nivaldo J. Tro, Pearson (2020)*
4. *Organic Chemistry, Wade, 9th Edition, Pearson (2017)*
5. *Organic Chemistry 9th Edition McMurry Solution Manual, (2017)*
6. *Chemistry (3): Introducing inorganic, organic and physical chemistry, Andrew Burrows et.al.Oxford University Press (2021)*

Assessment Methods: *Continuous Assessment 50 %, Final Examination 50%*
Medium of Instruction: *English*

FAD1017 KIMIA AMALI 1 (*PRACTICAL CHEMISTRY 1*)
(2 credit hours)

The topics of laboratory experiments are: Introduction to experimental laboratory and usage of laboratory equipment, general chemistry, state of matters, periodic table, chemical bonding and hydrocarbon.

At the end of the course, students must be able to:

1. *Perform practical work according to the correct method.*
2. *Analyse basic chemistry principles of general chemistry, periodic table, state of matters, chemical bonding and hydrocarbon.*
3. *Demonstrate practical work individually or in groups.*

Main Reference Books:

1. Chemistry Laboratory Manual, Semester 2, 2022/2023
2. *Pre-University Chemistry, Norbani et.al, SAP Education (2021)*
3. *ISE Chemistry 13th Edition, Raymond Chang, 8th Edition, Mc Graw Hill (2018)*
4. *Chemistry A Molecular Approach, 5th Edition, Nivaldo J. Tro, Pearson (2020)*
5. *Organic Chemistry, Wade, 9th Edition, Pearson (2017)*
6. *Organic Chemistry 9th Edition McMurry Solution Manual, (2017)*
7. *Chemistry (3): Introducing inorganic, organic and physical chemistry, Andrew Burrows et.al.,Oxford University Press (2021)*

Assessment Methods: *Continuous Assessment: 100 %*
Medium of Instruction: *English*

FAD1018 KIMIA ASAS 2 (*BASIC CHEMISTRY 2*)
(4 credit hours)

This course consists of the following topics:

Chemical Equilibrium:
Reversible reaction, dynamic equilibrium/chemical equilibrium, concepts/characteristics of dynamic equilibrium/chemical equilibrium, equilibrium law, equilibrium constant (K_c & K_p), homogeneous and heterogeneous reactions, degree of dissociation, relationship between K_c and K_p, reaction quotient expression, Le Chatelier's principle, factors affecting position and equilibrium constant, addition of inert gas and catalyst on chemical equilibrium, importance of chemical equilibrium in the chemical industry.

Ionic Equilibrium:
Arrhenius, Lewis and Bronsted-Lowry, conjugate acid and base, strong acid and base, weak acid and base, pH and pOH, ionic product of water, dissociation constant, degree of dissociation, salt hydrolysis, classification of salts, buffer solution, Henderson-Hasselbach equation, titration, end-point, equivalence point, indicators.

Solubility Product:
Saturated solution, soluble and insoluble compounds, solubility equilibrium equation, solubility and molar solubility, solubility product, solubility product expression (K_{sp}), solubility product constant, solubility quotient expression, separation of ions by fractional precipitation, common ion effect, Le Chatelier's principle

Phase Equilibrium:
Phase and component, colligative properties, triple point and critical point, phase diagrams of H_2O and CO_2, ideal and non-ideal solutions for two components system, Raoult's law, azeotrope, ideal and deviations from Raoult's law, fractional distillation

Thermochemistry:
Endothermic and exothermic reactions, standard conditions and standard enthalpy of reaction, enthalpy of formation, combustion, atomisation, sublimation, neutralisation, hydration, and solution, Hess' law, enthalpy changes, lattice energy, hydration process of ionic solids, Born-Haber cycle.

Electrochemistry:
Oxidation and reduction reaction, Galvanic Cell, half-cell and overall reaction equation, cell notation, standard electrode and standard cell potential, standard hydrogen electrode, oxidising agents, reducing agents, spontaneity of a redox reaction, Nernst equation, electrolytic cell, electrolysis, Faraday's first law of electrolysis.

Kinetic Chemistry:
Reaction rate, differential rate equation, rate law, order of reaction and half-life, integrated rate equation, order of reaction, differential & integrated rate equations, effective collision, activation energy, characteristics of an activated complex, factors affecting reaction rate, Arrhenius equation.

Stereochemistry:
3D image and Fischer projection, optically-active compound, levorotatory or dextrorotatory, racemic mixture, stereoisomers with more than one stereogenic centre.

Alcohols & Phenols:
Alcohol- Structural and optical isomerism, physical properties, classification, preparation, chemical properties and uses of alcohols. Relative acidity of water, phenol and alcohol. Phenol – preparation, chemical properties and use of phenol.

Carbonyl Compounds (Aldehyde & Ketone):
General formula, IUPAC nomenclature, preparation and chemical properties, natural compounds with -C=O group, characteristics of glucose as a reducing sugar, D and L stereoisomers of sugars

Carboxylic Acid & its Derivatives:
Physical properties, preparation, chemical properties of carboxylic acid & its derivatives

Amine & Amino Acids:
Amine- Classification, IUPAC nomenclatures, physical properties, preparation (Hoffmann's degradation) and chemical properties of amines. Amino acids- general structure, 20 standard amino acids, naming (IUPAC rule), zwitterion, isoelectric point, reactions of amino acids, peptide, structure of protein and importance of amino acids and protein.

Polymer:
Terminologies, condensation, addition polymerization, classification and usage of polymer.

At the end of the course, students are able to:

1. *Describe the basic concepts of chemistry in the subject of chemical equilibrium, ionic equilibrium, solubility product, phase equilibrium, thermochemistry, electrochemistry, kinetic chemistry, stereochemistry, alcohol & phenol, ketone & aldehyde, carboxylic acid and its derivatives, amine & amino acid and polymer.*
2. *Apply the basic principles of chemistry in the subject of chemical equilibrium, ionic equilibrium, solubility product, phase equilibrium, thermochemistry, electrochemistry, kinetic chemistry, stereochemistry, alcohol & phenol, ketone & aldehyde, carboxylic acid and its derivatives, amine & amino acid and polymer in solving chemistry problem.*
3. *Demonstrate the basic principles of chemistry in the subject of chemical equilibrium, ionic equilibrium, solubility product, phase equilibrium, thermochemistry, electrochemistry, kinetic chemistry, stereochemistry, alcohol & phenol, ketone & aldehyde, carboxylic acid and its derivatives, amine & amino acid and polymer in solving chemistry problem.*

Main Reference Book:

1. *Pre-University Chemistry, Norbani et.al, SAP Education (2021)*
2. *ISE Chemistry 13th Edition, Raymond Chang, 8th Edition, Mc Graw Hill (2018)*
4. *Chemistry A Molecular Approach, 5th Edition, Nivaldo J. Tro, Pearson (2020)*
5. *Organic Chemistry, Wade, 9th Edition, Pearson (2017)*
6. *Organic Chemistry 9th Edition McMurry Solution Manual, (2017)*
7. *Chemistry (3): Introducing inorganic, organic and physical chemistry, Andrew Burrows et.al.,Oxford University Press (2021)*

Assessment Methods: *Continuous Assessment: 50 %, Final Examination 50%*
Medium of Instruction: *English*

FAD1019 KIMIA AMALI 2 (*PRACTICAL CHEMISTRY 2*) *(2 credit hours)*

The topics of laboratory experiments are: chemical equilibrium, ionic equilibrium, thermochemistry, kinetic chemistry, stereoisomerism, alcohol & phenol, aldehyde & ketone.

At the end of the course, students must be able to:

1. *Perform practical work according to the correct method.*
2. *Analyse basic chemistry principles of chemical equilibrium, ionic equilibrium, thermochemistry, kinetic chemistry, stereoisomerism and organic compounds.*
3. *Demonstrate practical work individually or in groups.*

Main Reference Books:

1. *Chemistry Laboratory Manual, Semester 2, 2022/2023*
2. *Pre-University Chemistry, Norbani et.al, SAP Education (2021)*
3. *ISE Chemistry 13th Edition, Raymond Chang, 8th Edition, Mc Graw Hill (2018)*
4. *Chemistry A Molecular Approach, 5th Edition, Nivaldo J. Tro, Pearson (2020)*
5. *Organic Chemistry, Wade, 9th Edition, Pearson (2017)*
6. *Organic Chemistry 9th Edition McMurry Solution Manual, (2017)*
7. *Chemistry (3): Introducing inorganic, organic and physical chemistry, Andrew Burrows et.al.,Oxford University Press (2021)*

Assessment Methods: *Continuous Assessment: 100%*
Medium of Instruction: *English*

FAD1020 FIZIK ASAS 1 (*BASIC PHYSICS 1*)
(4 credit hours)

Kinematics
Projectile motion; Newton's Law of Motion; Frictions; Work and energy.

Circular Motion
Centripetal acceleration and force; Center of mass and gravity; Torque; Equilibrium of rigid bodies; Moment of inertia; Rotational kinetic energy; Angular momentum and conservation of angular momentum.

Basic Materials Science
Intermolecular forces; Stress and strain; Young's modulus; Shear modulus and Bulk modulus; Materials structure; Materials classification; Properties of materials

Fluids
Archimedes' principle; Continuity equation; Bernoulli's principle; Viscosity

Simple harmonic motion
Kinematics of SHM and energy in SHM; Damped and forced oscillations; Resonance

Waves
Characteristics and types of waves; Resultant and superposition of waves; Huygens principle; Interference; Stationary wave

Physical Optics
Diffraction; Interference; Young's double slit experiment; Newton's ring; Thin film; Polarization

Sound wave
Intensity and sound level; Interference; Beat; Resonance; Doppler's Effect

Heat
Conduction, convection, and radiation; Linear, surface and volume expansions

Thermodynamics
Boyle's, Charles's, and Gay-Lussac laws; Kinetic theory of gases; Energy and work; Zeroth law and First law of thermodynamics; Isobaric, isovolumetric, isothermal, and adiabatic processes; Second law of thermodynamic; Entropy; Carnot engine

At the end of the course, the students must be able to:

1. *Understand the basic concept of physics in the topic of mechanics, basic materials science, fluids, simple harmonic motion, waves, physical optics, heat, and thermodynamics.*
2. *Apply basic principles of physics to solve problems in the topic of mechanics, basic materials science, fluids, simple harmonic motion, waves, physical optics, heat, and thermodynamics*
3. *Analyze the principle of physics to solve problems in the topic of mechanics, basic material science, fluids, simple harmonic motion, waves, physical optics, heat and thermodynamics.*
4. *Actively responds directly or indirectly towards learning.*

Main reference physics:

1. *Pre University Physics (2021), Izlina Supa'at et. al, SAP Malaysia*
2. *College Physics Global Edition (11th), Serway Vuille, Brooks/Cole (GB)*

Assessment Methods: *Continuous Assessment 50%, Final Examination 50%*
Medium of Instruction: *English*

FAD1021 FIZIK AMALI 1 (*PRACTICAL PHYSICS 1*)
(2 credit hours)

Laboratory experiments and experimental simulations under the topic of linear and rotational motion, materials science, fluids, simple harmonic motion, waves, physical optics, heat and thermodynamics

At the end of the course, the students must be able to:

1. *Apply the basic principles of physics in experiments and experimental simulations done under the topic of linear and rotational motion, materials science, fluids, simple harmonic motion, waves, physical optics, heat, and thermodynamics*
2. *Analyze data using the basic principle of physics in experiments done under the topic of linear and rotational motion, materials science, fluids, simple harmonic motion, waves, physical optics, heat, and thermodynamics.*
3. *Execute the features and functions of physics simulations to achieve experimental objectives*

Main Reference Books:

1. *Pre University Physics (2021), Izlina Supa'at et. al, SAP Malaysia*
2. *College Physics Global Edition (11th), Serway Vuille, Brooks/Cole (GB)*

Assessment Methods: *Continuous Assessment 100%*
Medium of Instruction: *English*

FAD1022 FIZIK ASAS 2 (*BASIC PHYSICS 2*)
(4 credit hours)

Electrostatic
Charge and Coulomb's law; Electric field and electric flux; Gauss's law; Electric potential energy and electric potential; Capacitor and dielectric; Combination of capacitors; Charging and discharging of capacitors

Direct current
Kirchoff's Rules and Electrical measurement.

Alternating current
Current and voltage; Phasor diagram, phase difference; resistance, reactance, and impedance; RL, RC and RLC circuits; Power and energy; Resonance

Magnetism
Magnetic field and magnetic force; Ampere's law; Force between two current carrying conductors; Torque; Charge in magnetic field and electric field

Electromagnetism
Magnetic flux; Faraday's law; Lenz law; Induced emf in a conductor; Self-inductance; Energy stored in an inductor; Mutual inductance

Electronics
Semiconductor, Diode, Capacitor, Transistor and Operational Amplifiers.

Quantum Physics
Atomic Physics, Nuclear Physics, Radioactivity, and wave-particle duality.

At the end of the course, the students must be able to:

1. *Understand the basic concept of physics in the topic of electrostatic, electricity, magnetism, electromagnetism, electronics, and quantum physics*
2. *Apply basic principles of physics to solve problems in the topic of electrostatic, electricity, magnetism, electromagnetism, electronics, and quantum physics.*
3. *Analyze the principle of physics to solve problems in the topic of electrostatic, electricity, magnetism, electromagnetism, electronics, and quantum physics*
4. *Actively responds directly or indirectly towards learning.*

Main Reference Books:

1. *Pre University Physics (2021), Izlina Supa'at et. al, SAP Malaysia*
2. *College Physics Global Edition (11th), Serway Vuille, Brooks/Cole (GB)*

Assessment Methods: *Continuous Assessment: 50%, Final Examination: 50%*
Medium of Instruction: *English*

FAD1023 FIZIK AMALI 2 (*PRACTICAL PHYSICS 2*)
(2 credit hours)

Laboratory experiments and experimental simulations under the topic of electrostatics, electricity, magnetism, electromagnetism, electronics, and quantum physics.

At the end of the course, the students must be able to:

1. *Apply the basic principles of physics to solve problems in the topic of electrostatics, electricity, magnetism, electromagnetism, electronics, and quantum physics.*
2. *Analyze data using the basic principle of physics in the topic of electrostatics, electricity, magnetism, electromagnetism, electronics, and quantum physics.*
3. *Execute the features and functions of physics simulations to achieve experimental objectives.*

Main Reference Books:

1. *Pre University Physics (2021), Izlina Supa'at et. al, SAP Malaysia*
2. *College Physics Global Edition (11th), Serway Vuille, Brooks/Cole (GB)*

Assessment Methods: *Continuous Assessment 100%*
Medium of Instruction: *English*

FAD1013 MATEMATIK I (*MATHEMATICS I*)
(4 credit hours)

Algebra
Real numbers: The real number system, introduction to notations of sets of real numbers. The real number line. Algebraic operations on real numbers. Properties of real numbers.

Complex numbers: Algebraic operations on complex numbers. Conjugate. Argand diagram. Euler and De Moivre's theorems. Roots of a complex number.

Exponents, radicals and logarithms: Exponential notations, laws of exponents. Simplifying expressions. Rational exponents. Laws of radicals. Simplifying radical expressions. Solutions to exponential, radical and logarithmic equations.

Systems of equations in two variables: Revision of quadratic equations. Systems of linear equations. Systems involving linear and quadratic equations.

Inequalities: Basic concepts on inequalities. Inequalities in one variable; linear and quadratic. Rational inequalities, inequalities involving modulus. Solving by graphical method.

Polynomials; long division, synthetic division. Remainder theorem and factor theorem. Express polynomials in linear factors.

Partial fractions.

Vector algebra.

Trigonometry

Angles, Trigonometric Functions and Graphs. Trigonometric Values for Special Angles. Application of Trigonometric Problems. Trigonometric Identities and Proof. Trigonometric Equation & the addition and subtraction formulas. Multiple angles formula. Product to sum formula and sum-to-product formula.

Calculus

Basic Functions, Domains and Graphs: Linear, Quadratic, Cubic, Rational Logarithm, Exponential, Radical, Piecewise and Modulus Functions. Limit of a function intuitively. Limit theorems. Limit computational techniques. One-sided limits. Continuous at a point. Limit to infinity. Asymptote lines. Definition and geometric interpretation of differentiation. Differentiation from first principles. Differentiation of standard functions. Differentiation of trigonometric functions. Differentiation of logarithmic and exponential functions. Rules of differentiation. Chain rule and Power Rule. Differentiation of implicit functions and parametric equations. Logarithmic differentiations. Application of differentiations: gradient of any curve, equation of tangent and normal to any curve (curve including circle, parabola, hyperbola and ellipse).

Higher order differentiation. Increasing and decreasing functions. Critical/Stationary points. Local extremum. Absolute extremum. Concavity and Inflection point. Graph sketching. Optimization problems.

At the end of the course, students are able to:

1. *Describe relevant concepts, terminology, and notation in algebra, vector, function, differentiation, inequalities and complex numbers.*
2. *Use appropriate combinations of techniques to solve problems in algebra, vector, function, differentiation, inequalities and complex numbers.*
3. *Present written and verbal work/solution with avid interest and able to give opinion on the topic at hand.*

Main Reference Books:

1. *Shariff, F. A. Manaf & I. Mohamed. (2020). College Mathematics, IPTA Publisher.*
2. *A.H. Yaakub et. al. (2019). Mathematics for matriculation: Semester 2, Fifth Edition Updated. Oxford Fajar.*
3. *Ong Beng Sim et al. (2018). Mathematics for Matriculation Semester 1, Fifth Edition, Oxford Fajar.*
4. *Ong Beng Sim et al. (2018). Mathematics for Matriculation Semester 2, Fifth Edition, Oxford Fajar.*

Assessment Methods: *Continuous Assessment 50%, Final Examination 50%*
Medium of Instruction: *English*

FAD1014 MATEMATIK II (*MATHEMATICS II*)
(3 credit hours)

Calculus

Anti-derivative and standard results, definite integrals.

Techniques of integrations: integration using partial fractions, integration by substitution, integration by parts.

Integration of trigonometric functions.

Integration of the quadratic function by using the trigonometric substitution.

Application of integrations: area between two curves and volume of revolution.

First order differential equations.

Algebra

Sequences: convergent and divergent sequence, the summation ($\sum$) notation.

Arithmetic series: arithmetic sequence, summation of finite arithmetic series.

Geometric series: geometric sequence, summation of a finite geometric series, summation of the infinite geometric series. Summation of a finite series: summation of $\sum i^k, k = 1,2,3$, method of difference.

The binomial expansion: factorial, the binomial theorem for a positive integral index, the binomial theorem for any rational index.

Power series: Maclaurin and Taylor series for various functions, application of Maclaurin and Taylor series.

Geometry:

Revisions on distance, gradients, straight lines. Angle between two lines. Perpendicular distance from a point to a line. Curves: parabolas, circles, ellipses and hyperbolas. Their definitions, equations, sketching their respective graphs.

At the end of the course, the students are able to:

1. *Describe relevant concepts, terminology, and notation related to integration, differential equations, series and geometry.*
2. *Use appropriate combinations of techniques to solve problems related to integration, differential equations, series and geometry.*
3. *Present work/solution digitally, showing avid interest and able to give opinion on the topic assigned.*

Main Reference Books:

1. *Shariff, A. A., Manaf F. A., Mohamed, I. & Kasmani, R. (2022). Pre-University Mathematics Latest Syllabus, SAP Publication.*
2. *Yaakub, A. H., Sim, O. B., Zubairi, Y. Z., Eng, T. C., et.al. (2019). Mathematics for Matriculation Semester 2 Fifth Edition Updated, Oxford Fajar.*

Assessment Methods: *Continuous Assessment 50%, Final Examination 50%*
Medium of Instruction: *English*

FAD1015 MATEMATIK III (*MATHEMATICS III)*
(3 credit hours)

Permutation and combination. Definition and rules of probability, conditional probability, independent events. Random variables, probability distributions of discrete and continuous random variables, expected values, variance and standard deviation. The uniform, binomial, Poisson and normal distributions. Poisson and normal approximation to the binomial distribution.

Hypothesis testing.

Matrices: algebra operations on matrices, using matrices to solve systems of linear equations, elementary row operations.

At the end of the course, the students are able to:

1. *Describe relevant concepts, terminology, and notation related to matrices and statistics.*
2. *Use appropriate combinations of techniques to solve problems in matrices and statistics.*
3. *Use statistical software for data processing and evaluate results from the activity.*

Main Reference Books:

1. *Shariff A. A., Manaf F. A. & Mohamed I. (2020). College Mathematics, IPTA Publisher.*
2. *Levine, D. M. (2017). Statistics for managers using Microsoft Excel. Pearson.*
3. *Braun, W. J., & Murdoch, D. J. (2021). A first course in statistical programming with R. Cambridge University Press.*

Assessment Methods: *Continuous Assessment 50%, Final Examination 50%*
Medium of Instruction: *English*

FAC1001 MATEMATIK TAMBAHAN I (*ADVANCED MATHEMATICS I*) *(3 credit hours)*

Vector Geometry:
Vector quantity. Properties of vectors. Representation of vectors. Position vector. Resultant vector.

Example: Directed line segment for scalar multiplication, addition & subtraction of vectors. Negative vector, parallel vector, free vector. Triangle law, parallelogram & polygon. Vectors in geometry (proving the geometrical properties and ratio theorem). Vectors in velocity problems (resultant & relative velocity).

Algebraic & Cartesian Vector (Vector in 3-dimensional):

Magnitude and the distance between two points. Vector components. Unit vector. Direction ratio and direction cosines.

Algebraic operations of vectors: The laws of vector algebra. Operation of addition, subtraction and scalar multiplication. Scalar & vector product.

Applications of scalar & vector product: Angle between two vectors. Scalar and vector projections. Area of triangle and parallelogram. Volume of parallelepiped.

Lines and planes: Equations in vector, cartesian & parametric representations. Intersections of lines, planes and line-plane. Angles between lines, planes and line-plane. Distances between lines, planes and line-plane.

Vector calculus
Vector-valued functions: Two-dimensional and three-dimensional of parametric expressions in vector form, $\mathbf{r}(t) = f(t)\mathbf{i} + g(t)\mathbf{j} + h(t)\mathbf{k}$ *(straight line, parabola, circle, ellipse & helix).*
Vector functions: Limits, derivatives and integrals. Properties of vector derivatives. Velocity & acceleration.
The motion of an object in a plane (circular & projectile motion)

At the end of the course, students are able to:

1. *Describe fundamental vector concepts and principles in Vector Algebra, Cartesian & Geometry Vector and Vector Calculus.*
2. *Apply appropriate vector methods to solve problems involving Vector Algebra, Cartesian & Geometry Vector and Vector Calculus.*
3. *Present written and verbal solution through active involvement in group work.*

Main Reference Books:

1. *Shariff, A. A., Manaf F. A., Mohamed, I. & Kasmani, R. (2022). Pre-University Mathematics Latest Syllabus, SAP Publication.*
2. *Polanco, C., (2019). Advanced Calculus – Fundamentals of Mathematics, Bentham Science Publishers Pte. Ltd. Singapore.*
3. *Nayak, P. K., (2017). Vector Algebra and Analysis with Applications, Universities Press (india) Pvt Ltd.*

Assessment Methods: *Continuous Assessment 50%, Final Examination 50%*
Medium of Instruction: *English*

FAC1002 PENGATURCARAAN I (*PROGRAMMING I)*
(3 credit hours)

The module will focus on Computer Information Systems with Computer Engineering Science, Discrete Mathematics, and Computing Algorithm.

At the end of the course, students are able to:

1. *Describe concepts, terms, and notations related to programming as well as technical aspects such as computer hardware, computer software, computer code, truth tables and logic circuits.*
2. *Solve problems in computer programming with theoretical frameworks (problem analysis and input-output charts), algorithms, pseudocode and simple coding.*

Main Reference Books:

1. *Mohammad, W. A. W., & Mydin, A. M. (2019). Introduction to C++ Programming (2nd ed.). Oxford Fajar : Oxford University Press.*
2. *Deitel, P. J., & Deitel, H. (2017). C++ How to Program (ISBN 9780134448237). Pearson.*

Assessment Methods: *Continuous Assessment 50%, Final Examination 50%*
Medium of Instruction: *English*

FAC1003 PENGATURCARAAN II (PROGRAMMING II)
(3 credit hours)

This module will focus on C++ syntax coding to solve problems in computer programming.

At the end of the course, the students are able to:

1. *Describe relevant concepts, terminology, and notation related to programming.*
2. *Develop computer programs using a structured and modular approach in solving problems and syntax encoding with C++.*

Main Reference Books:

1. *Mohammad, W. A. W., & Mydin, A. M. (2019). Introduction to C++ Programming (2nd ed.). Oxford Fajar : Oxford University Press.*
2. *Deitel, P. J., & Deitel, H. (2017). C++ How to Program (10th edition). Pearson.*
3. *Gaddis, T., Walters, J., & Muganda, G. (2021). Starting out with C++. Early objects. Pearson Education.*

Assessment Methods: *Continuous Assessment 60%, Final Examination 40%*
Medium of Instruction: *English*

FAC1004 MATEMATIK TAMBAHAN II (*ADVANCED MATHEMATICS II*) *(3 credit hours)*

Complex numbers: Functions of complex numbers, loci, applications of complex numbers.

Inverse trigonometric and hyperbolic functions: graphs, identities, derivatives.

First Differential equation: Classifying and solution, Nonhomogeneous equations, exact equations, Bernoulli equations. Applications of differential equations.

At the end of the course, students are able to:

1. *Explain concepts involving complex numbers, hyperbolic and inverse trigonometric functions, and differential equations.*
2. *Apply appropriate techniques to solve problems involving complex numbers, hyperbolic and inverse trigonometric functions, and differential equations.*
3. *Present written and verbal through active participation in group work.*

Main Reference Books:

1. *K.A. Stroud & D.J. Booth Bolton. (2020). Engineering Mathematics, Palgrave Mcmillan. (Seventh Edition).*
2. *K. Singh, Engineering Mathematics through applications. (2019). Palgrave Mcmillan. (Second Edition).*

Assessment Methods: *Continuous Assessment 50%, Final Examination 50%*
Medium of Instruction: *English*

ASASI SAINS SOSIAL

FAG1001 KEMAHIRAN BERFIKIR (*THINKING SKILLS*)
(3 credit hours)

Critical thinking is the process of developing and supporting our beliefs and evaluating the strength of arguments made by others in real-life situations. It involves actively and skilfully conceiving, applying, analysing, and evaluating information gathered from observation, experience, reflection, reasoning or communication as a guide to belief and action. This course encourages students to reflect on the processes of thinking, as well as developing and practicing thinking skills.

At the end of the course, students are able to:

1. *Explain the concept of critical and creative thinking in the field of social science.*
2. *Solve problems by using relevant critical thinking skills for real life situations.*
3. *Show communication skills in a team for better problem solving.*

Main Reference Books:

1. *Cottrell, S. (2017). Critical thinking skills: Developing effective analysis and argument (3rd. Ed.). MacMillan Education, UK.*
2. *Moore, B. N. (2017). Critical thinking (12th ed.). McGraw Hill Education.*
3. *Kallet, M. (2014). Think smarter: Critical thinking to improve problem-solving and decision making skills. New Jersey: John Wiley & Sons, Inc.*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1002 BAHASA INGGERIS I (*ENGLISH I*)
(3 credit hours)

This course aims to equip students with listening and speaking skills in English. Students will be able to understand and explain a variety of different information through a variety of discussions and listening assignments. They will also be able to convey information and views effectively.

At the end of the course, students are able to:

1. *Explain various information from a range of listening tasks.*
2. *Interpret information from extended discussion.*
3. *Deliver information and viewpoints effectively.*

Main Reference Books:

1. *Betsis, A. & Haughton, S. (2015). Succeed in Trinity ISE I: Listening & Speaking Student's Book. London: Global ELT.*
2. *Betsis, A. & Mamas, L. (2016). Succeed in IELTS Life Skills: Speaking & Listening. London: Global ELT.*
3. *Ostrowska, S. (2016). Unlock: Listening & Speaking Skills 3. Cambridge: Cambridge University Press.*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1003 ASAS TEKNOLOGI MAKLUMAT DAN KOMUNIKASI (*BASIC INFORMATION AND COMMUNICATION TECHNOLOGY)* (ICT)
(3 credit hours)

This course aims to prepare students with sufficient up-to-date information and communication technology knowledge and skills that are consistent with current ICT trends. It covers IT literacy, information systems, social informatics and network computing.

At the end of the course, students are able to:

1. *Describe basic concepts and roles of ICT in the organization.*
2. *Apply ICT tools to solve problems faced by the organization.*
3. *Demonstrate skills in using appropriate ICT tools for organizational effectiveness.*

***Main Reference Books**:*

1. *Brown G., Sergent B., and Watson D. (2021). Cambridge IGCSE, Information and Communication Technology (3rd. Ed.). Hodder Education*
2. *Farah W. J. et al (2017), Information System An Introduction (2nd Ed.)., Oxford University Press*
3. *Robert,T.G.(2017) Exploring Getting Started with Computing Concepts(3rd Ed.).Pearson*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1004 MATEMATIK (*MATHEMATICS*)
(4 credit hours)

This course is designed to develop students' confidence with mathematical concepts and relationships. Students will be able to use mathematics and statistical skills and techniques in a range of contexts, specifically problem solving and abstract thinking. Topics covered are numbers, functions and polynomials, sequence and series, matrices, derivatives, integrals, basic statistics and probability.

At the end of the course, students are able to:

1. *Identify the fundamental concepts and principles of various mathematical methods.*
2. *Apply a variety of quantitative approaches in problem solving.*
3. *Show a range of mathematical skills as a logical and coherent subject.*

***Main Reference Books**:*

1. *Barnett, R., Ziegler, M., Byleen, K. and Stocker, C., 2019. College Mathematics for Business, Economics, Life Sciences, and Social Sciences. 14th ed. Pearson.*
2. *Ahmad Shariff, A., Abd. Manaf, F. and Mohamed, I., 2021. Comprehensive College Mathematics. SAP Publications.*
3. *Ong, B., Nuruddin, M., Lee, K., Noor, C. and Zubairi, Y., 2018. Mathematics for Matriculation Semester 1. 5th ed. Oxford Fajar.*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1005 BAHASA INGGERIS II (*ENGLISH II*)
(3 credit hours)

This course aims to equip students with reading and writing skills in English. Students will be able to explain a variety of different information through reading assignments and demonstrate ability to compose a wide variety of essays using appropriate writing conventions. They can also write thesis statements, topic sentences, supporting details, and key ideas in reading and writing assignments.

At the end of the course, students are able to:

1. *Explain various information from a range of reading tasks.*
2. *Show ability to compose different types of essays using appropriate writing conventions.*
3. *Write thesis statement, topic sentence, supporting details, and main ideas in reading and writing tasks.*

***Main Reference Books**:*

1. *Betsis, A. & Lethem, L. (2018). Practicing for Trinity ISE I: Reading & Writing. London: Global ELT.*
2. *Blanchard, K. & Root, C. B. (2016). Ready to Write 2 (B1) Student Book with Essential Online Resources. London: Pearson ELT.*
3. *Westbrook, C. (2014). Unlock: Reading & Writing Skills 3. Cambridge: Cambridge University Press*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1006 KO-KURIKULUM (*CO-CURRICULUM)*
(2 credit hours)

This course aims to produce students who are able to apply soft skills, mainly basic leadership and life- long learning skills, to promote a positive attitude and moral values.

At the end of the course, students are able to:

1. *Demonstrate characteristics as an entrepreneur in event management.*
2. *Demonstrate leadership skills in co-curricular activities conducted.*

***Main Reference Books**:*

1. *Ahmad Esa, Mohd. Khir Mohd Nor, Nawawi Jusoh, Norashidah Abd Rahman & Zalinah Salehon (2015). Citra kokurikulum. Penerbit UTHM.*
2. *Wankel, L. A., & Wankel, C. (Eds.) (2016). Integrating curricular and co-curricular endeavors to enhance student outcomes. Emerald Group Publishing Limited.*
3. *Asas Pengurusan Aktiviti Kokurikulum di Institusi Pendidikan - Dr Zainun Ishak (2019), ZIT Publishing.*

***Assessment Methods**: Continuous Assessment 100%*
***Medium of Instruction**: English*

FAG1007 ASAS PENGURUSAN (*FUNDAMENTALS OF MANAGEMENT)*
(4 credit hours)

This course will prepare students with a basic understanding of the functions of management in business organizations. It relates to the principles and theories of management, practices of Planning, Organizing, Leading, and Controlling (POLC), organizational design and communication within business entities.

At the end of the course, students are able to:

1. *Explain the concepts, practices and roles of management in the organization.*
2. *Apply the effective management process in managing the organization.*
3. *Demonstrate appropriate communication skills for organizational effectiveness.*

Main Reference Books:

1. *Norlida Kamaluddin et al. (2018), Principles of Management, 3rd Edition, Oxford*
2. *Robbins, S. P., & Coulter, M.A. (2021). Management (15th ed.). Pearson*
3. *Certo, S.C., & Certo, S.T., (2016). Modern management: Concepts and skills (14th ed.), Pearson*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1008 PRINSIP EKONOMI (*PRINCIPLES OF ECONOMICS*)
(4 credit hours)

This course aims to provide students with an overview of economics. The course facilitates students with an understanding of basic economic concepts and disciplines. Students will be exposed to the core areas of microeconomics and macroeconomics. The course introduces students to market fluctuations which involve the behaviours of consumers and producers. It also introduces the basic macro study such as national growth and its issues, as well as analysing policies in influencing economic conditions.

At the end of the course, students are able to:

1. *Explain the basic concepts and theories in economics.*
2. *Demonstrate the role of government in achieving market equilibrium.*
3. *Identify the behaviour of economic units in making decisions about consumption and production.*

Main Reference Books:

1. *Sarimah Aman Shah, Abd. Rashid Mohd Ali & Norsela A.Manof (2017), Principle of Economics, 3rd Ed., Oxford Fajar*
2. *Hubbard, R.G., & O'Brien, A.P. (2019). Essentials of economics (6th ed.). United Kingdom: Pearson*
3. *Mankiw, N. G. (2018). Essentials of economics (8th ed.). Connecticut: Cengage.*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1009 PENGENALAN KEPADA UNDANG-UNDANG (*INTRODUCTION TO LAW*)
(4 credit hours)

This course provides students with an understanding of legal concepts, meanings, functions, classifications and some basic principles of legal liability. It outlines a brief history, legal sources and organization of the courts in the legal system in Malaysia. It also exposes students to the legal profession in Malaysia.

At the end of the course, students are able to:

1. *Explain and describe the meaning, functions and classification of law.*
2. *Identify the various sources of law.*
3. *Explain the operations of law and institutions related to it.*

Main Reference Books:

1. *Wan Arfah - A First Look at Malaysian Legal System Oxford University Press; 1st edition (July 25, 2012)*
2. *Williams, G. (2016). Learning the law (16th ed.). London: Sweet & Maxwell.*
3. *Partington, M. (2018). Introduction to the English legal system (13th ed.). Oxford University Press.*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1010 PERAKAUNAN KEWANGAN (*FINANCIAL ACCOUNTING*)
(4 credit hours)

This course provides students with basic knowledge and skills in accounting concepts, bookkeeping concepts and financial reporting procedures, which are applicable to business entities. Students will learn about the accounting equation, double entry system, journal and ledger, and preparing financial statements for financial reporting purposes.

At the end of the course, students are able to:

1. *Identify the needs of accounting for individuals and business.*
2. *Apply the principles of basic financial accounting in business entities.*
3. *Prepare statement of profit and loss and statement of financial position in business.*
4. *Demonstrate skills in recording and preparing accounting statements in business.*

Main Reference Books:

1. *Mohd Nizal Hanif et al. (2018), Fundamentals of Financial Accounting. 2nd Edition, Oxford.*
2. *Sangster, A., & Wood, F. (2019). Business accounting volume 2 (14th ed.). Pearson.*
3. *Weagant, J.J., Kimmel, P.D., & Keiso, D.E. (2018). Accounting principles (12th ed.). Wiley*
4. *James A. Hall (2018). Accounting Information Systems. 10th Edition. Cengage Learning.*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1011 PRINSIP PENGURUSAN (*PRINCIPLES OF MARKETING*)
(4 credit hours)

This course provides students with an understanding of marketing concepts, functions and roles in business organizations. It exposes students to product, pricing, distribution, promotion, marketing communication, and basic internet marketing.

At the end of the course, students are able to:

1. *Describe the basic concepts of marketing principles in business organizations.*
2. *Use concept of marketing environment in formulating marketing strategy for a business organization.*
3. *Choose appropriate marketing tools in the formation of marketing strategies.*

***Main Reference Books**:*

1. *Kotler, P., and Armstrong, G (2023), Marketing: An Introduction, 15th Edition, Pearson.*
2. *Yusniza Kamarulzaman & Norkhalidah Abu (2017), Principles of Marketing, 3rd Edition, Oxford Press.*
3. *Kotler, P., and Keller, G. & Chernev, A (2022), Marketing Management, 16th Edition, Pearson.*
4. *Kotler, P., and Armstrong, G (2021), Principles of Marketing 18th Edition, Pearson.*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1012 PERAKAUNAN PENGURUSAN (*MANAGEMENT ACCOUNTING*) *(4 credit hours)*

This course provides students with basic knowledge and skills in managerial accounting concepts, budgeting and costing procedures applicable to business entities. Students will learn about the cost, overhead, cost behaviour, budgets and variance analysis in performing a cost analysis of business organizations.

At the end of the course, students are able to:

1. *Explain the concept and basic principles of costin business.*
2. *Apply the concepts of cost in accounting formaterials, labour and overhead.*
3. *Use appropriate techniques and analysis baseon accounting information in business operations.*
4. *Show basic management accounting methods for planning, performance evaluation, record and decision making purposes.*

***Main Reference Books**:*

1. *Rozainun Abdul Aziz et al. (2018), Management Accounting. 3rd Edition. Oxford*
2. *Garrison, R., Brewer, P. Noreen, E. (2018). Managerial Accounting. 16th Edition. McGraw Hill*
3. *Drury, Colin. (2018). Cost and Management Accounting. 10th Edition. Cengage.*
4. *Bhimani, A., Datar, S.M., Horngren, C.T., & Rajan, M.V. (2019). Management and cost accounting (7th ed.). Pearson.*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1013 ASAS PSIKOLOGI (*FUNDAMENTALS OF PSYCHOLOGY*) *(4 credit hours)*

This course develops students with an understanding of the concepts, principles, history, and approaches in psychology.

At the end of the course, students are able to:

1. *Describe the concepts and principles used in psychology, their applications, and their connections.*

2. *Explain how concepts and methods of psychology can be applied to everyday life situations and in the study of human behaviours.*
3. *Discuss how the history and study of psychology has developed in terms of approaches and treatments for psychological disorders.*

***Main Reference Books**:*

1. *Carole Wade, Carol Tavris, Samuel R Sommers, Lisa M. Shin (2020). Psychology, (13th edition) Pearson*
2. *Kalat, J. W. (2021). Introduction to psychology (12th edition) Cengage Learning.*
3. *Myers, D.G. and DeWall, C.N. (2015). Psychology (11th ed.). Worth Publishers. ISBN-13: 978-1464140815*
4. *Myers, D.G. (2013). Psychology (10th ed.). Worth Publishers. ISBN-13: 978-1429261784 Johnson, J.G. (2011). Introduction to psychology (2nd ed.). Harper Collins Publisher. ISBN-13: 978-0060881528*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1014 SOSIOLOGI (*SOCIOLOGY*)
(4 credit hours)

This course prepares students with the basic understanding of the principles of sociology. The coverage of the topics relates to the origins and historical development of sociology until now. Students will learn about culture, society, socialisation and social institutions within a contemporary social structure. This course is expected to upgrade the understanding level of students to build expertise and the ability to critically analyse issues in the sociology field.

At the end of the course, students are able to:

1. *Explain basic sociological concepts.*
2. *Apply three major perspectives in sociology.*
3. *Identify sociological issues within the contemporary environment.*

***Main Reference Books**:*

1. *Macionis, J. J. (2018). Sociology (17th ed.). New Jersey: Prentice Hall Inc.*
2. *2. Schaefer, R.T. (2016) Sociology: A brief Introduction (12th ed.). New York: McGraw-Hill.*
3. *Mohan, B. (2022). Introduction to Sociology: Concepts and Theories. Taylor & Francis.*
4. *Karim Murji, Sarah Neal & John Solomos (2021). An Introduction to Sociology. United Kingdom Sage Publication*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1015 KEMAHIRAN MENULIS DAN PENYELIDIKAN (*WRITING AND RESEARCH SKILLS*)
(4 credit hours)

This course prepares students for social sciences research, skills of academic writing, and research methods. Students will have skills on developing research design, collection, analysis and reporting of research data. This course also exposes students to ethical issues in academic writing and research.

At the end of the course, students are able to:

1. *Explain the basic methods of research in social science.*
2. *Demonstrate basic descriptive statistical calculation skills from raw data.*

3. *Demonstrate skills in preparing research proposal papers based on problems for the purpose of academic papers.*
4. *Identify the role and impact of ethics in research for the purpose of academic writing.*

***Main Reference Books**:*

1. *Sekaran, U., and Bougie, R. (2016), Research Methods for Business, A Skill-Building Approach, 7th Edition, John Wiley & Sons Ltd.*
2. *Christensen, L. B., Jonson, R, B. and Turner, L. A. (2022), Research Methods, Design, and Analysis, 13th Edition, Pearson.*
3. *McMilan J. H. (2022) Educational Research: Fundamental Principles and Methods, 8th Edition, Pearson.*
4. *Malhotra, N.K. (2010), Marketing Research: An Applied Orientation, 6th Edition, Pearson.*
5. *Tompkins, G. E., Roger, E., and Roger, A., (2022), Literacy for the 21st Century: Balancing Reading and Writing Instruction, 8th Edition Pearson.*
6. *Internet sources*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1016 PENGENALAN KEPADA KEWANGAN (*INTRODUCTION TO FINANCE*) *(4 credit hours)*

This course prepares students with the concepts, roles, and principles of financial management in business organisations. Students will review the roles of financial markets, institutions and environment as well as performing basic analysis in regards to the time value of money, financial statements and capital budgeting for business decisions.

At the end of the course, students are able to:

1. *Identify the role of markets and financial institutions in financial management.*
2. *Apply the concepts of future and present values as well as the components involved in calculations.*
3. *Use financial statements for the purpose of ratio analysis in determining the performance of a company.*
4. *Demonstrate capital and cash budget evaluation methods in decision making.*

***Main Reference Books**:*

1. *Ng Kean Kok et al. (2018). Financial Management. 3rd Edition. Oxford.*
2. *Brigham, E.F., & Houston, J.F. (2020). Fundamentals of financial management (10th ed.). Cengage.*
3. *Brooks, R. (2019). Financial management: Core concepts (4th ed.). Pearson.*
4. *Gitman, L.J., & Zutter, C. J. (2015). Principles of managerial finance (7th ed.). Pearson.*
5. *Titman, S. & Keown, A.J. (2018). Financial management: Principles and applications (13th.ed.). Pearson.*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1017 PENGENALAN KEPADA SENI VISUAL (*INTRODUCTION TO VISUAL ARTS*) *(4 credit hours)*

This course introduces key concepts and principal methods in the study of art and visual culture. Drawing on examples from across the world, students are introduced to topics such as the changing definition of art, works of art as material objects, works of art in social, cultural, and political contexts, and display practices of museums and galleries. The course will not only enhance your enjoyment and understanding of art and visual culture for pleasure, but also develop foundation skills in writing, discussing and researching art.

At the end of the course, students are able to:

1. *Understand the diversity of art and visual culture in local and global contexts through a variety of themes and issues.*
2. *Develop the skill to interpret images and objects.*
3. *Describe the fundamental concepts and methods of studying visual art and culture to a creative research project.*

Main Reference Books:

1. *Gray, George T., An introduction to the history of architecture, art & design (Bandar Sunway, Selangor: Sunway University Press, 2022)*
2. *Roger Nelson, Modern Art of Southeast Asia A-Z (Singapore: National Gallery of Singapore, 2019)*
3. *Narratives in Malaysian Art Vol. 1-4. (Kuala Lumpur: Rogue Art, 2012-2019) http://narrativesinmalaysianart.blogspot.com/p/narratives-in-malaysian-art-volumes-14.html*
4. *Sabapathy, T.K. 2018. Writing the modern: selected texts on art & art history in Singapore, Malaysia & Southeast Asia, 1973-2015, edited by Ahmad Mashadi, Susie Lingham, Peter Schoppert and Joyce Toh (Singapore: Singapore Art Museum, 2018)*
5. *World art studies: exploring concepts and approaches, edited by Kitty Zijlmans, Wilfried van Damme (Amsterdam: Valiz, 2008)*

***Assessment Methods**: Continuous Assessment: 100%*
***Medium of Instruction**: English Continuous Assessment: 100*

FAG1018 MEDIA DAN KOMUNIKASI MASSA (*MASS MEDIA AND COMMUNICATION*) *(4 credit hours)*

This course provides students with an overview of the effect and impact of mass media communication on contemporary life and society. All topics cover the historical evolution of media as well as the contemporary development of new media and issues. Students will learn about various mass media channels, advertising, public relations and their social effects.

At the end of the course, students are able to:

1. *Explain mass Media and communication concepts, models, channels and techniques.*
2. *Apply appropriate use of media channels and techniques.*
3. *Adapting mass media tools and resources in conveying information effectively and ethically.*

Main Reference Books:

1. *Baran, S., (2017). Introduction to mass communication: Media literacy and culture (8th ed.). McGraw Hill.*
2. *Dominick, J.R., (2012). The dynamic of mass communication: Media in transition (12th ed.). McGraw Hill.*

3. *Doug Specht. (2020). The Media and Communications Study Skills Student Guide. University of Westminster Press.*
4. *Paddy Scannell. (2020). Media and Communication. SAGE Publications.,*
5. *Simone Murray. (2020). Introduction to Contemporary Print Culture: Books as Media. Routledge*
6. *Stephanie A. Smith. (2018). Careers in Media and Communication. SAGE Publications*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1019 KEMAHIRAN PERUNDANGAN (*LEGAL SKILLS*)
(4 credit hours)

This course provides students with basic skills in research, reading, analysing and application of legal sources.

At the end of the course, students are able to:

1. *Explain common legal terminologies.*
2. *Use relevant methods in conducting basic information search.*
3. *Identify appropriate legal authorities in problem solving.*

***Main Reference Books**:*

1. *Wan Arfah - A First Look at Malaysian Legal System Oxford University Press; 1st edition (July 25, 2012)*
2. *Fatinski, E. F. and S. (2017). Legal skills (6th ed.). Oxford: Oxford University Press.*
3. *Hanson, S. (2016). Learning legal skills and reasoning (4th ed.). Taylor and Francis LTD*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1020 ASAS TARI KONTEMPORARI (*BASIC CONTEMPORARY DANCE*)
(4 credit hours)

Students are exposed to warm up exercises, breathing techniques, contemporary dance movement techniques through floor work, centre work and cross-floor exercises. Introduction to contemporary dance movement elements and practicing contemporary dance segments are also part of the learning activities.

At the end of the course, students are able to:

1. *Describe the movement elements of a contemporary dance performance.*
2. *Show the basic steps and movements in contemporary dance.*
3. *Perform contemporary dance segments with*

***Main Reference Books**:*

1. *Melanie, C. (2020). The Essential Guide to Contemporary Dance Techniques. Marlborough: The Crowood Press.*
2. *Butterworth, J., Sanders, L. (Ed). (2021). Fifty Contemporary Choreographers (3rd Edition). Oxon: Routledge*
3. *Miriam Giguere, M. (2013). Beginning Modern Dance. Human Kinetics.*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1021 PENGENALAN KEPADA SENI PERSEMBAHAN MALAYSIA (*INTRODUCTION TO MALAYSIAN ARTS PERFORMANCE*)
(4 credit hours)

This course introduces students to the forms, styles and genres of performing arts (drama, dance and music) in Malaysia. Students are also exposed to modern and traditional performing arts in Malaysia. In addition, students will also be exposed to information about career opportunities in the field of performing arts.

At the end of the course, students are able to:

1. *Identify the characteristics of theatre, music and dance in Malaysia*
2. *Write a report on theatre, music and dance in Malaysia that has been watched.*
3. *Describe modern and traditional performing arts in Malaysia*

***Main Reference Books**:*

1. *Seni Persembahan Tradisional Malaysia (2019). Penulis cawangan dokumentasi dan penerbitan JKKN.*
2. *Zimmerman, Suzi (2020). Introduction to Theatre Arts 1: Volume One. Meriwether Publishing*
3. *Kassing, Gayle (2017). History of Dance. Human Kinetics*
4. *Hoffer, Charles (2017). Introduction to Music Education, Fourth Edition. Waveland Press, Inc*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1022 ASAS PRAKTIS MUZIK (*BASIC MUSIC PRACTICE*)
(4 credit hours)

This course introduces students to the fundamental skills of playing musical instruments. Students will learn to identify the basic elements of music practice, which are melody, rhythm, harmony and improvisation. At the end of the course, students will show their acquired basic skills in playing a musical instrument. Students are required to record a video of their playing and stage a performance of popular music (including jazz, rock and folk) songs selected by the students themselves.

At the end of the course, students are able to:

1. *Identify the basic elements of music practice: melody, rhythm and harmony (C1)*
2. *Show basic skills in playing a musical instrument (P1)*
3. *Execute a music performance that demonstrates basic skills in music practice (P2*

***Main Reference Books**:*

1. *Adil, J. 2022. 'Transnational motilities, intercultural rhythms: the journey of a drummer in Malaysian popular music, 1980s and 1990s'. JATI-Journal of Southeast Asian Studies, 27(1), 127 151.*
2. *Allingham, E. & Wöllner, C. 2022. 'Slow practice and tempo management strategies in instrumental music learning: Investigating prevalence and cognitive functions'. Psychology of Music, 50(6), 1925-1941.*
3. *Choong, H., 2022. 'The learning experiences and musical proficiencies of formal and informal popular musicians in Malaysia'. International Journal of Music Education, 1-13*
4. *De Bruin, L.R. and Southcott, J. eds., 2022. Musical Ecologies: Instrumental Music Ensembles Around the World. New York: Routledge.*

5. *Hill, S.C., 2022. 'An investigation of musical "boundary crossers"'. Research Studies in Music Education, 44(1), 219-233.*
6. *Jerome, C., Su-Hie, T. and Perry, E.J., 2022. 'Rethinking visions of "unity" and "belonging": insights into audience responses towards popular music of Malaysia's indigenous ethnic communities - a case of Iban pop song'. Kajian Malaysia: Journal of Malaysian Studies, 40(1), 109-131.*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

FAG1023 ASAS TARI MELAYU (*BASIC MALAY DANCE*)
(4 credit hours)

This course will introduce Malay Folk Dance genres that are commonly choreographed and performed for stage performances. This introductory course will introduce the basic movements of Inang, Zapin and Malay Joget.

At the end of the course, students are able to:

1. *Explain the background and terminology of Malay dance especially the Inang, Zapin and Joget dances.*
2. *Show movements and steps of Malay dance especially Inang, Zapin and Joget dances.*
3. *Perform Malay dance: Inang, Zapin and Joget dances.*

***Main Reference Books**:*

1. *Mohd Anis Md Nor. "Eclecticism and Syncretic Traditions: The Making of Malay Folk Dance," In Mohd Anis Md Nor and Burridge, Stephanie (ed.) Sharing Identities: Celebrating Dance in Malaysia. New Delhi: Routledge, pp. 37-55. 2011.*
2. *Tengku Mira Sinar, Mahyudin Al Mudra, SH, MM (ed). Teknik Pembelajaran Dasar Tari Melayu (Tari Melayu Tradisional). Medan: Adicita Karya Nusa. 2011.*
3. *Mohd Anis Md Nor (2018) "Ronggeng Re-Invented: The Emergence of New repertoires from Singapore to Peninsular Malaysia," Proceedings of the 5thSymposium of the ICTM Study Group on Performing Arts of Southeast Asia. Edited by Patricia Matusky, Wayland Quintero et al. Kota Kinabalu: Department of Sabah Museum, pp. 54-59.*

***Assessment Methods**: Continuous Assessment 50%, Final Examination 50%*
***Medium of Instruction**: English*

KEMUDAHAN DI KAMPUS

Penginapan

Terdapat empat belas buah kolej kediaman yang disediakan oleh pihak universiti. Semua pelajar Pusat Asasi Sains **DIWAJIBKAN** tinggal di Kolej Kediaman seperti yang diarahkan oleh Unit Penginapan Bahagian Hal Ehwal Pelajar.

Klinik Kesihatan Pelajar

Pihak universiti juga telah menyediakan perkhidmatan kesihatan di Klinik Kesihatan Pelajar yang terletak di Bangunan Siswarama, Fakulti Sastera & Sains Sosial Universiti Malaya. Klinik Kesihatan Pelajar memberi perkhidmatan pada setiap hari pada waktu pejabat. Waktu Perkhidmatan Klinik Kesihatan Pelajar seperti berikut:

Hari Isnin - Khamis	Hari Jumaat	Hari Sabtu & Ahad
8.30 pagi – 12.30 tengah hari 2.00 petang – 4.30 petang	8.00 pagi – 11.45 pagi 2.45 petang – 4.30 petang	8.00 pagi – 1.00 petang

Bilik Rawatan PASUM

PASUM sangat memandang serius isu kesihatan pelajar dan telah mengambil inisiatif bagi membantu pelajar yang mempunyai masalah kesihatan dengan menyediakan Bilik Rawatan yang boleh digunakan sebagai ruang beistirehat seketika sebelum meneruskan kuliah/amali/tutorial yang terletak di Aras Bawah Bangunan PASUM.

Sukan dan Rekreasi

Universiti dan kolej kediaman menyediakan banyak kemudahan seperti padang bola, padang hoki, gelanggang badminton, gimnasium, kolam renang dan pada setiap sesi banyak pertandingan diatur sama ada di peringkat kolej kediaman, universiti atau peringkat nasional.

Kebudayaan dan Kesenian

Sebagai sebahagian daripada masyarakat kampus pelajar-pelajar Pusat Asasi Sains boleh menyertai kegiatan kebudayaan dan kesenian yang dikendalikan oleh Jabatan Kebudayaan Fakulti Seni Kreatif, Universiti Malaya. Antara kesenian yang diajar ialah tarian tradisional, seni tampak dan alat muzik serta seni lukis.

Selain Jabatan tersebut, kolej kediaman juga mengatur banyak kegiatan kebudayaan yang mana pelajar-pelajar Pusat Asasi Sains boleh melibatkan diri pada masa lapang mereka.

Perpustakaan

Universiti juga menyediakan kemudahan perpustakaan yang mempunyai pelbagai jenis koleksi sama ada sebagai bahan rujukan atau boleh dipinjam. Setiap fakulti/jabatan juga mempunyai kemudahan bilik bacaan.

Penasihat Akademik

Pusat Asasi Sains telah melantik seorang penasihat akademik bagi setiap orang pelajar. Pelajar yang mempunyai masalah boleh berunding dan mendapat nasihat dari penasihat akademik masing-masing. Di samping itu, semua kakitangan Pusat Asasi Sains sentiasa bersedia membantu pelajar yang datang meminta bantuan.

Kaunseling dan Kerjaya

Kakitangan Unit Kaunseling dan Kerjaya Bahagian Hal Ehwal Pelajar sentiasa bersedia untuk memberi khidmat nasihat tentang rancangan kerjaya, termasuk latihan dan peluang pekerjaan. Mereka juga membantu pelajar-pelajar yang mempunyai masalah dalam pengajian, ketegangan, masalah peribadi dan keluarga secara sulit dan peribadi. Dari masa ke semasa, unit ini juga menganjurkan kursus Sistem Pembelajaran Berkesan bagi membantu pelajar-pelajar. Pelajar yang ingin bertemu kaunselor boleh berbuat demikian pada setiap hari Selasa dan Khamis dengan membuat temu janji di pejabat PASUM sebelum berjumpa pihak kaunselor.

KAEDAH & PERATURAN UNIVERSITI MALAYA

Kaedah dan peraturan Universiti Malaya boleh dimuat turun melalui laman web PASUM

https://asasi.um.edu.my/bukupanduan

TATASUSILA PAKAIAN DAN PENAMPILAN DIRI PELAJAR

Pusat Asasi Sains telah menetapkan bahawa semua pelajar berdaftar di Pusat Asasi Sains hanya dibenarkan memakai pakaian seperti berikut:

A. SEPANJANG MINGGU SUAI KENAL

Pelajar Lelaki

1. Kemeja berlengan pendek/panjang.
2. Seluar panjang jenis *slack* sahaja (seluar *jeans* tidak dibenarkan).
3. Berambut pendek, kemas dan rapi.
4. Tidak dibenarkan mewarnakan rambut.

Pelajar Perempuan

1. Pakaian yang sopan dan longgar seperti baju kurung dan seumpamanya.
2. Pemakaian seluar (*pants*) tidak dibenarkan.
3. Pelajar yang berambut panjang perlu diikat rapi.
4. Tidak dibenarkan mewarnakan rambut dan kuku **kecuali** inai (henna).
5. Pelajar beragama Islam digalakkan menutup dan menjaga aurat.

B. SEPANJANG MENGIKUTI PENGAJIAN DI PUSAT ASASI SAINS (TERMASUK SEMASA BERURUSAN DI PEJABAT)

Pelajar Lelaki

1. Kemeja berlengan pendek/panjang atau kemeja-T berkolar.
2. Seluar panjang jenis *slack* sahaja (seluar *jeans* tidak dibenarkan).
3. Berambut pendek, kemas dan rapi.
4. Tidak dibenarkan mewarnakan rambut.

Pelajar Perempuan

1. Pakaian yang sopan dan longgar seperti baju kurung dan seumpamanya.
2. Blaus labuh melepasi paras punggung dengan lengan melepasi paras siku.
3. Skirt labuh sekurang-kurangnya pada paras buku lali.
4. Seluar panjang yang longgar dan sopan (seluar *jeans* tidak dibenarkan).
5. Pelajar yang berambut panjang perlu diikat rapi.
6. Tidak dibenarkan mewarnakan rambut.
7. Pelajar beragama Islam digalakkan menutup dan menjaga aurat.
8. **Tidak dibenarkan memakai perhiasan (subang) selain di telinga.**

C. DI DALAM MAKMAL

Pelajar diwajibkan memakai baju labuh makmal (*lab-coat*) dan kasut bertutup.

PERHATIAN

Semua pelajar **TIDAK** dibenarkan memakai yang berikut:

1. Kemeja-T tanpa kolar.
2. Seluar *jeans*.
3. Seluar pendek.
4. Selipar – termasuk semua jenis selipar, capal dan sandal.

5. Pakaian yang tidak sopan (ketat/jarang/singkat) dan tidak sesuai dengan keadaan.
6. Apa-apa pakaian yang menutup kesemua atau sebahagian muka **kecuali** pelitup muka.
7. Memakai baju labuh makmal (*lab-coat*) di luar makmal.

PERINGATAN

Pusat Asasi Sains berhak menghalang pelajar daripada mengikuti kelas pengajaran jika didapati pelajar tidak mematuhi tatasusila pakaian yang tersebut di atas. **Tindakan tatatertib akan diambil pada bila-bila masa juga jika didapati pelajar ingkar dengan peraturan yang ditetapkan. (Rujuk Kaedah-Kaedah Universiti Malaya (Tatatertib Pelajar-Pelajar) 1999, Perkara 26).**

PROSEDUR PENARIKAN DIRI

LAMPIRAN A

PUSAT ASASI SAINS UNIVERSITI MALAYA

PROSEDUR PENARIKAN DIRI DARIPADA PROGRAM ASASI

Pelajar yang berhasrat untuk menarik diri daripada program asasi PASUM adalah dikehendaki untuk **berbincang terlebih dahulu dengan ibu bapa atau penjaga.**

Permohonan penarikan diri yang telah diluluskan adalah **muktamad** dan sebarang permohonan rayuan untuk menyambung semula pengajian di PASUM **tidak akan dipertimbangkan.**

Selain itu, seperti mana yang telah dijelaskan dalam Lampiran Makluman Kemasukan Dan Pendaftaran - Program Pengajian Asasi Universiti Malaya:

PENTING!

- **TIADA SEBARANG PENGEMBALIAN YURAN KEMASUKAN** dalam apa-apa keadaan sekalipun termasuklah tidak hadir mendaftar (lapor diri); dan

- **TIADA SEBARANG PENGEMBALIAN YURAN PENGAJIAN DAN BAYARAN LAIN** dalam apa-apa keadaan sekalipun termasuklah menarik diri daripada universiti selepas tempoh satu (1) bulan dari tarikh pendaftaran.

Prosedur penarikan diri daripada program perlu **dilaksanakan segera** seperti berikut:

i. Log in ke portal MAYA (maya.um.edu.my) menggunakan *username* dan kata laluan siswamail;
ii. Tekan tab *Enrolment* > *Enrolment Amendments;*
iii. Pilih *Programme Withdrawal* **(Bukan *Semester Withdrawal*)** > + *Apply for Programme Withdrawal;*
iv. Nyatakan *'Reason for Withdrawal'* (100 aksara sahaja. Sila rujuk contoh *)
v. Muat naik dokumen sokongan (surat tawaran biasiswa / institusi lain) bagi menyokong permohonan penarikan diri pelajar daripada program;
vi. Tekan *submit*.

Contoh *Reason for Withdrawal

a) Accept other offer to Universiti *ABC*.
b) Further study in STPM at SMK *DEF*.
c) Accept *GHI* scholarship at Universiti *JKL*.
d) Changing from UPU to SATU at PASUM due to the acceptance of *MNO* scholarship.
e) Proses penarikan diri ini hanya boleh dilaksanakan oleh pelajar yang telah melengkapkan proses **pengesahan proses setuju terima tawaran *(Accept Offer Letter)*** sahaja.

Pihak PASUM akan mempertimbang permohonan penarikan diri pelajar berdasarkan justifikasi dan dokumen sokongan yang diberikan dan seterusnya mendapatkan perakuan daripada pihak Pusat Kemasukan dan Pendaftaran Universiti Malaya.

Sekiranya permohonan penarikan diri telah diluluskan, surat pengesahan tarik diri universiti boleh dimuat turun melalui portal MAYA.

Pelajar yang tidak memohon penarikan diri mengikut prosedur yang ditetapkan dengan segera akan menimbulkan kesulitan pada pihak pelajar pada masa akan datang.

AKTIVITI PELAJAR

AKTIVITI PELAJAR

BADMINTON

AKMAL IZUAN AZIZ ILHAN
SHAFIQAH DAHLIA NURIN MAZIHA IWANI IZZATUL

FUTSAL

NABIL SYAHMIL IZZUDDIN HARIS AMIR NAJWAN NAZMI
NAZEEF RAFI AISY IQBAL AMIR AZHAD IRFAN

BOLA JARING

LYANA ELLE ALISYA AINA GVELLE AMIRAH ATHIRAH
BATRISHA AISYAH FAREEN WADDAH MIRA

KAROM

SYAHMIN ALIFF FAHRIN MIFZAL
FATIHAH SYAFIKA ZAHWA IESYA

OLAHRAGA

ISYRAF AFENDY AYDAN UWAIS AQIL FARIS AEMIR LUQMAN ADAM
ALEYSHA MAISARAH NURIN AQILAH
NATALIE FAWWAZ UMAIRAH NADIA

PETANQUE

ZHAFRAN HAZMI HAKIM FIRAS
HUSNINA IMAN DHIYA NAJWA

CATUR

HAIKAL NABIL AIDIL
ALYA AINA NASHAZIRAH

AKTIVITI PELAJAR

UNIVERSITI MALAYA

PUSAT ASASI SAINS
Centre for Foundation Studies in Science

Tahniah kepada peserta

SAM 2024

KEJOHANAN SUKAN ASASI MALAYSIA 1-3 MAC 2024

1) Kategori Anugerah Emas

(Bola Jaring)

- Graceyvelle Gladys Joly
- Aina Qistina binti Muhd Farez
- Amirah Najihah binti Abdul Jamir
- Amirah Batrisya binti Mohd Arif
- Aisyah Nuryn binti Shamshul Kamal
- Nur Alisya Qistina binti Mohd Hazli
- Nur Alya Irdeena binti Noorimatul Fitr
- Nur Fareen Natasya binti Farid H Askali
- Waddah Wardeany binti Wasry
- Nureen Batrisha binti Nor Azwan
- Nurul Athirah Nabilah binti Hisham
- Lyana Haziqah binti Abdul Razak

(Olahraga 800m)

- Fawwaz Syuhada binti Muhammad Haisham
- Aqil Amani bin Misni

2) Kategori Anugerah Perak

(Catur)

- Nur Aina Fateehah binti Mohd Rahiman
- Nashazirah Aliah binti Adzhan
- Alya Shahida binti Mohd Saharudin

(Olahraga 4X400M)

- Faris Syazwan bin Mohd Fauzi
- Mohaamd Afendy bin Hassan
- Muhammad Isyraf bin Ali Akbar
- Aqil Amani bin Misni

Olahraga 1500M)

- Aydan Khairin bin Khairul Zaman

3) Kategori Anugerah Gangsa

(Ping Pong)

- Nur Sarah binti Mat Zani
- Amir Farhan bin Jamalulail Asri
- Tuan Muhammad Azhad bin Tuan Mohammad Yusoff Shah
- Ibrahim Aiman bin Suhandono
- Muhammad Danish bin Mohamad Adam Toh
- Alya Farhana binti Muhammad Ilmami
- Auniaziqah binti Alwiee
- Nur Farrah Aina binti Mohamad Shah
- Fatin Adriana Batrisyia binti Suris
- Khadijah binti Zulkefli

(Catur Individu Lelaki)

- Muhammad Haikal bin Syaiful Arief Syah

(Olahraga 800M)

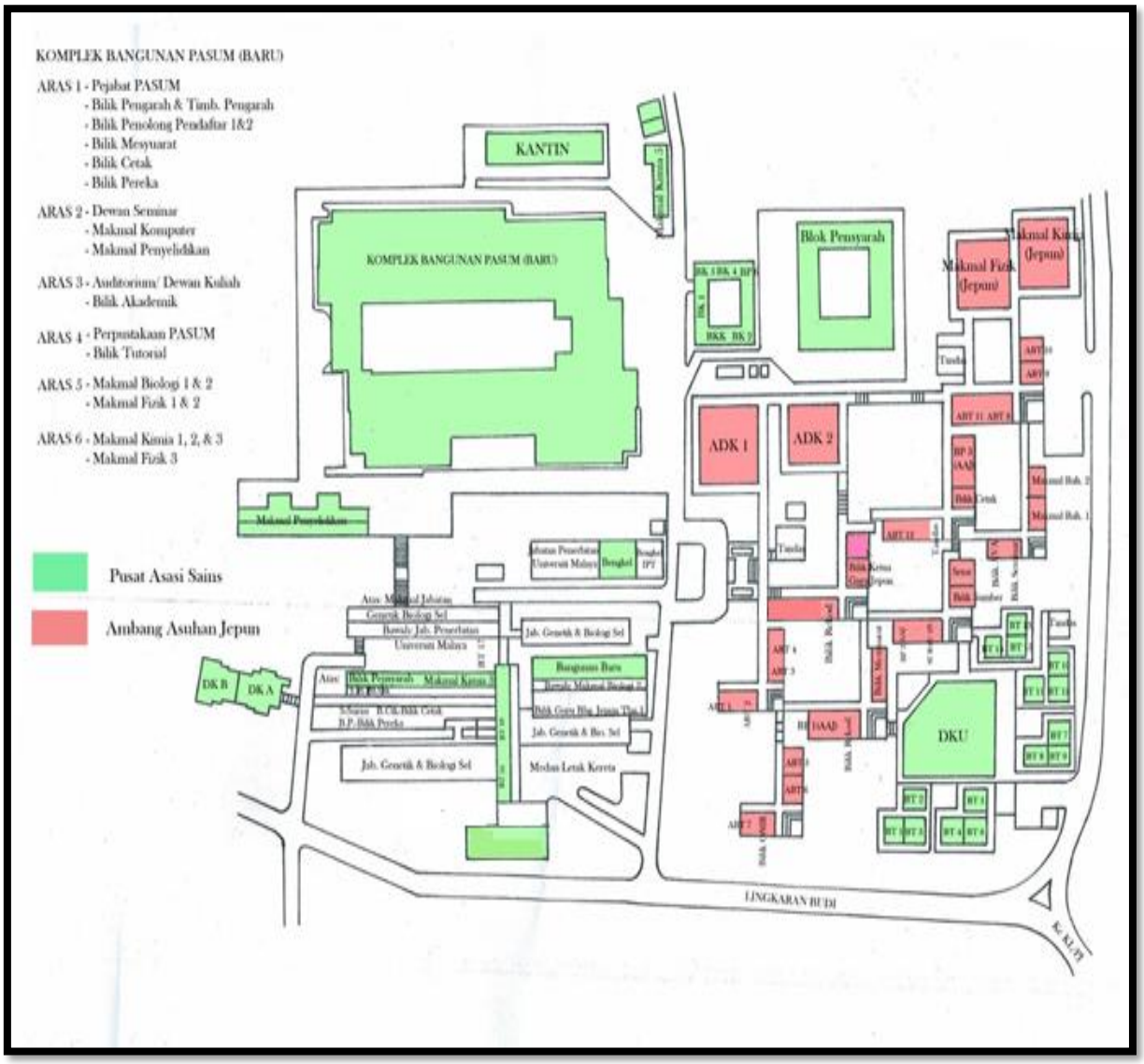
- Aydan Khairin bin Khairul Zaman

(Petanque)

- Muhammad Khairil Hakim bin Ismail
- Muhammad Firas bin Mohd Syazlan
- Nur Iman Umairah binti Rahmat
- Nur Husnina Batrisyia binti Rohaimen
- Muhammad Hazmi bin Mohd Hashim
- Dhiya Alya Safya binti Mohd Zaini
- Muhammad Zhafran Syafieq bin Sulaiman Zhafran
- Wan Nur Najwa Nadhirah binti Wan Fadhli

TATACARA PENGGUNAAN E-PAY@UM

PELAN LOKASI PUSAT ASASI SAINS



NOMBOR-NOMBOR TELEFON

Pejabat Am PASUM	03 – 7967 5929 / 5922 / 5873 / 5821
Pejabat Keselamatan Universiti	03 – 7967 7070
Klinik Kesihatan Pelajar Universiti Malaya	03 – 7967 6444 / 6445
Bendahari – Bahagian Kewangan Pelajar	03 – 7967 3271
Jabatan Pentadbiran dan Perkhidmatan	03 – 7967 3282/3440 / 3441
Bank Islam Malaysia Berhad Cawangan UM	03 – 7960 8934
Kolej Kediaman Dayasari (KK5)	03 – 7956 7948
Kolej Kediaman Ungku Aziz (KK11)	03 – 7954 0806
Kolej Kediaman Raja Dr. Nazrin Shah (KK12)	03 – 7957 7367
Pusat Perubatan Universiti Malaya	03 – 7649 4422
Balai Polis Pantai	03 – 2282 2222
Balai Bomba Pantai	03 – 2282 4444

UNIVERSITI MALAYA

PUSAT ASASI SAINS
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03-79675800/5821/5873