



اوتنورسيتي مليسيا فهغ السلطان عبد الله  
UNIVERSITI MALAYSIA PAHANG  
AL-SULTAN ABDULLAH

# SUSTAINABLE DEVELOPMENT GOALS REPORT

UNIVERSITI MALAYSIA PAHANG  
AL-SULTAN ABDULLAH  
2022



UMPSAMalaysia  
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**TEKNOLOGI  
UNTUK  
MASYARAKAT**



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**1** NO  
POVERTY



## SDG 1: No Poverty

### Yayasan UMP

The establishment of the UMP Foundation is the university's effort to collect and manage funds from the public, companies, and institutions for the benefit of UMP students' welfare, as well as to finance educational and community programmes and provide additional learning facilities used by students and the university.

**Table 1: Education Fund Details for the Year 2022**

NO	EDUCATION FUND	RM	RECEIVER
1.	Scholarship		
	i. Student charity	RM672,550.00	1,373
	ii. Yayasan UMP Scholarship	RM320,000.00	8
	iii. Biasiswa Sulung	RM420,000.00	6
	iv. Postgraduate Scholarship	RM200,000.00	20
	v. Anak Pahang Cemerlang	RM38,780.00	7
2.	Incentive:		
	i. Excellence Incentive	RM672,550.00	68
	ii. Education Incentive	RM672,550.00	26
	iii. Publication Incentive	RM672,550.00	68
	iv. Volunteer Incentive	RM12,000.00	30
3.	Perdana Fellow – UMP Protege	RM64,800.00	8
4.	Iftar Ramadan	RM200,000.00	1,600
5.	Salam Cinta Ramadan	RM200,000.00	50
6.	Laptop Assistance	RM154,000.00	70
7.	Campus Pantry	RM12,000.00	500
8.	Projek Dapur Kita	RM5,000.00	1,200
<b>TOTAL</b>		<b>RM2,284,880.00</b>	<b>5,065</b>

**Table 2: Details of Community Programmes for the Year 2022**

NO	PROGRAMME	RM	RECEIVER
1.	UMP's Caring Expedition to Sungai Koyan, Bumi Kenyalang, and Kuala Krau	RM200,000.00	320
2.	Staff Welfare Assistance	RM20,000.00	60
3.	Food Assistance Kit	RM30,000.00	300
4.	STEM UMP Project	RM124,000.00	300
5.	Community Tuition	RM5,000.00	100
6.	Back to School Programme	RM18,000.00	103
7.	Suhoor programme	RM20,000.00	700
8.	Humanitarian Programmes - New Student Campus Arrival Assistance (Kelantan, Johor, Penang) and Visits to Homes Affected by Fire in Taman Tas, Kuantan	RM30,000.00	100
9.	Ready to Eat Programme	RM50,000.00	1,000
<b>TOTAL</b>		<b>RM487,000.00</b>	<b>2,820</b>

## Endowment for Mawaddah Residential College



### 'Mawaddah' means Compassion

Mawaddah Residential College is a residence established to provide protection and services to UMP students. UMP and MUIP are taking proactive steps to realize this initiative due to the financial problems faced by some students and the increasing cost of renting homes from year to year, which needs to be borne by the students.

## Community Anti-Poverty Programmes

### East Coast Economic Region (ECER) and North Corridor Economic Region (NCER)

The Socio-Economic & Special Projects Department is a department responsible for conducting programmes in the form of human capital development for the local community, especially the B40 group, unemployed youth, and individuals with no fixed income.

ECER - 27 programmes have been approved to be implemented in Cameron Highlands, Lipis, Raub & Bera districts for the 2022 session which will involve 606 participants. These programmes will be conducted in collaboration with the expertise of UMP staff, government agencies as well as public and private training providers who are recognized from within and outside the country.

NCER - 23 programmes have been approved to be implemented in Seberang Perai Tengah, Larut, Matang & Selama, and Batang Padang districts for the 2022 session which will involve 600 participants. These programmes will be conducted in collaboration with the expertise of government and private agencies as well as public and private training providers who are recognized from within and outside the country.

**Picture 1: East Coast Economic Region (ECER) and North Corridor Economic Region (NCER) Training**



2 ZERO HUNGER



## SDG 2: Zero Hunger

### Donation Food Package to Flood Victim

#### Retort Technology and Disaster Action Committee

The "Retort Technology Ready-to-Eat" initiative aims to combat hunger and is seen as a preparation for providing food during emergencies, enabling people to access nutritious, ready-to-eat meals.



Food Contribution (retort technology) presented by the Vice Chancellor of the Universiti Malaysia Pahang (UMP), Professor Dato' Ts. Dr. Yuserrie Zainuddin, to flood victims, especially students from Universiti Malaysia Kelantan (UMK), the Universiti Sains Malaysia (USM) Kubang Kerian, and the Universiti Teknologi MARA (UiTM) Machang.

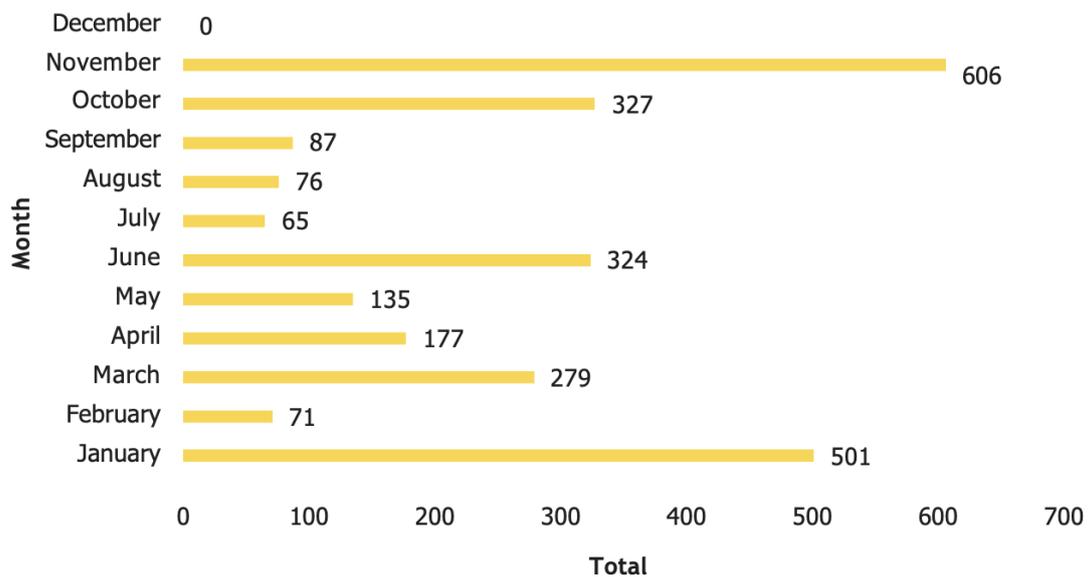


16,000 retort set  
Student and Emergency Assistance Preparedness



It is a continuation of the Food Bank Malaysia programme launched on 22 December 2018. Following the launch, 430 branches of supermarkets joined hands to contribute any food surplus they had to aid the hardcore poor and B40 students. Some of the big names that have taken part in this programme are Tesco, Giant, AEON Co, AEON Big, NSK, Hero Market, Econsave, TF Value, 99 Speedmart, My Family Store, SegiFresh, and Mydin. UMP Students under Majlis Perwakilan Pelajar (MPP) and Kelab Penyayang UMP are required to work during Campus Pantry operating hours, including donation and food sorting shifts and food distributions.

**Chart 1: Total Student Received Campus Pantry Benefit for 2022**



**Table 3: The Main Contributor to Campus Pantry 2022**

NO	SPONSOR	CONTRIBUTION
1.	Yayasan UMP	<ul style="list-style-type: none"><li>• RM10,000.00 Yearly</li><li>• Dry Food Supplies and Personal Care Products</li></ul>
2.	Laurier	<ul style="list-style-type: none"><li>• 504 pax sanitary pad</li></ul>
3.	Yayasan Kebajikan Siswa Keluarga Malaysia (YKS)	<ul style="list-style-type: none"><li>• RM30,000.00</li><li>• Meal Vouchers worth RM70.00 Each Semester for 428 Students</li></ul>



**3** GOOD HEALTH  
AND WELL-BEING



## SDG 3: Good Health and Well-being

### Well-being of Human Resources

Human Resource well-being is defined as the standard and quality of life for staff on campus as well as the welfare of the community. In formulating and building human resource well-being, the outlined goal is to create mentally, physically, and productively healthy employees within a healthy, safe, and progressive work culture environment through various programmes.

### Blood Donation Programme



Blood donation program at UMP

Picture 2: The Details of the Blood Donation Programme in 2022

**710**  
Total Donor



UMP Pekan

**117** 26 January 2022  
**132** 29 March 2022  
**130** 1 June 2022  
**33** 23 August 2022  
**92** 23 November 2022



UMP Gambang

**206** 31 March 2022



Blood donation program get positive response from university staff and

## I Fit and Eat Right Programme (IFitER)

**Picture 3: Some of the 79 IFitER Participants**



The I Fit and Eat Right (IFitER) Programme is a module by the Ministry of Health Malaysia (MoH) for weight loss and improving body fitness levels.

Implementation of the Programme:

- Elements of healthy nutrition, exercise, behavior change model, and commitment letters.
- Two sessions per week, on Tuesdays and Thursdays, starting at 8:30 AM and ending at 10:30 AM, for a total of 24 weeks.
- Trainers from the Ministry of Health and UMP Nutrition Department.
- Includes cardio sessions, weight training and stretching exercises, health assessments, and fitness activities, as well as sessions with nutrition officers.

4 QUALITY  
EDUCATION



# SDG 4: Quality Education

## High-Level TVET

### Holistic Graduates



The first core is the production of holistic graduates who are balanced in terms of physical, emotional, spiritual, intellectual, and social aspects. The development of these holistic learners is achieved through learning both in and outside of the classroom.

Graduate Employability (GE) increase from 96.04 percent for 2021 to 98.67 percent for 2022.

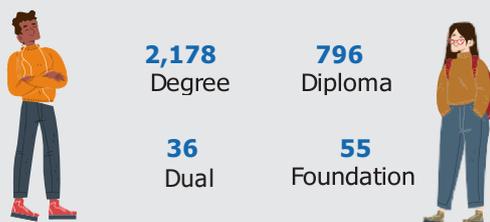
**Table 4: The Achievements of GE in 2022**

<b>90%</b> Target	<b>98.67%</b> Achieved
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## Students Enrollment

**Table 5: Student Enrolment Breakdown for the Year**



In 2022, the total student enrolment in various fields of study was 3,065, comprising 2,178 undergraduate students, 36 dual-degree students, 796 diploma students, and 55 foundation year students

**Table 6: Breakdown of Student Enrolment in Various Fields for the Year 2022**

NO.	FIELD OF STUDIES	DETAILS	TOTAL	TOTAL
1.	Degree	Feb Semester II Academic Session 2021/2022	331	2,178
		Semester I Academic Session 2022/2023	1,847	
2.	Dual Degree	Semester I Academic Session 2022/2023	36	36
3.	Diploma	Semester I Academic (UPU Intake) Session 2022/2023	755	796
		(PUPW Intake)	41	
4.	Foundation	Semester I Academic Session 2022/2023	55	55
<b>TOTAL</b>				<b>3,065</b>

The total enrolment of postgraduate students in 2022 was 386 students, consisting of 289 local students and 89 international students (excluding international mobility students).

**Table 7: Breakdown of Postgraduate Student Enrollment in 2022**

**289**  
Local
**89**  
International

## Student Enrolment

The total enrolment of UMP students in 2022 was 16,950 people (excluding international mobility students). Of that total, 15,131 were postgraduate students (excluding international mobility students). Meanwhile, there were 1,819 enrolments of postgraduate students in 2022 (excluding international mobility students).

**Table 8: Undergraduate Students Enrolment**

**14,941**  
Local
**190**  
International
  
**54**  
International Mobility

**Table 9: Postgraduate Student Enrolment**

**1,465**  
Local
**354**  
International
  
**8**  
International Mobility

## Undergraduate

**Table 10: Percentage of Postgraduate Student achieve status Intake Graduate on Time (iGoT)**

**22.15%**  
Master's  
Degree
**20%**  
PhD

Total number of graduates for the postgraduate programme was a total 251 in 2022.

- 66 Doctor of Philosophy (PhD)
- 5 Master (Mixed Mode)
- 73 Master's Degree (Coursework)
- 107 Master's Degree (Research)

Total international student enrolment was 362

- 261 Doctor of Philosophy (PhD)
- 1 Master (Mixed Mode)
- 3 Master's Degree (Coursework)
- 89 Master's Degree (Research)
- 8 Mobility

The overall enrolment for postgraduate students for 2022 was 1,827:

- 817 Doctor of Philosophy (PhD)
- 31 Master's Degree (Mixed Mode)
- 260 Master's Degree (Coursework)
- 719 Master's Degree (Research)

**The breakdown includes active, deferred, graduated, dropped out, terminated, failed, and deceased (including mobility and summer programme students until 31 December 2022).**

The number of students continuing their studies at the level of Doctor of Philosophy (PhD) and Master of Science has been increasing from year to year. UMP's postgraduate programme offerings began in 2004 with one PhD student and 15 master's students. In 2022, the total enrolment of PhD students reached 1,078, while the total enrolment of master's students was 1,103.

UMP has offered a Graduate Scholarship Scheme known as the Doctoral Research Scheme (DRS) for Doctor of Philosophy (PhD) students and the Masters Research Scheme (MRS) for bachelor's degree students.

- 90 DRS and MRS
- 10 MRS "Jom Sambung *Master*"
- DRS Promotion

The offering of this Graduate Scholarship Scheme is aimed at enhancing academic efficiency, especially in the field of IPS, with the primary goals of attracting the best students, producing high-quality journal articles, and increasing the number of students who achieve the status of Intake Graduate On Time (iGoT).

### Convocation and Graduation



His Majesty, the Chancellor of UMP, has graciously allowed the conferral of diplomas and degrees to all UMP graduates in 2022, starting from November 5th to 8th, 2022, during the 17th UMP Convocation Ceremony (MKK) at the UMP Gambang Campus Sports Complex. The global COVID-19 pandemic that struck in early 2020 had a significant impact on the country's higher education. The organization of three UMP Convocation Ceremonies in 2022, following the pandemic that began in 2020, made history when a total of 12,124 UMP graduates were celebrated for a year-long extension with no convocation ceremonies

held in 2020 and 2021. At that time, graduates from 2020 and 2021 only received their Graduation Documents by postal application. UMP celebrated a total of 3,556 graduates from 2020 on March 17th to 20th, 2022, with adherence to the Standard Operating Procedures (SOPs) during MKK15, held at the Sultan Haji Ahmad Shah Silver Jubilee Hall in Kuantan. For MKK16, UMP celebrated a total of 4,034 graduates from the year 2021 from August 6th to 9th, 2022, which took place at the UMP Gambang Campus Sports Complex.

In the 2021/2022 session, a total of 4,534 graduates completed their studies, including 847 diploma graduates (including executive/professional diplomas), 2,933 bachelor's degree graduates (including dual degrees and executive bachelor's degrees), 688 master's degree graduates (including executive master's degrees), and 66 Doctor of Philosophy (PhD) graduates.

**Table 11: Number of Programs by Educational Level in 2022.**

<b>66</b>	Doctor of Philosophy (PhD)
<b>688</b>	Master's Degree
<b>2,933</b>	Degree
<b>847</b>	Diploma



**Table 12: Total Graduate Based on Programme for 2022**

UNDERGRADUATES PROGRAMME		POSTGRADUATE PROGRAMME		UMP ADVANCED	
Degree	2,476	Doctor of Philosophy	66	Executive Master	503
Dual Degree	32	Master's Degree (Research)	107	Executive Degree	425
Diploma	556	Master's Degree (Coursework)	73	Executive/ Professional Diploma	291
		Master's Degree (Mixed Mode)	5		
<b>TOTAL</b>	<b>3,064</b>	<b>TOTAL</b>	<b>251</b>	<b>TOTAL</b>	<b>1,219</b>
<b>TOTAL SUM</b>					<b>4,534</b>

**Alumni Relations and Graduate Employability**

**Table 13: Statistics of Alumni Details for the Year 2022**



**38,443**  
**37,540**  
**903**  
**325**  
**2,991**

Total Alumni  
 Local Alumni  
 International Alumni  
 Working Overseas  
 Working with Multinational Company

**Academic with Community**

**Student Internship**

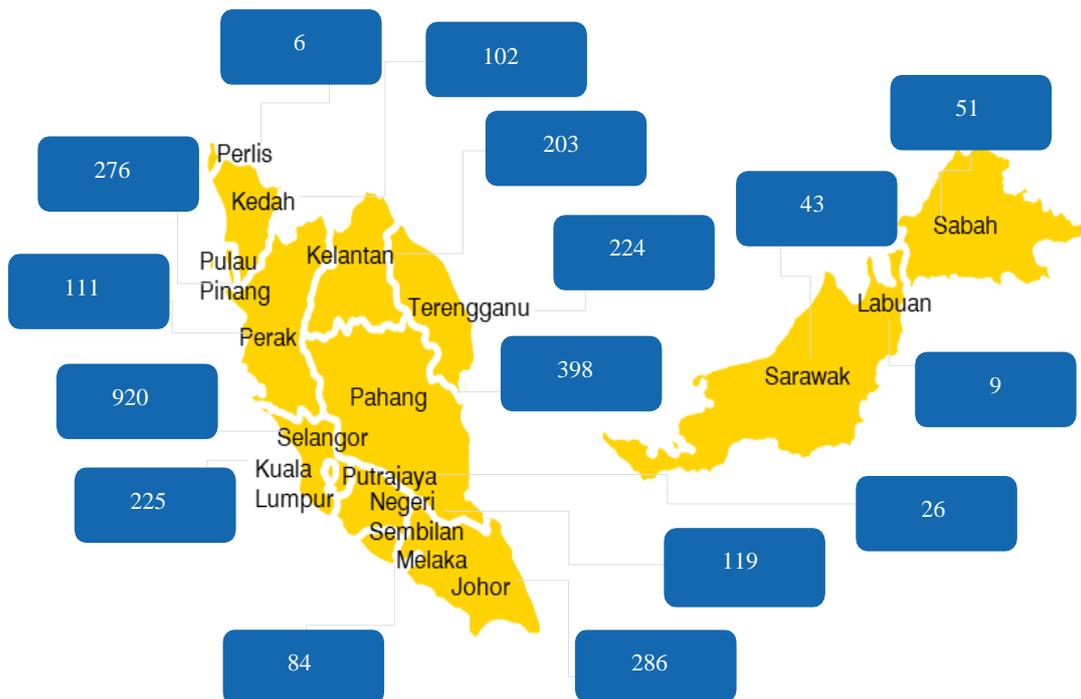
Industrial training provides students with the opportunity to practice and apply the theories they have learned in university to real-world situations.



The number of students undergoing industrial training in 2022

**3,083**

**Picture 4: Distribution of Industrial Training by State in 2022**

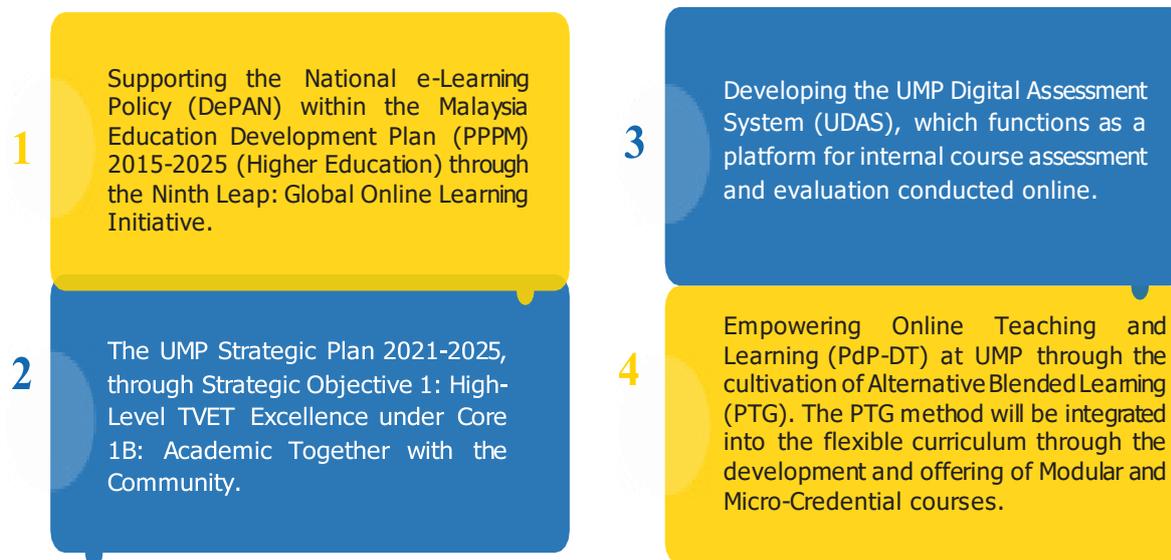


**Table 14: List of Career Development Programmes in 2022**

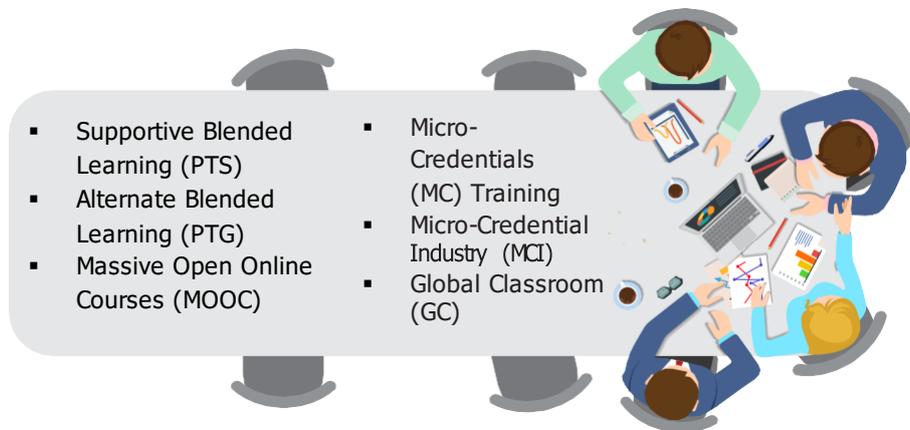
NO	PROGRAMME	DATE
1.	GIG Economy: The Future of Work	21 January 2022
2.	CPDC Internship Briefing 1/22	1 March 2022
3.	The Ultimate Guide to Industrial Training Abroad	9 March 2022
4.	Basic Mobile Application Development	26 March 2022
5.	Fundamental Of Cloud Computing: Runcloud Young Technovation	10 August 2022
6.	Craft Your Career	17 August 2022
7.	CPDC Internship Briefing 2/22	8 September 2022
8.	Finishing School 2022: Skill Up, Spark Up, Strike Up	14 September 2022
9.	Virtual Career Fair Electrical and Electronics 2022 oleh TalentCorp Malaysia	28 to 30 September 2022
10.	Huawei Career Day 2022 in collaboration with FK	2 to 3 November 2022
11.	MyCareer@MOHE 2022 Zon East Zone	14 to 15 November 2022

## Teaching and e-Learning Resource Center (PSPe)

Teaching and e-Learning Resource Center (PSPe), is an entity established to spearhead UMP's e-Learning agenda since January 2016.

**Picture 5: PSPe Roles**

**Picture 6: List of PSPe Initiative**

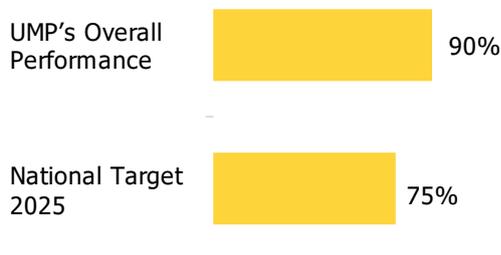


- Supportive Blended Learning (PTS)
- Alternate Blended Learning (PTG)
- Massive Open Online Courses (MOOC)
- Micro-Credentials (MC) Training
- Micro-Credential Industry (MCI)
- Global Classroom (GC)

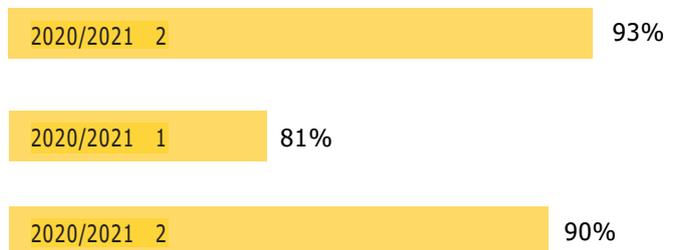
### Supportive Blended Learning (PTS)

KALAM is an online system used by academic staff, instructors, and students at UMP to assess the achievements in Blended Learning. Through its adoption and effective use within the UMP community, the overall achievement in Blended Learning for the year 2022 averaged 90%.

**Chart 2: UMP’s Overall Achievements Semester 2, 2021/2022**



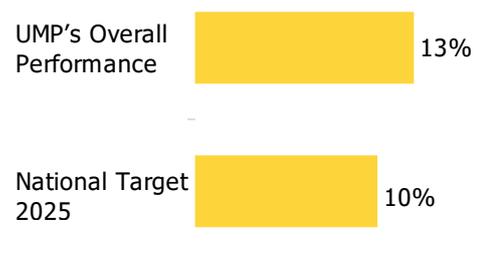
**Chart 3: Percentage of Achievement for Supportive Blended Learning**



### Alternate Blended Learning (PTG)

The empowerment of online teaching and learning (PdP-DT) at UMP through the cultivation of Blended Alternate Learning (PTG). The PTG method will be integrated into the flexible curriculum in the form of Modular and Micro-Credential course development and offerings. The platforms that will be used for the internal delivery of Modular and Micro-Credential courses at UMP are KALAM and TINTA. Meanwhile, the Modular and Micro-Credential courses offered to the UMP community will utilize the ILMU platform, serving as a self-paced learning environment.

**Chart 4: UMP’s Overalls Performance Semester 2, 2021/2022**



## Modular courses (MOOC)

Massive Open Online Courses (MOOC)s are online courses offered to students and communities that can be accessed through the internet. MOOCs provide benefits to the higher education system in Malaysia because they can increase student enrolment, enhance teaching quality, internationalize higher education institutions, and reduce the cost of course content delivery.

**Picture 7: Modular Courses offered by UMP**

**System Analysis and Design** 207 Enrolment

**Data Structure and Algorithm** 429 Enrolment

## Micro-Credentials (MC) Training

**Table 15: Micro-Credentials (MC) Training 2022**

NO	PROGRAMME NAME	FACULTY	TOTAL ENROLMENT FOR EXTERNAL
1.	Data Structure and Algorithm	Faculty of Computing	429
2.	System Analysis and Design		207
3.	Technical Product Presentation	Centre for Modern Languages	7
4.	Introduction to Digital Electronic	Faculty of Electrical and Electronic Engineering Technology	5
5.	Microbes for Human Applications	Faculty of Industrial Science and Technology	6
6.	Direct Current Circuit		1
7.	Gases		2
8.	Score Dynamic 1 Series	Faculty of Manufacturing and Mechatronic Engineering Technology	1
9.	Time Value of Money and Capital Budgeting	Faculty of Industrial Management	2
10.	Sail Formation and Classification for Civil Engineering Work	Faculty of Mechanical and Automotive Engineering Technology	1

## Micro-Credential Industry (MCI)

Picture 8: Micro-Credentials Industry (MCI) Training 2022



**Module**

- Solar Thermal System and Application for Industry

**Module**

- TRIZZ Method in Engineering

**Module**

- Solar Cell Technology

**Module**

- Mechatronic (Robotic)
- Technopreneurs
- Marketing

**Module**

- Technical Mandarin for Metallurgy: Cooking Plant



Centre of Instructional Resources & e-Learning  
Pusat Sumber Pengajaran dan e-Pembelajaran

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## Micro-credentials

A micro-credential programme is a learning programme that aims to recognise the enhancement of individual-specific expertise and competencies, particularly among working individuals, in order to improve specific skills in a short period of time and close the skills gap.



UMP's Micro-credential portal

MORE COURSES —

Global Classroom (GC)

Picture 9: GC Achievements 2022

1	1	1	Faculty of Computing	2	Faculty of Manufacturing Engineering and Mechatronics Technology
		15	Faculty of Industrial Science and Technology	2	Faculty of Chemical and Process Engineering Technology
	1	12	Faculty of Industrial Management	1	Faculty of Civil Engineering Technology
	1		Faculty of Electrical and Electronic Engineering Technology	1	Centre for Modern Languages
2	1	1	Faculty of Mechanical and Automotive Engineering Technology	2	Centre for Mathematical Sciences

Guidance: Advanced Standard Basic

Global Classroom

**65**  
Activities

Global Classroom

**1,258**  
Students

Webinar Series 2022

The Teaching and e-Learning Resource Center (PSPe), in collaboration with the Training Unit of the Registrar's Office, has organized seven series of webinars (online training) for all academic staff and instructors throughout 2022, with invitations to academic experts based on the training scope that has been established. Materials for the respective webinar sessions can be downloaded from the official PSPe portal.

Table 16: Online Micro-Credential (MC) Training 2022

NO	PROGRAMME NAME	DATE
1.	Alternative Blended Learning (PTS)	9 March 2022
2.	Safe Exam Browser 101	22 April 2022
3.	Hybrid Session UDAS	21 June 2022
4.	Sharing Session on the Implementation of Teaching and Learning (PdP)	24 August 2022
5.	How to Design Your Micro-Credentials Course	19 October 2022
6.	Webinar Assessment for Micro-Credentials	19 December 2022
7.	Webinar on Copyright Protection in the Digital World	22 December 2022



### Short Course Programme

This programme is specifically developed for industry workers to enhance their skills and knowledge in line with industry requirements. Short-Term Competency-Based Courses offered under this programme are recognized by the Department of Occupational Safety and Health (JKKP), the Human Resource Development Corporation (HRD Corp), and the Ministry of Higher Education (KPT Pace).

**Picture 10: Details of Short Course Programme**



### ILMU and MyIPS

<p>The ILMU and MyIPS systems serve as platforms that offer online courses to students and the community both within and outside the country.</p>	<ul style="list-style-type: none"> <li>✓ Training content</li> <li>✓ Assessment</li> <li>✓ External access</li> <li>✓ Training module</li> </ul>	<ul style="list-style-type: none"> <li>✓ Free Training</li> <li>✓ Paid training</li> <li>PE -Certificates and Badges</li> </ul>	
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e-PORTFOLIO serves as a platform that stores student data in the form of artefacts and creates resumes and portfolios automatically.

**Picture 11: e-Portfolio System**



## Socioeconomy

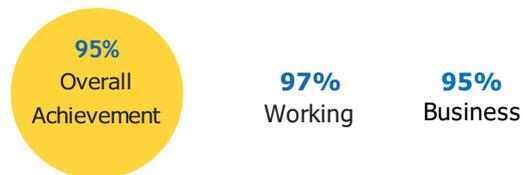
### ECERDC



UMP, through UMP Advanced, has been entrusted by the East Coast Economic Region Development Council (ECERDC) to implement a training and skills enhancement program known as PENJANA-ECERDC to Empower. The communities in the East Coast Economic Region include Kelantan, Terengganu, Pahang, and the Mersing district in Johor. This programme is one of the government's efforts to help the country address employment challenges in the post-COVID-19 era, ensuring an adequate and industry-relevant workforce supply in the region. Participants will undergo intensive training phases, on-the-job training (OJT), and subsequently be placed in selected companies.



**Table 17: Achievements in Job Placement and Entrepreneurship Births in 2022**



**46%**  
Participant has  
been trained for  
2022

**Picture 12: An Increase of Income for 2022**

- ✓ Income below RM500, increase to RM900
- ✓ Income below RM500 and above, increase to 80 percent

**NCER**

"empowerNCER" and "JomNiaga@NCER" are two initiatives launched by the Northern Corridor Implementation Authority (NCIA) to empower the local communities and promote entrepreneurship in the Northern Corridor Economic Region (NCER), which includes the states of Perlis, Kedah, Penang, and Perak. "empowerNCER" and "JomNiaga@NCER" focus on the development of skills and human capital within the local communities, providing training and development opportunities, and assisting small and medium-sized entrepreneurs (SMEs) in the region.



- ✓ Focus to B40 category
- ✓ 1,950 participants
- ✓ Skills training and Entrepreneurship for one month
- ✓ Successful Entrepreneur

**Picture 13: Details of Skills and Entrepreneur Training for 2022**

<b>4,000</b> Participants trained for 2022	<b>600</b> Participants (2019/2021)	<b>2800</b> Participants (2020/2022)	<b>600</b> Participants (2022/2024)
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**Public Resources**

UMP Library has provided facilities at the Pekan Campus and the Gambang Campus to support the community, staff dan students' research and learning through the life-changing impact of knowledge, discovery, and education.

- Auditorium
- Audio Visual Room
- Community Corner
- Discussion Room
- Computer Lab
- 24 hours Room
- Meeting Room
- Edutainment Room
- Media Entertainment Room
- Lobby and Gallery
- Executive Lounge
- Self-check Kiosk
- Learning Common Corner

<p><b>AUDITORIUM</b> AUDITORIUM</p> <p>Aras / Level : 1</p> <p>Kapasiti / Capacity : 200 Seats</p>		<p><b>BILIK SEMINAR</b> SEMINAR ROOM 1 &amp; 2</p> <p>Aras / Level : 2</p> <p>Kapasiti / Capacity : 32 Seats</p>		<p><b>BILIK MESYUARAT</b> MEETING ROOM 1 &amp; 2</p> <p>Aras / Level : 2 &amp; 4</p> <p>Kapasiti / Capacity : 22 &amp; 50 Seats</p>	
	<p><b>BILIK AV</b> AV ROOM</p> <p>Aras / Level : 2</p> <p>Kapasiti / Capacity : 50 Seats</p>		<p><b>MAKMAL</b> KOMPUTER COMPUTER LAB 1 &amp; 2</p> <p>Aras / Level : 1</p> <p>Kapasiti / Capacity : 50 &amp; 30 Seats</p>		
<p><b>BILIK TAYANGAN</b> VIEWING ROOM 1 &amp; 2</p> <p>Aras / Level : 2</p> <p>Kapasiti / Capacity : 8 Seats</p>		<p><b>BILIK DISKUSI</b> DISCUSSION ROOM 1 - 9</p> <p>Aras / Level : 3</p> <p>Kapasiti / Capacity : 8 - 10 Seats</p>		<p><b>BILIK EDUTAINMENT</b> EDUTAINMENT ROOM</p> <p>Aras / Level : 2</p> <p>Kapasiti / Capacity : 4 Seats</p>	
	<p><b>RUANG</b> KOMUNITI COMMUNITY AREA</p> <p>Aras / Level : 1</p> <p>Kapasiti / Capacity : 65 Seats</p>		<p><b>BILIK 24-JAM</b> 24-HOUR ROOM</p> <p>Aras / Level : 1</p> <p>Kapasiti / Capacity : 161 Seats</p>		

**5** GENDER  
EQUALITY

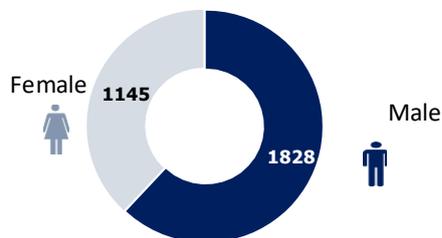


## SDG 5: Gender Equality

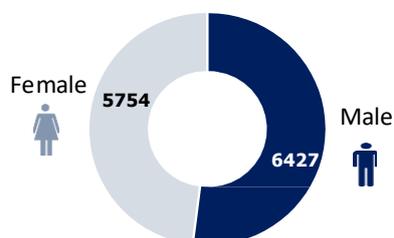
### Students and Staff

Women have equal opportunities to further their studies in UMP as well as to be an academic staff in UMP.

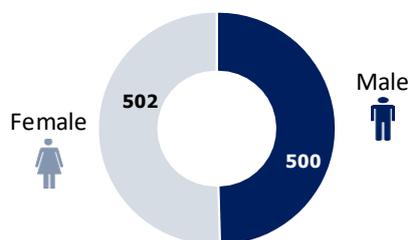
**Diagram 5.1: Gender population in Diploma**



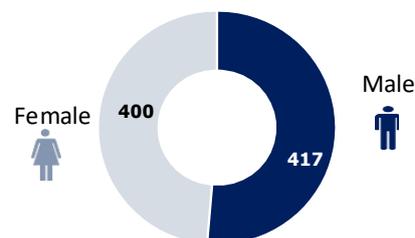
**Diagram 5.2: Gender population in Bachelor**



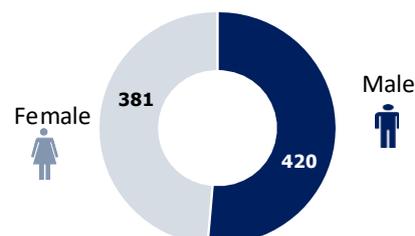
**Diagram 5.3: Gender population in Master's Degree**



**Diagram 5.4: Gender population in Doctor of Philosophy**



**Diagram 5.5: Academic staff according to gender population**



### Children Care Facilities

UMP offers on-campus childcare facilities for both staff and students, exemplifying a proactive commitment to advancing gender equality and women's empowerment. By providing accessible and dependable childcare options, UMP actively mitigates the obstacles that can impede women's educational and professional endeavors, empowering them to fully realize their potential in academia and the workforce.

Picture 14: I EduCare, Gambang

**DAFTAR SEKARANG** **iEDUCARE**

**Sukatan Pelajaran:**

- Bahasa Malaysia
- Bahasa Inggeris
- Matematik & Sains
- Pendidikan Islam
- Iqra'
- Arabic Program
- Pre-Writing
- Individual Reading

**Aktiviti:**

- Water Play & Sand Play
- Karate-Do
- Lawatan Sambil Belajar
- Hari Sukan
- Hari Graduasi & Konsert

Nurturing, Loving, Caring

**Tadika UIAM UMP Gambang**  
200 likes · 223 followers

Message Like Search

Posts About Mentions Reviews Followers Photos More

Picture 15: Taska Anakku Comel, Pekan

**Taska Anakku Comel**  
★ 3.7/5 reviews · Nursery

Send Message

Hi! Please let us know how we can help.

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Follow

Taska Anakku Comel is at Ump Pekan.  
5 July 2019 · Kuala Pahang · 🌐

Altiviti Fizikal## @ Ump Pekan

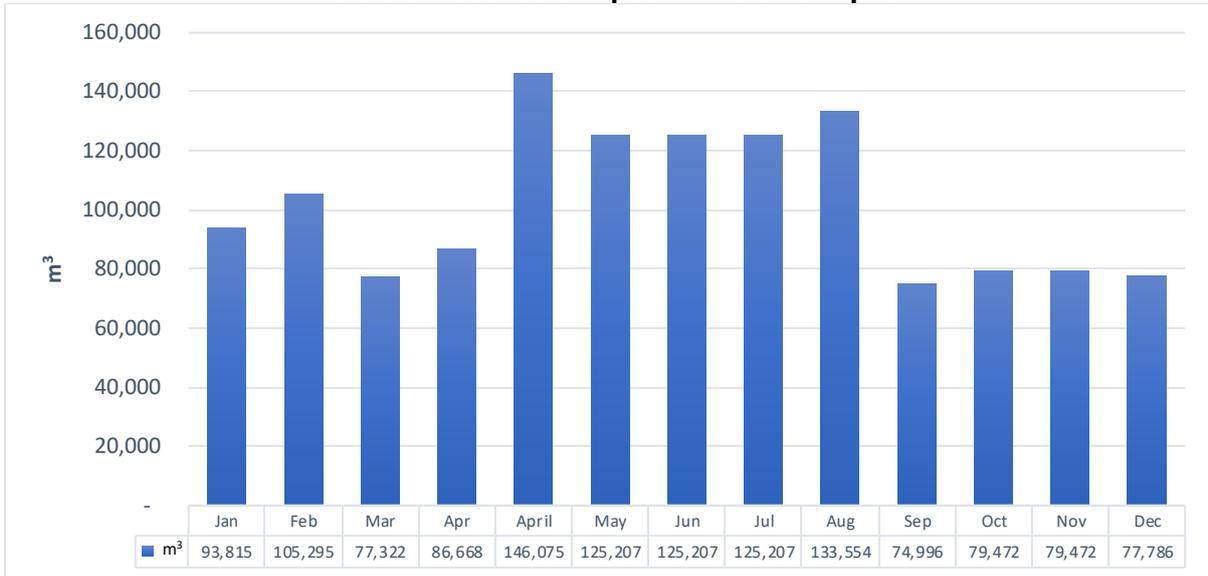
**6** CLEAN WATER  
AND SANITATION



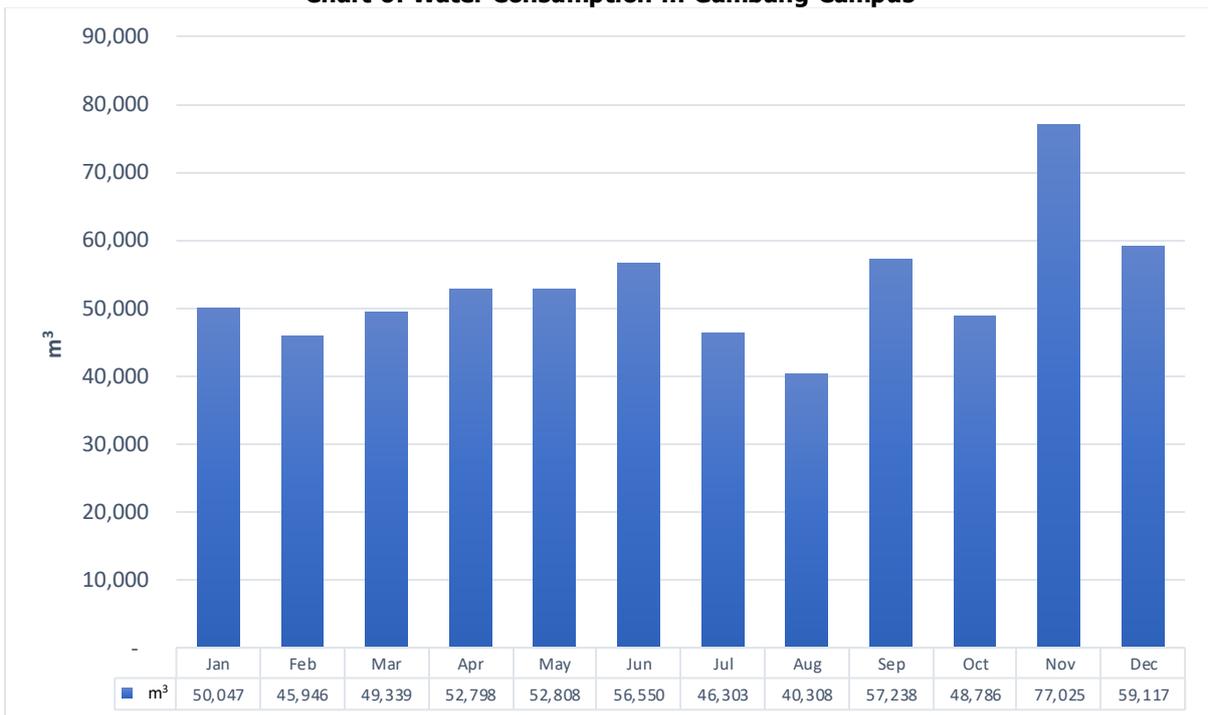
## SDG 6: Clean Water and Sanitation

### Water Consumption

**Chart 5: Water Consumption in Pekan Campus**



**Chart 6: Water Consumption in Gambang Campus**

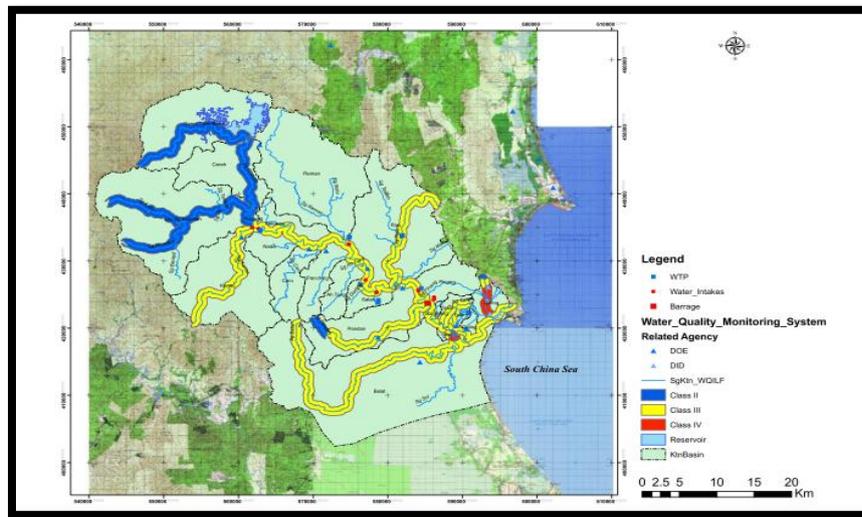


### IRBM – Water Quality of the Kuantan River Basin

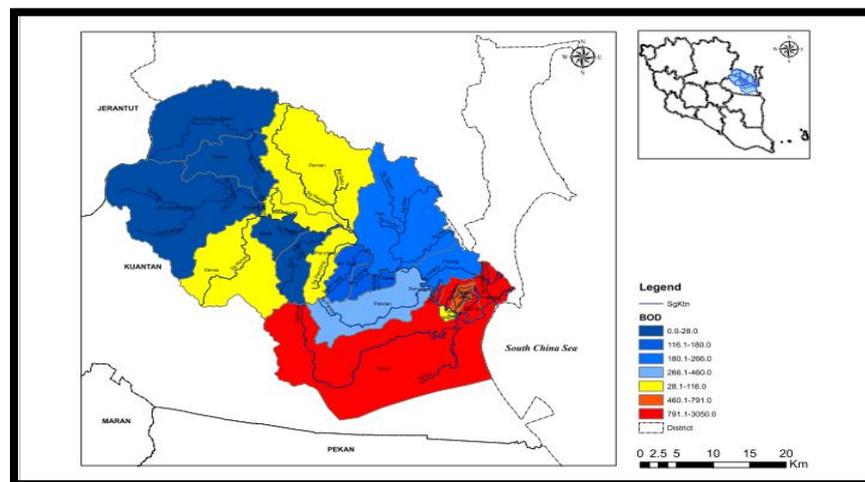
The main objective of the Integrated River Basin Management (IRBM) is to establish a balance between the existing natural functions of the river system and the developed aspects of the system. IRBM is not a technical solution. Rather, it is an approach to water resources management that takes into account all factors linked to land and water resources, including social and economic activities. Under the Water Quality subchapter in the IRBM study, the existing water quality status of the river system within the Kuantan River Basin was analysed, pointing out all potential contributors in polluting the river system either point source or non-point source as well as the establishment of the river waste assimilative capacity for pollution by Total Maximum Daily Load (TMDL).

The IRBM study was conducted from February 2017 – June 2019. However, the on-field development and implementation by the Department of Irrigation and Drainage is ongoing until 2023.

**Picture 16: WQI of Kuantan River Basin during Low Flow 2017**



**Picture 17: Point Sources Loading (kg/day) of BOD for Kuantan River Basin**



## Pahang Ocean Paddle International Challenge Malaysia

Pahang Ocean Paddle International Challenge Malaysia is an international competition, held for the first time in Southeast Asia. This competition, which takes place in Pahang, was expected to receive participants from within and outside the country. This competition was not only to introduce the sport of water kayaking to the whole world but also to appreciate the beauty of flora and fauna that inhabit Pahang oceans and beaches.

Water sports that focus on kayaking are still new in Malaysia, therefore the organizers take this opportunity to introduce this sport in addition to taking the opportunity to enjoy the beauty of the ocean in Malaysia. Therefore, the UMP Sports Center has sent 10 representatives consisting of UMP students and alumni. There are 5 levels for this competition with Stage 1 starts at Rompin Entertainment Beach and ends at Stage 5, Teluk Cempedak Beach.

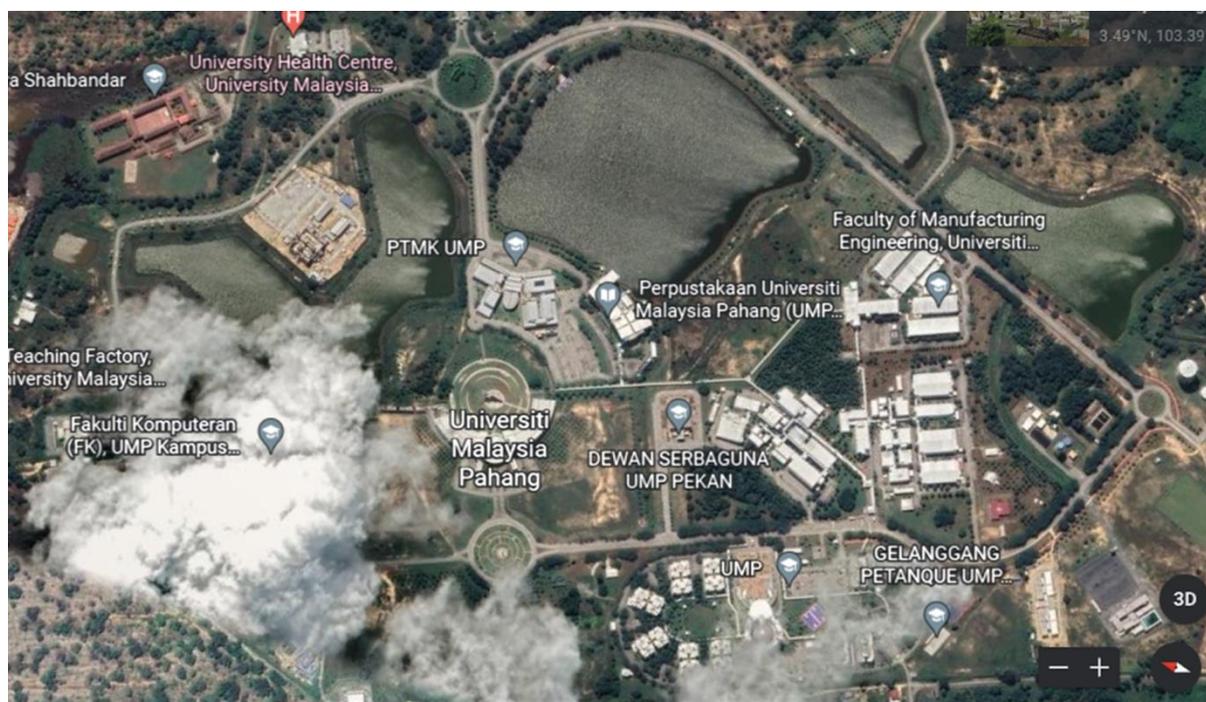


Pahang Ocean Paddle International Challenge Malaysia

## Water Conservation Programme from Lake Management

Lake A, B, C & D are connected to each other's. These four lakes were originally swamp areas. All university buildings are equipped with rain gutters. Rainwater from the rooftop will flow into the rain gutter, enter the drain and finally reach the lake.

Picture 18: Lakes at Universiti Malaysia Pahang



## Rainwater Harvesting System

Most of the buildings at UMP are equipped with a Rainwater Harvesting System for general purposes and plant irrigation.

Table 18: Details of the Rainwater Harvesting Installation at UMP

NO	LOCATION	TANK CAPACITY (GALLONS)	TANK QTY	TOTAL TANK CAPACITY (GALLONS)	YEAR INSTALLED
1	Faculty of Manufacturing and Mechatronics Engineering Technology	5000	1	5000	2012
2	40 House	20	10	200	2016
3	Canoe House	90	1	90	2016
4	Nursery	90	1	90	2017
5	Orchard	500	3	1500	2018
6	Lake's Prayer Room	200	1	200	2017
7	Teaching Factory	350	1	350	2018
8	Landscape Office – Compost Fertilizer	500	1	500	2019
9	Chancellery Tun Abdul Razak, Faculty of Electrical and Electronics Engineering Technology, Faculty of Computing Hall, Landscape Office, Development and Asset Management Office	20	10	200	2022
<b>TOTAL</b>			<b>29</b>	<b>8130</b>	

**Picture 19: Rainwater Harvesting Installation at UMP**

## Drinking Water

**coway**  
CHANGE YOUR LIFE

**CUCKOO**

beyond  
STANDARDS™

Water is crucial for many bodily functions, such as lubricating the joints, delivering oxygen throughout the body, preventing kidney damage and more. In order to encourage staff and student to consume more water, UMP has provided 81 units of water purifier of 2022, 81 unit.

7 AFFORDABLE AND  
CLEAN ENERGY



## SDG 7: Affordable and Clean Energy

### Policies

**Picture 20: UMP Sustainable Campus Blueprint 2022-2025**



Universiti Malaysia Pahang (UMP) Sustainable Campus Blueprint is a guideline for UMP to realise aspirations towards a sustainable Malaysia 2030 based on the Malaysian Green Technology Master Plan 2017 – 2030. It is in line with the 12th Malaysia Plan (12MP) that prioritises national development to continue to be aligned with the Sustainable Development Goals (SDG) under the 2030 Agenda for Sustainable Development (Agenda 2030). This programme is also highlighted in the 2022 mandate of the Minister of Higher Education, which focuses on achieving 17 targets in the SDGs through a coordination mechanism for monitoring initiatives in the Higher Education Institute.

UMP has established a dedicated committee to develop a model known as the UMP Sustainable Campus Blueprint.

Based on the UI GreenMetric criteria, the UMP Sustainable Campus Blueprint implements the sustainability element globally and does not only respond to physical development. This intent is reflected in the six components of the UI GreenMetric scale that are mapped to the 17 SDGs as follows:

- Setting & Infrastructure (SDGs 11, 22, and 17)
- Energy & Climate Change (SDGs 7, 11, 13, and 17)
- Waste (SDGs 3, 12, 14, 15, and 17)
- Water (SDGs 6 and 17)
- Transportation (SDGs 11 and 17)
- Education & Research (SDGs 1, 2, 3, 4, 5, 8, 9, 10, 13, 14, 15, 16, and 17)

### Walkaway Solar System (Chancellery to Kafe)

This solar system is installed with 8 solar photovoltaic (PV). 4 units of solar PV on each side (A&B) are connected in series with a total voltage of about 149V. The panels A&B connected in series in the direct current (DC) box in solar feeder pillar with a total of around 300V, connected to the inverter.

**Picture 21: Solar Panel**



## Faculty of Electrical and Electronics Engineering Technology Solar System and Waqf Hut (Weather/rain/irradiation data collector system)

**Picture 22: Solar system**



Faculty of Electrical and Electronics Engineering Technology Solar System (weather/rain/irradiation data collector system) takes data and sends it directly to the server using IoT technology, solar is used as a continuous energy source 24/7.

**Picture 23: Waqf Hut with solar charging facilities**



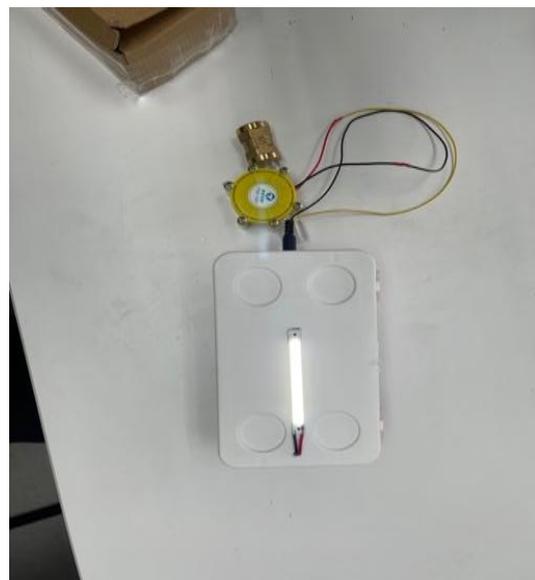
There are 20 waqf huts inside UMP Pekan & UMP Gambang equipped with solar systems. This 100W solar produces electricity for lights, and phone chargers. There is also a Power Delivery Charger for laptop charging and other electronic devices ranging from 5V - 12V. For phone charging, there are 2 options for charging mechanism:

1. Using USB type cable
2. Wireless charging, UMP developed in-house.

### Pico Hydro

This project is the result of the efforts of technical teams in this department for energy sustainability programmes. Pico hydro is used as a backup supply for toilet lighting and there is an additional function for phone charging.

**Picture 24: Pico Hydro in Washroom**



## Sea Lite

Sea-Lite is a portable lamp that uses seawater as an electrolyte source. This device is called Sea-Lite referring to the sea that gives light. It has a small design, easy to carry and maintain. This device can provide light and electricity and can last for a long time.

**Picture 25: Entrance Guard House, UMP Pekan**



## MYSUN: Bringing Future Campus Today

### ABOUT MYSUN

Consistent with global aspirations regarding sustainability, the Malaysian government has understood the importance of keeping sustainable development goals in mind, in particular the need to promote good energy and environmental practices. One of the keys to achieving this is through education, and by installing these values in all levels of the educational system. For this reason, the Ministry of Education of Malaysia has led a global education effort to strengthen attitudes, values and actions which are compatible with sustainable development. Notwithstanding this, there is a clear lack of coordination and awareness on Higher Education Institute (HEI) campuses regarding sustainability and energy efficiency. It is therefore pressing to support the development of sustainability in HEI campuses in Malaysia, and even more so to do it through a national platform, to ensure that more concerted activities will have a better impact at both local and national levels.

### OBJECTIVES OF MYSUN

Following a real need identified to support the Malaysian higher education system in increasing the knowledge and skills of their staff, having access to good practices developed in other institutions, and strengthening their ability to cooperate in this issue both locally and on a national level, the Erasmus+ CBHE project "Malaysia Sustainable University Campus Network, or MYSUN, has an overall aim of promoting Malaysian university campuses as "living laboratories" for sustainability and energy efficiency.

Specifically, MYSUN aims:

- To strengthen the human capacities in university campuses' sustainability and energy efficiency in Malaysia;
- To develop a platform to promote and support a culture of sustainable HEI campuses in the Malaysian higher education system through the establishment of the MYSUN Network and the delivery of a pilot MOOC on sustainability in HEI campuses.

Partners

Malaysian Partners:



European Partners:



Picture 26: Sustainability Programme

**mysun**  
Malaysia Sustainable University  
Campus Network

**MASSIVE OPEN ONLINE COURSE (MOOC)**

**MYSUN : BRINGING FUTURE CAMPUS TODAY**

This course is dedicated to promote and deliver information and create awareness among universities on the sustainable campus.

- ✓ SELF-PACED
- ✓ ANYTIME & ANYWHERE  
From 20 June to 31 August 2022
- ✓ FREE
- ✓ CERTIFICATE PROVIDED

**WHAT YOU WILL LEARN**

- 1 Sustainability in General
- 2 Sustainable Campus
- 3 Water Efficiency
- 4 Energy Management
- 5 Waste Management
- 6 Financial Sustainability
- 7 Sustainable Lifestyle

**ENROLL NOW!**

Co-funded by the Erasmus+ Programme of the European Union

<https://ilmu.ump.edu.my/ILMU/>

**8** DECENT WORK AND  
ECONOMIC GROWTH



## SDG 8: Decent World and Economic Growth

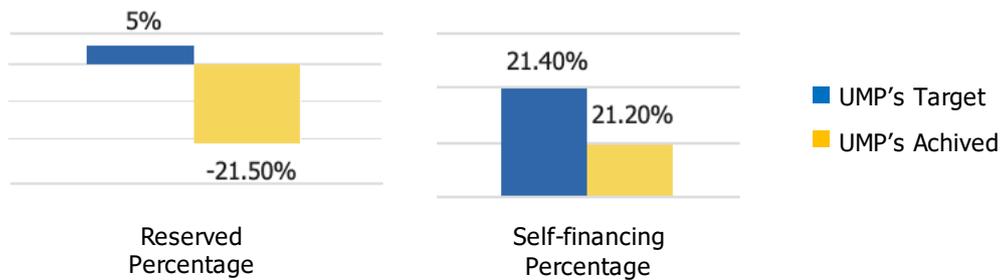
### Strengthening UMP Financial Resources

#### Strengthening UMP Financial Resources Target

- 1 The increase in university reserves refers to UMP's capability to enhance its reserves. This can be achieved through cost-saving measures in operational expenditures and improving the university's internal outcomes.
- 2 The percentage of self-financing for reserve enhancement - the social entrepreneurship approach refers to self-financing social operations.

In the year 2022, the percentage reduction in reserves was 21.50 percent compared to the university's set target. This was due to budget cuts implemented by the government for the annual allocation for the years 2021 and 2022, as well as discounts on student tuition fees and a reduction in income generation. Meanwhile, the percentage of self-financing was 21.4 percent, slightly exceeding the university's target of 21.20 percent.

**Chart 7: Strengthening UMP Financial Resources for the Year 2022**



### Graduate Entrepreneurship

**Picture 27: Entrepreneurial Achievements of Students in 2022**



**29**

#### Student Entrepreneurs Program

- Celcom Siswaprenuer
- Shopee Siswa Mall
- Bank Rakyat UNIprenuer
- Digital Business Webinar
- SSM Orientation Sessions
- Mobile Apps Freelance Workshop
- TikTok Entrepreneurship Course
- Webinar: Technopreneurship as a Business Boostina Strateav

**856**

#### Student Entrepreneurs

- Registered with SSM (Companies Commission of Malaysia) and PUPUK (a Malaysian government agency supporting entrepreneurship).
- Engaged in both physical and online businesses.

**48**

#### Strategic Partnership

- Industry and Private Company
- Community
- Public University
- NGO
- Ministry

**20**

#### Strategic Partnership

- Six Category Rating A (Job Creator)
- 14 Category Rating B+ (Freelancer)

**Picture 28: Student Entrepreneurs Achievement 2022**



The Jauhar Straw Group from UMP achieved success when they were selected as the winners of the Best Product Transformation Video in the Big Stage I-Procom Program and the IPROCOCM Closing Ceremony.



In the Bank Rakyat UNIPrenuer program, a total of 23 individuals have been selected to receive a business grant of RM3,000.00 each as business assistance.



UMP, represented by two postgraduate students from the Faculty of Industrial Management, successfully secured fourth place in the final competition of the Business Entrepreneurship Case Study Challenge held during the International Higher Education Institution's Conference and Exhibition 2022 (PECIPTA'22).

**Picture 29: Student Entrepreneurs Activities 2022**

Coffee at the Roolie Café Collaboration Kiosk



Takoyaki Oden Kiosk



Fried Chicken Stall by TUBERS



Indian Food Selling by Students at Kiosk



Food and Beverage Stall by Bank Rakyat UNIPrenuer Participant.



Food Stall (Burger) by Bank Rakyat UNIPrenuer Participant.

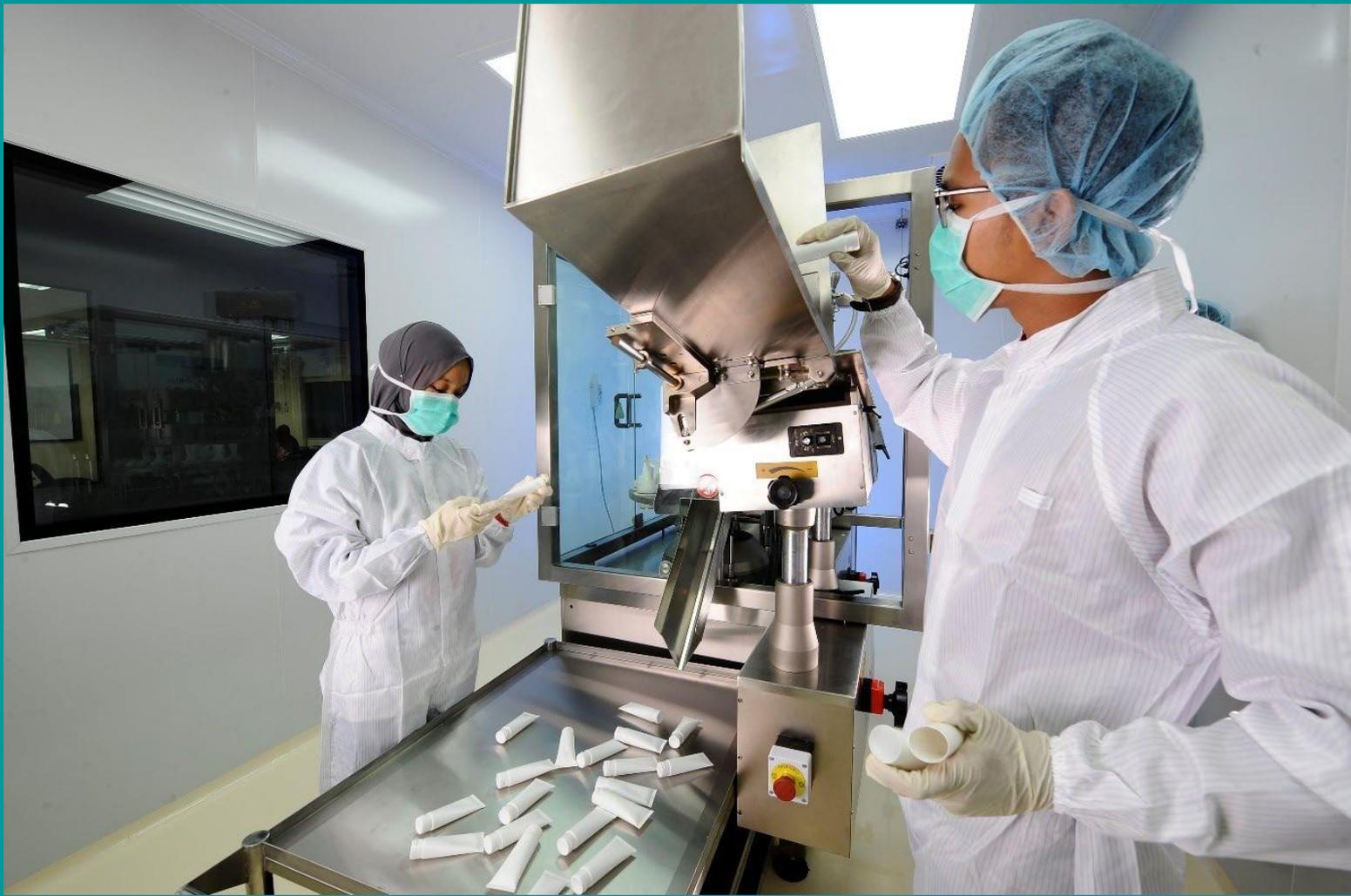


**Picture 30: UMP-KPT Outreach Programme Supports Single Mothers with Pineapple Mushroom Innovation**



The Pineapple Mushroom Innovation Project introduced by Universiti Malaysia Pahang (UMP) lecturer, Associate Professor Dr. Aizi Nor Mazila Ramli, is a programme that provides training for single mothers and needy families on cultivating pineapple mushrooms, which can enhance family income through the sale of the produce. This programme is conducted at the Nur Iman Orphanage and Poor Children's Home in Kempadang, Kuantan. It also serves as a platform for the university to engage with the community and share the expertise available at the university.

**9** INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



## SDG 9: Industry, Innovation and Infrastructure

### Innovation with Industrial Collaboration



The year 2021 has witnessed a strengthening and empowerment of the research agenda, industrial innovation, and commercialization in alignment with UMP's Strategic Plan 2021–2025 through the strategic objective of Innovation with Industry Collaboration and High-Impact Technological Exploration.

The realignment involves the empowerment of research, industrial innovation, and commercialization in terms of enhancing the dynamic and proactive research capabilities and capacities through grant administration and the provision of new high-impact grants with the specific objective of generating new ideas, focusing on current strategic national issues, addressing challenges, and adapting to the Digital Transformation through the Industry 4.0 Revolution.

The objective of innovation with industry collaboration enhances the technical capabilities of UMP and Industry. This is achieved not only by transferring the knowledge and technical capabilities available at UMP to the industry but also by transferring knowledge and technical capabilities from the industry to UMP. All of this will build a knowledge-based economy in which knowledge is used to create goods and services.

In the long term, it will create a knowledge society, a society that generates and shares knowledge to improve human life. In the context of UMP's Strategic Plan 2021-2025, technical training offerings, the implementation of collaborative projects to upgrade technical capabilities, and the development of products using UMP's technical expertise and that of the industry will be carried out. This, in itself, will enhance the synergy between UMP and the industry.

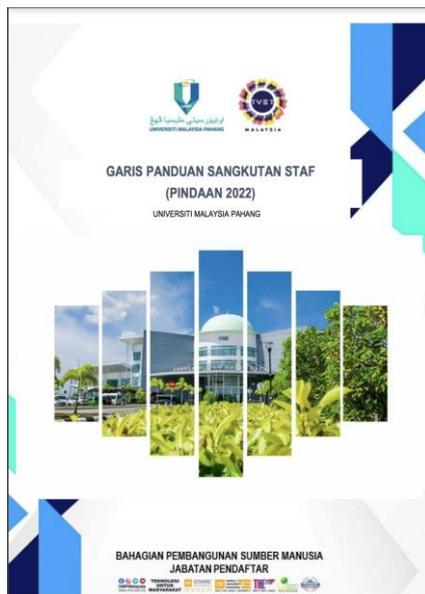
## Practical Training With Industries

### Confucius Institute offers Metallurgy Mandarin for Industry



The Confucius Institute (CI) UMP has dispatched six Chinese Mandarin language teachers to teach at the CI UMP teaching site at ASSB starting from June 2022. The Confucius Institute UMP has offered a Metallurgy Mandarin course for four plants at Alliance Steel (M) Sdn. Bhd. (ASSB), namely the Coking Plant, Iron Making Plant, Steel Rolling Plant, and Steel Making Plant from July to December 2022. A total of 429 Malaysian workers participated in this training course at ASSB. The Confucius Institute UMP has developed the Metallurgy Mandarin course based on different technical vocabulary used at each plant to enhance communication between Malaysians and Chinese staff working

### Research Engagement Programme Guidelines



The Research and Innovation Department has developed the External Research Engagement Program Guidelines to support research engagement activities, where researchers are given the opportunity to enhance their competencies through real-world exposure and experience. These opportunities can also be leveraged by researchers to strengthen their knowledge in keeping up with the latest developments in technology or more advanced and modern research facilities. This engagement program may encompass training, research, or courses involving research technology advancements with experts and facilitating the sharing of experiences and expertise.



E-Anfun Handover Ceremony with Sime Darby

**Table 19: List of Innovation Programme Collaborations with Industry 2022**

NO	PROGRAMME	DATE	PLACE
1.	The Handover Ceremony of E-Anfun with Sime Darby <ul style="list-style-type: none"> <li>The MTUN - Industry Matching Grant between UMP and Sime Darby Plantation Research (SDPR) has successfully produced E-Anfun, a highly effective device for detecting odours and, in turn, helping to reduce operational costs in addressing odour-related issues. The production of E-Anfun by the project leader, Associate Professor Dr. Saiful Nizam Tajuddin, will be installed at the Sime Darby Oils soybean oil extraction plant in Nonthaburi, Thailand, and the same product will also be processed to monitor the quality of coconut oil.</li> </ul>	11 January 2022	UMP Pekan
2.	Briefing Research Consortium Partnership Research Excellence (KKP)	14 March	Online
3.	Hands-On Simulation Seminar – Practical Approach to Industrial Research and Commercialization	19 to 20 May 2022	
4.	Agricultural Drone Demonstration with the Chairman of UMP's Board of Directors, Tan Sri Dato' Sri Dr. Abdul Aziz Abdul Rahman <ul style="list-style-type: none"> <li>A group of researchers from the Centre for Design and Technology Innovation (PRInT) has successfully developed a multifunctional drone using local expertise known as 'Rajawali' to expand innovation and the use of new technology in enhancing agricultural sector productivity. The production of this drone is funded through the university's special allocation in the agricultural quality improvement category. The Rajawali drone has a tank capacity of 30 litres with a maximum water spraying speed of 10 litres per minute, and its spraying efficiency covers up to 0.4 acres per minute.</li> </ul>	20 May 2022	Kampung Serandu Pekan
5.	Visit to the University College Sabah Foundation (UCSF) and Sabah Foundation	27 to 29 July 2022	Sabah
6.	Launch Programme of Malaysia's Halal Expedition 2022 in Pahang	20 July 2022	Grand Darul Makmur Hotel
7.	Industry and International Grant Briefing Session	16 August 2022	Online
8.	Briefing and Strategic Collaboration Sharing Session between UMP and the Sultan Mizan Antarctic Research Foundation (YPASM)	16 August 2022	



Agricultural Drone Demonstration with the Chairman of UMP's Board of Directors, Tan Sri Dato' Sri Dr. Abdul Aziz Abdul Rahman.



Memorandum of Agreement (MoA) between UMP and six industry

**Table 20: List of Innovation Programmes with Industry 2022**

NO	PROGRAMME	OBJECTIVE	DATE
1.	Memorandum of Understanding (MoU) between UMP and NanoMalaysia Berhad (NMB)	<ul style="list-style-type: none"> <li>Successfully realizing the Biomass Innovation Circular Economy Programme (BICEP) research project. This project will utilize agricultural biomass residues in Malaysia to produce advanced high-quality materials and products with various benefits, such as cutting-edge materials like graphene, nanocellulose, and nanosilica that can be used for the Internet of Things (IoT) devices, electric vehicle (EV) components, and renewable energy fuel materials like hydrogen.</li> </ul>	9 September 2022
2.	Certificate of Collaboration between UMP and the Malaysian Rubber Council (MRC)	<ul style="list-style-type: none"> <li>The collaboration covers areas related to the rubber industry and rubber products or technology outputs. A joint agreement has been signed to explore cooperation opportunities in research, innovation, and commercialization for the submission of research proposals under the MRC Global Funding for Rubber Innovation programme.</li> </ul>	11 October 2022
3.	Memorandum of Agreement between UMP and six industry partners	<ul style="list-style-type: none"> <li>The collaboration between UMP and Nardoni Sdn. Bhd., Indah Water Consortium Sdn. Bhd., Fung Yuan Biotechnology Sdn. Bhd., IWK-Pahang Certifying Agency Office, Gapura Solution Sdn. Bhd., and YP Plantation Holdings Sdn. Bhd. involves technology transfer, research expertise sharing, technology development enhancement, human capital development, and knowledge sharing in product commercialization.</li> </ul>	12 October 2022
4.	Memorandum of Agreement between UMP and eight industry partners	<ul style="list-style-type: none"> <li>A collective agreement with eight industries in the development of Work-Based Learning (WBL) research and learning, which is set to benefit in producing holistic graduates.</li> <li>The industry partners are Kaneka (Malaysia) Sdn. Bhd., MZR Global Sdn. Bhd., Cybersecurity Malaysia, MR OSH Solution, Singularity Aerotech Asia Sdn. Bhd., Zen Consult, Pusat Kutipan Zakat Pahang, and BI Technologies Corporation Sdn. Bhd.</li> <li>This initiative aligns with UMP's Strategic Plan 2021-2025, which focuses on innovation through industry collaboration in the university's effort to produce graduates who can apply the theories learned at the university to solve real practical problems in the industry.</li> </ul>	9 December 2022

**Table 21: List of Innovation Programmes with Industry 2022**

NO	SITE VISIT	DATE
1.	UMP visit to Universiti Teknikal Malaysia Melaka (UTeM)	5 to 6 June 2022
2.	UMP visit to Universiti Tun Hussein Onn Malaysia (UTHM)	13 to 15 June 2022
3.	UMP visit to Universiti Malaysia Perlis (UniMAP)	19 to 20 October 2022
4.	Universiti Tun Hussein Onn Malaysia (UTHM) visit to UMP	7 to 8 February 2022
5.	Universiti Teknikal Malaysia Melaka (UTeM) visit to UMP	9 to 10 June 2022
6.	Universiti Malaysia Perlis (UniMAP) visit to UMP	7 October 2022
7.	UMP visit to Universiti Teknikal Malaysia Melaka (UTeM)	5 to 6 June 2022



Site visit for research grant projects of the Malaysian Technical University Network (MTUN) - Industry and Commercial MTUN to observe the progress of projects approved for Project Leaders at MTUN.

## Development Grant

**Table 22: List of Development Grants 2022**

NO	RESEARCHER	RESEARCH TITLE	FACULTY
1.	Ts. Dr. Mohd Izham Mohd Jaya	Sigma: An IoT Controlled Environment System for a Green Leafy Vegetable Factory.	Faculty of Computing
2.	Ts. Dr. Ferda Ernawan	PDF Authentication and Self-Recovery Software (PDF-AUSR).	
3.	Ts. Dr. Ahmad Firdaus Zainal Abidin	Cryptojacking Detection System Using Product Moment Correlation Coefficient (PMCC) Heatmap and Machine Learning Intelligence.	
4.	Dr. Mohd Nadzeri Omar	Development of Motion Tracking Device to Determine Biomechanics of a Golf Player.	Faculty of Mechanical and Automotive Engineering Technology
5.	Ts. Dr. Mohamad Zairi Baharom	Design and Development of a Driving Simulator for Road Safety Research.	
6.	Dr. Zulkifli Ahmad@Manap	Development of the Table Tennis Ball Launcher for Training Purposes.	
7.	Ts. Dr. Norazlianie Sazali	Development of Modified Cream Separator Machine for Food Industry.	Faculty of Manufacturing and Mechatronics Engineering Technology
8.	Assoc. Prof. Dr. Muhammad Sharfi Najib	Development of Mobile Optical Sensor for Palm Oil Fruit Ripeness Detection	Faculty of Electrical and Electronic Engineering Technology
9.	Dr. Amir Izzani Mohamed	The Development of a Portable Low-Power High Voltage Impulse Test Set with Climate Chamber.	Faculty of Chemical and Process Engineering Technology
10.	Assoc. Prof. Ts. Dr. Mohd Yusri Mohd Yunus	LKPP Wastewater Processing by Using Fixed Bed Biofilm Reactor (FBBR), Ozonation and Electrodialysis.	Faculty of Industrial Science and Technology
11.	Assoc. Prof. Dr. Aizi Nor Mazila Ramli	Development of Oyster Mushroom Cultivation Substrate Using Pineapple Waste for Commercial Purpose.	

### Industrial Grant

For the acquisition of funds from the industry, UMP has received a total of RM2,731,017.00 from industries and private companies, showing a 97 percent increase compared to 2021, which was RM1,383,750.00. In 2022, the total number of industry grants registered was 38, compared to only 18 in 2021.

This significant and reassuring increase demonstrates the trust that the industry and private sector have in the university for collaboration. UMP's aspiration to become a focal research and study centre on the East Coast is hoped to be achieved with this growth. UMP is gaining recognition and trust for its problem-solving capabilities.

**Table 23: List of Industrial Grants 2022**

NO	RESEARCHER	RESEARCH TITLE	GRANT PROVIDER	TOTAL
1.	Dr. Lim Kar Sing	Research and Development (R&D) of Magnetic Patch for Leaked Pipeline Repair.	Gapura Solution Sdn. Bhd.	RM109,340.00
2.	Dr. Daing Mohamad Nafiz Daing Idris	Study on Gelam Essential Oil: Extraction Technique Optimization, Pharmaceutical and Therapeutic Potential.	Gelamekar Sdn. Bhd.	RM50,000.00
3.	Ts. Dr. Syafiq Fauzi Kamarulzaman	Design and Development of Automated Vegetable Type and Size Classification System Based on Artificial Intelligence.	Idea Company Sdn. Bhd.	RM24,000.00
4.	Profesor Dr. Othman Che Puan	Kuantan City Traffic and Public Transportation Studies	Majlis Bandaraya Kuantan	RM198,682.00
5.	Dr. Jamaludin Sallim	A Development of Intelligent Business Process Automation for Complex OSH Digitalization and Data Process.	Mr OSH Solution	RM15,000.00
6.	Ts. Dr. Roshahliza M Ramli	Investigation of Sensor Probe Performance on Different Types of Medium and Environmental Conditions for Use in Smart Agriculture System.	Singularity Aerotech Asia Sdn. Bhd.	RM26,000.00
7.	Dr. Nazikussabah Zaharudin	A Comparative Study on Commercial Pesticides Against Yellow Stem Borer ( <i>Scirpophaga Incertulas</i> ) of White Rice in Malaysia.	CTZ Jaya Resources	RM10,000.00
8.	Ts. Mohd Najib Razali	Development of Biodegradable Grease for Food Grade Application.	UMW Innovation And R&D Centre Sdn. Bhd. (UIRDC)	RM18,328.00
9.	Assoc. Prof. Dr. Mohd Fakhurrizi Ishak	Subsurface Exploration and Modelling to Determine Potential Ore Body on Secondary Deposit.	Zen Consult	RM20,000.00
10.	Assoc. Prof. Dr. Aizi Nor Mazila Ramli	Development of Large-Scale Cultivation Method of Tiger's Milk Mushroom ( <i>Lignosus Rhinocerotis</i> ).	Nardoni Sdn. Bhd.	RM50,000.00
11.	Ts. Dr. Nadiatul Adilah Ahmad Abdul Ghani	The study for the proposal to upgrade the infrastructure to reduce flooding in Kelat Rendang, Pekan.	Perunding EJA	RM10,000.00
12.		Flood Simulation Study for the CSR Project from Kampung Relong to Raub, Pahang.	T & T Konsult Sdn. Bhd.	RM40,000.00
13.	Ts. Dr. Suryanti Awang	Development of E-Personal Module or E-Zakat System at the Pahang Zakat Collection Center.	Pusat Kutipan Zakat Pahang	RM28,000.00
14.	Dr. Rasidi Roslan	Bench Scale Production of EFB Based Crystalline Nanocellulose (CNC).	Nanomalaysia Berhad	RM270,692.00
15.	Dr. Suryati Sulaiman	Enhancement of Sewage Treatment System Via Phytoremediation Technology.	Indah Water Konsortium Sdn. Bhd.	RM40,000.00

NO	RESEARCHER	RESEARCH TITLE	GRANT PROVIDER	TOTAL
16.	Abbas Saliimi Lokman	VAPT Finding on MHB Cpt Android Mobile.	Malaysia Marine and Heavy Engineering Sdn. Bhd. (MMHE)	RM6,500.00
17.	Dr. Noormazlinah Ahmad	Formulation of Seaweeds Fermented Products with Addition of Prebiotics and Reduction of Alcohol.	Fung Yuan Biotechnology Sdn. Bhd.	RM50,000.00
18.	Professor Ir. Ts. Dr. Kamarul Hawari Ghazali	Development of Vision Software Car Aircon Vent Quality Inspection.	East Automation & Engineering Sdn. Bhd.	RM11,000.00
19.	Ts. Dr. Muhammad Fakhrul Yusuf	Direction Formation Programme, Core Values and Strategic Plan.	MUIP Holdings Sdn. Bhd.	RM31,000.00
20.	Assoc. Prof. Ts. Dr. Syarifah Abd Rahim	3rd CFD Analysis of Flow in a Crystalliser	Venator Asia Sdn. Bhd.	RM21,000.00
21.	Ts. Dr. Mohamad Zairi Baharom	Rapid Bridging Solution for Disaster Relief Operation	Stare Resources Sdn. Bhd.	RM43,000.00
22.	Assoc. Prof. Ir. Dr Nurul Hazlina Noordin	Development of Digital Skills for P-Tech (STEM) Accelerator Lab Programme For P-Tech.	IBM Malaysia	RM55,080.00
23.	Ts. Mohd Najib Razali	Characterisation And Preliminary Study of Sugar Mud Waste for Development into Value-Added Products.	Central Sugars Refinery Sdn. Bhd.	RM27,000.00
24.	Ts. Dr. Syafiq Fauzi Kamarulzaman	Automated Product Counting and Real-Time Dashboard for Kaneka Production.	Kaneka (Malaysia) Sdn. Bhd.	RM24,000.00
25.	Ts. Dr. Abdul Rahimi Abdul Rahman	A study on the level of Building Information Modeling (BIM) usage in the construction industry in 2021.	Cream Construction Research Institute of Malaysia	RM20,000.00
26.	Assoc. Prof. Ts. Dr. Sumaiya Zainal Abidin @ Murad	Techno-Economic Analysis of Alumina Production from Aluminium Dross.	Environment Preservation and Innovation Centre Sdn. Bhd.	RM30,000.00
27.	Ts. Dr. Noorhuzaimi @ Karimah Mohd Noor	Developing Mobile and Web Applications.	AUF MBZ Consortium PLT	RM35,000.00
28.	Sr. Dr. Ngahzaifa Ab Ghani	Integrated Security Management System for Kaneka	Kaneka (Malaysia) Sdn. Bhd.	RM10,000.00
29.	Dr. Syifak Izhar Hisham	Security Access Control System Via UWB for Buildings/Areas at Kaneka.		RM13,000.00
30.	Ts. Dr. Noorhuzaimi @ Karimah Mohd Noor	Intelligent Surveillance Via CCTV and Drones.		RM20,000.00
31.	Ts. Dr. NurzetyAqtar Ahmad Azuan	Contractors, Visitors and Transportation Management System (CVTMS).		RM25,000.00
32.	Professor Dr. Mohd Hasbi Ab Rahim	Development and Scale-Up of Hydraulic Fracturing Fluid and Well Cleaning Fluids for Oil and Gas Applications.	Nano Commerce Sdn. Bhd.	RM206,695.00
33.	Dr. Rasidi Roslan	Scale-Up Production of EFB Based Crystalline Nanocellulose (CNC).		RM893,000.00
34.	Dr. Izan Izwan Misnon	Development And Scale-Up of UV-Curable Coatings (UVCCS) for Paint and Coating Application.		RM233,500.00
35.	Ts. Dr. Tuty Asmawaty Abdul Kadir	The Development of a Virtual Reality Training Application for Routine Activity in Kaneka (Chemical Loading from Truck to Tank).	Kaneka (Malaysia) Sdn. Bhd.	RM26,200.00

NO	RESEARCHER	RESEARCH TITLE	GRANT PROVIDER	TOTAL
36.	Ts. Dr. Abdul Sahli Fakharudin	Big Data Analytic for Real-Time Process Monitoring the Polymerisation Reactor.	Kaneka (Malaysia) Sdn. Bhd.	RM10,000.00
37.	Assoc. Prof. Ts. Dr. Mohd Yusri Mohd Yunus	Extraction of Erbium and Ruthenium from Leaching Concentrate.	MYAH Mines Sdn. Bhd.	RM20,000.00
38.	Dr. Zafril Rizal M Azmi	The Research on Special Needs Children Education System.	MZR Global Sdn. Bhd.	RM10,000.00

## International Grants

The increase in international trust in technology and expertise through international grant collaborations is highly convincing. This is evidenced by the increase in the number of international grants received in 2022, totalling 22 projects compared to seven projects in 2021. The percentage increase is 200 percent.

**Table 24: List of International Grants 2022**

NO	RESEARCHER	RESEARCH TITLE	GRANT PROVIDER	TOTAL
1.	Dr. Mohd Shaiful Zaidi Mat Desa	The Purification and Production of Silicon Metal from Silica.	Saudi Geological Survey	RM14,249.00
2.	Dr. Siti Hajar Noor Shaarani	Hydroponics And Aquaponics with a lot in Qatar (HAIAT).	Qatar National Research Fund (QNRF)	RM89,322.00
3.	Dr. Mohd Nadzeri Omar	Development of Test Platform for VRU Soft Target.	ASEAN NCAP	RM15,000.00
4.	Cik Yong Ying Mei	Chinese Language and Professional Skills Training and Teaching Material Development in East Coast Malaysia.	Ministry of Education China	RM132,000.00
5.	Ts. Dr. Mohamad Zairi Baharom	Malaysian Driver's Response During Obstacle Avoidance Task Using Driving Simulation Study.	FIA Foundation, Global NCAP& OEMS	RM19,800.00
6.	Ts. Dr. Zainah Md. Zain	Underwater Robotics Workshop.	IEEE Pre-University Education Committee	RM8,661.00
7.	Dr. Jacqueline Isabella Anak Gisen	Artificial Intelligence-Based Flood Safety Technique.	China Institute of Water Resources & Hydropower Research (IWHR)	RM32,987.00
8.	Junaidah Zakaria	A Study on the Prevalence of Forgotten Child in Parked Vehicles Among Malaysians: In Conjunction with Child Presence Detection (CPD) System in the Future ASEAN NCAP Protocol.	ASEAN NCAP	RM30,400.00
9.	Dr. Mohd Hasnun Arif Hassan	Development of A Test Rig to Evaluate Motorcycle Helmet Protection Against Oblique Impact		RM25,700.00
10.	Dr. Mohd Hasnun Arif Hassan	Should Motorcyclist Head Impact Assessment Be Implemented by ASEAN NCAP.		RM14,100.00
11.	Dr. Mohamad Heerwan Peeie	Investigation of The Vehicle Driving Trajectory During Turning at Three-Leg Junction on Dual Carriageway Road.		RM20,000.00
12.	Assoc. Prof. Ir. Dr. Nurul Hazlina Noordin	MySTEM Project: Let's Explore.	Motorola Solutions Foundation	RM133,104.00

NO	RESEARCHER	RESEARCH TITLE	GRANT PROVIDER	TOTAL
13.	Professor Dr. Wan Azmi Wan Hamzah	Tribological Performance of Mono and Hybrid Al <sub>2</sub> O <sub>3</sub> -SiO <sub>2</sub> -TiO <sub>2</sub> Nanolubricants for Automotive Airconditioning Application.	Universitas Muhammadiyah Jakarta, Indonesia	RM10,000.00
14.	Gs. Dr. Syarifuddin Misbari	Smart IoT and Geospatial Approach for Water Quality Monitoring System: Case Study in Galing River, Kuantan.	Kurita Water and Environment Foundation	RM12,938.00
15.	Dr. Nor Aida Zuraimi Md Noar	Mathematical Modelling for Predicting Heat Transferred into Metallic Biomaterial Based on Generated Cutting Force and Surface Roughness.	Telkom University	RM24,000.00
16.	Dr. Zulkhibri Ismail@Mustofa	Mathematical Modelling of Thermal Magnetohydrodynamics Nanofluids Over an Inclined Plate.		RM24,000.00
17.	Assoc. Prof. Dr. Norhayati Rosli	Stochastic Modelling of The Spreading Fake News and Information Through Online and Social Media.		RM24,000.00
18.	Assoc. Prof. Dr. Abdul Rahman Mohd Kasim	Modelling of Hybrid Nanofluid in Improving Thermal Performance of Fluid Flow.		RM24,000.00
19.	Dr. Noryanti Muhammad	Nonparametric Predictive Inference (NPI) for Predicting Forest Fires with Copula		RM24,000.00
20.	Assoc. Prof. Dr. Mohd Sham Mohamad	Deep Learning Via Long Short-Term Memory (LSTM) Model in Predicting Stock Price.		RM24,000.00
21.	Dr. Wan Nur Syahidah Wan Yusoff	Formulation of A Robust Principal Component Analysis Algorithm in Machine Learning for Healthcare Application.		RM24,000.00
22.	Ts. Dr. Ferda Ernawan	A New Texture Preservation In Image Watermarking for Copyright Protection, Image Authentication and Self-Recovery.	Diponegoro University	RM19,000.00

## Matching Grant

UMP's Matching Grant is a grant established for researchers who have successfully secured research funding from international, industry, and agency sources. This funding is internal and aims to increase opportunities to contribute to the discovery of new ideas, knowledge transfer, and focus on innovative and high-impact research.

This grant can encourage collaborative research partnerships and UMP's involvement with external parties in university research projects, which also involve shared ownership of research outputs such as intellectual property, joint publications, product development, and human capital development.

The Department of Research and Innovation, together with industry partners, will contribute to research projects with funding coming from both the university and industry. This joint funding initiative is intended to foster close relationships, collaboration, and shared risk behind the success of a research project.

Researchers, along with industry partners, will be involved either directly or indirectly to ensure that the project's goals and objectives are achieved within the specified timeframe.

**Table 25: List of Matching Grants 2022**

NO	RESEARCHER	RESEARCH TITLE	GRANT PROVIDER	TOTAL
1.	Ts. Dr. Azizan Ramli	Development, Maintenance and Building Infrastructure Assessment: MUIP's Educational Entity.	Majlis Ugama Islam dan Adat Resam Melayu Pahang (MUIP)	RM 33,000.00
2.	Assoc. Prof. Dr. Mahyuddin Ismail	Study on the Empowerment and Recognition Initiatives of the State Religious Board Schools' Education System in Pahang.		RM 63,650.00
3.	Dr. Hajar Fauzan Ahmad	Metagenomic Assessment of Indoor Air Microbiome as A Potential Source of Nosocomial Infections Among Healthcare Workers.	National Institute for Occupational Safety and Health (NIOSH)	RM 119,000.00
4.	Khairul Fikri Muhammad	Mechanical Properties of Tin Filament Strengthened 316l Prepared by Wire-Based Laser Directed Energy Deposition.	Lembaga Perusahaan Timah	RM 10,000.00
5.	Dr. Mohamad Heerwan Peeie	Development of Camkenderaan Device for Forensics Data Preservation.	Cyber Security Malaysia (CSM)	RM195,000.00
6.	Dr. Muhammad Ashraf Bn Fauri@ Fauzi	Talent Management for Excellence Series (TAME) Kohort 4.	Akademi Kepimpinan Pendidikan Tinggi (AKEPT)	RM180,000.00
7.	Professor Dr. Muhammad Nubli Abdul Wahab	The Use of Biosensors in Helping to Increase the Success of Islamic Family Counseling or Consultation Sessions.	Jabatan Agama Islam Negeri Johor (JAIJ)	RM 8,000.00
8.	Dr. Suhaidah Hussain	Study on the Creation of a Specialized Entity for the Management of Entry, Issuance and Termination of Temporary Work Visit Passes (PLKS) for Foreign worker.	Institut Keselamatan Awam Malaysia (IPSOM)	RM 71,000.00
9.	Dr. Rasidi Roslan	Development of UV-Curable Lignin-Based Coating Aerosol Prototype with Cellulose Nanocrystal as Self-Healing Accelerator for Automotive Application	TED 1: Kementerian Sains, Teknologi dan Inovasi	RM605,800.00



**UMP and ASSB Forge Strategic Collaboration in Academics and Human Development.**



UMP and Alliance Steel (M) Sdn. Bhd. (ASSB) signed a Memorandum of Understanding (MoU) for academic and research collaboration that will benefit both parties on May 19, 2022. Through this collaboration, UMP and ASSB will develop the teaching site of the Confucius Institute (CI) UMP to offer technical courses in Mandarin language in the field of metallurgy for ASSB's local staff, enhancing proficiency in Mandarin and Vocational Education.

**PRODUCT COMMERCIALISATION AND TECHNICAL SERVICES**

Commercialization, in brief, is defined as the process of bringing Intellectual Property (IP), technology, products, innovations, services, or expertise to the market. As one of the members of the Malaysian Technical University Network (MTUN), apart from aiming for income generation, UMP aspires to produce more engineering and technology-based research products through high-impact research and development that meet the needs of both the local and international markets. Subsequently, these products/technologies can be commercialized and utilized by the local community.

**Picture 31: Overall Commercialization Achievement**



**The establishment of academic staff-based entrepreneurial companies focused on products and services**

The establishment of publishing and startup companies is a part of the core objectives of UMP25's Strategic Objectives. It aims to establish more entrepreneurial companies led by academic staff focusing on products and



services by 2025. As of 2022, a total of five publishing companies have been established through the commercialization of UMP's technology/products. companies is a part of the core objectives of UMP25's Strategic Objectives. It is aimed to establish more entrepreneurial companies led by academic staff focusing on products and services by 2025. As of 2022, a total of five publishing companies have been established through the commercialization of UMP's technology/products

## Number and Sales Results of Commercialized Products

**Picture 32: Achievement of the Number and Sales Results of Commercialized Products**

RM206,147.32 is the gross sales revenue for the year 2022 from 35 products that were commercialized in 2021.

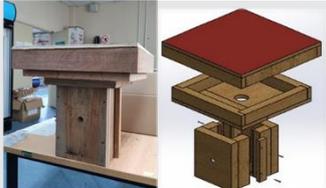


A total of 38 research products have been commercialized as of 2022, with a gross sum of RM7,286,112.94.

**Table 26: Number and Revenue of Cumulative Product Sales Until 2022**

NO	PRODUCT	TOTAL	BIL.	PRODUCT	TOTAL
1.	Recycling of Base Oil from Spent Lubricant	RM1,980,955.03	21.	Home Detergent	RM33,842.28
2.	Pisoptera	RM1,875,184.70	22.	Kinora: Natural Lip Balm	RM32,964.00
3.	Pestkill	RM896,637.22	23.	Iszuani Hongo 2	RM32,341.60
4.	Mandarin For All 2	RM242,435.25	24.	Gris	RM37,542.62
5.	Mandarin For All 1	RM210,922.95	25.	Sleekpump	RM29,216.00
6.	DiaClean	RM199,894.00	26.	Pre-Pecto	RM29,191.25
7.	Emulsifier	RM196,281.60	27.	Inazuma Jap 1	RM26,853.00
8.	Rediac	RM184,800.00	28.	Jusz Eat Cat Food	RM16,634.50
9.	G-Bricks	RM181,221.40	29.	Natural Antibacterial Hand Sanitizing Gel	RM15,796.00
10.	Asarfonts	RM170,655.00	30.	FBG Sensor Mock	RM15,635.00
11.	Oudino	RM145,832.40	31.	Bio Root <i>Tongkat Ali</i> Capsule	RM8,216.00
12.	Inulin	RM130,950.00	32.	Organic Fertilizer	RM7,895.00
13.	Dr. Fur	RM124,000.00	33.	Iszuani Hongo 1	RM6,510.00
14.	E-Anfun Sensor	RM112,666.20	34.	Nina Square Root	RM5,086.00
15.	Stem Bot	RM74,000.00	35.	Electronic Wheelchair	RM3,575.00
16.	Germes Free 2.0	RM59,878.00	36.	Agrisoft	RM3,510.00
17.	Wrehab Device	RM59,620.00	37.	<i>Kacip-Fatimah</i> Based Supplements	RM2,795.00
18.	Biofeedback	RM50,189.98	38.	Merkit	RM1,981.00
19.	<i>Misai Kucing</i> Extract	RM40,404.96			
20.	ECOSY Hive	RM40,000.00			
				<b>TOTAL</b>	<b>RM7,286,112.94</b>

In 2022, three new products were commercialized, namely ECOSY Hive, FBG Sensor Mock, and Jusz Eat Cat Food.

ECOSY HIVE	FBG SENSOR MOCK	JUSZ EAT CAT FOOD
 <p>ECOSY Hive is a product developed as a solution to reduce the need for wooden logs in beehive colonies, thereby reducing the necessity to cut down trees for log procurement and preserving the ecosystem.</p>	 <p>This monitoring device features an all-in-one configured FBG sensor analyzer for static, dynamic, or static and dynamic measurements.</p>	 <p>Jusz Eat is a super-premium cat food that emphasizes natural and halal-based ingredients. This product focuses on both kittens and adults due to its high protein content, which is 38 percent.</p>

## Revenue generation from Consultation and Technical Services

<b>234</b>	RM748,582.48	<b>417</b>	RM372,957.40
Consultation Revenue		Technical Services Revenue	

**Table 27: Consultation Revenue**

NO	DEPARTMENT	TOTAL PROJECT	PROJECT VALUE
1.	Faculty of Computing	1	RM1,500.00
2.	Faculty of Industrial Management	2	RM6,000.00
3.	Faculty of Science and Industrial Technology	20	RM99,164.16
4.	Faculty of Civil Engineering Technology	126	RM247,799.94
5.	Faculty of Chemical and Process Engineering Technology	17	RM130,469.95
6.	Faculty of Mechanical and Automotive Engineering Technology	4	RM32,866.31
7.	Faculty of Manufacturing Engineering and Mechatronics	5	RM94,047.65
8.	College of Engineering	3	RM15,328.00
9.	Central Laboratories	2	RM15,984.27
10.	Nature Centre	2	RM5,247.00
11.	Bioaromatic Centre	48	RM78,616.00
12.	Ecosystem and Natural Resource Sustainability Centre (Nature Centre)	1	RM1,908.00
13.	Earth Resource Sustainability Centre	3	RM3,978.00
14.	Advanced Fluid and Process Research Centre (Fluid Center)	2	RM1,890.00
15.	Humanities Science Centre	5	RM11,383.20
16.	Mathematics Science Centre	2	RM2,400.00
<b>TOTAL</b>		<b>243</b>	<b>RM748,582.48</b>

**Chart 8: List of Technical Services Projects 2022**



**10** REDUCED  
INEQUALITIES

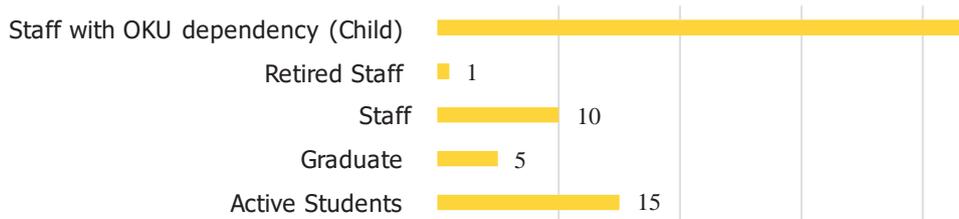


## SDG 10: Reduce Inequalities

### Disabled Persons Service Unit (OkUMP)

Established to provide services to disabled staff and students at UMP by creating an inclusive and conducive campus. The three sources of authority that approved the establishment of OkUMP are the 124th Meeting of the UMP Management Committee on 15th December 2019, the Implementation of the MyU-OKU KPT System Audit effective on 30th December 2019, and the 139th Meeting of the UMP Management Committee on 8th October 2020.

**Chart 9: OkUMP Resident Statistics for the Year 2022**



### The Community Rehabilitation Programme (PPDK)

- The OkUMP Service Unit received an allocation of RM 1.6 million for the PPDK initiative from the Ministry of Finance Malaysia through the Ministry of Higher Education (MoHE) on May 13, 2022.
- UMP focuses on Inclusive Technology (Establishment of the OkUMP Studio: Digital Disabled Hub and i.K.M.A.L Module) in line with the implementation of the UMP Strategic Plan 2021-2025, namely Strategic Objective 5B (3): Welfare Human Resources, which aims to create an inclusive and conducive OkUMP ecosystem.
- The five universities that received the PPDK initiative are Universiti Malaysia Pahang (UMP), Universiti Sains Malaysia (USM), Universiti Pendidikan Sultan Idris (UPSI), Universiti Islam Antarabangsa Malaysia (UiAM), and Universiti Putra Malaysia (UPM).

### Upgrade Project for UMP Pekan's Disabled-Friendly Facilities

- UMP has received an allocation of RM500,000.00 for the upgrade project of disabled -friendly facilities at UMP Pekan under the Center for Development and Property Management (PPPH). This project includes the construction of disabled ramps (ramp), disabled parking spaces, disabled toilets, disabled-friendly pathways, drain covers, and disabled toilet door signs.
- UMP has also received an additional allocation of RM400,000.00 to cover the costs of this upgrade project.





International University  
Carnival on e-Learning  
(IUEL 2022)

### Professional and Inspirational Speaking Series

- Professional Talk Series: Society 5.0 - Exploring Global Career Opportunities, Inclusive Leadership and Community Sustainability (Jepun) on 22 June 2022.
- Inclusive Leadership: Happy Women for Happy Family and Community (Indonesia) pada 18 May 2022.

### Memorandum of Understanding (MoU)

- MoU between UMP and Seibu Shoko Corporation Limited on 29 August 2022.
- MoU between UMP and Lemonkai dan Sango - Town on 28 November 2022.

### Inclusive Ecosystems Ekosistem Mission to Japan

Phase 1: 30 October to 5 November 2022.

Phase 2: 27 November to 2 December 2022.

- Participation of delegations from the Ministry of Higher Education (MoHE), Ministry of Finance (MoF), and Department of Social Welfare as well as UMP.
- Development of the i.K.M.A.L (PPDK) Module.

**Table 28: OkUMP National Level Achievements for 2022**

NO	PROGRAMME/ACTIVITY	DATE
1.	Inclusive Open Educational Resources (iOER)	5 August 2022
2.	Memorandum of Understanding (MoU) between UMP and Akar Indah Engineering Sdn. Bhd.	26 June 2022
3.	Inspire Carnival Active Disability 2022 Pahang State Level	10 to 11 December 2022

**Table 29: OkUMP University Level Achievements for 2022**

NO	PROGRAMME/ACTIVITY	DATE
1.	OKU Mobility Vab	11 January 2023
2.	Appointment of Staffing (Iktisas Service Scheme)	13 July 2022 and 3 October 2022
3.	Direction Workshop for the Unit of Persons with Disabilities Services (OkUMP)	22 to 23 September 2022
4.	Friendly Interview Session with UMP's OKU Alumni	6 August 2022 and 5 to 8 November 2022





**Table 30: List of Internal Programmes and Activities for the Year 2022**

NO	PROGRAMME/ACTIVITY	DATE
1.	Appreciation Ceremony for UMP's OKU	15 January 2022
2.	Global Inspiring OKU UMP Talk	15 January 2022
3.	Launch of the OkUMP TV YouTube Channel	15 January 2022
4.	Casual Inspiring OKU UMP Talk (BIO-S): Polishing Talent and Self-Image of OKU: Tips and Charisma	15 January 2022
5.	OkUMP Accord: Face-to-Face Introduction Session for UMP's OKU Community	February 2022
6.	Workshop on Inclusive Open Educational Resources (iOER) Development by the Ministry of Higher Education (MoHE)	4 March 2022
7.		14 March 2022
8.	OkUMP-PNC Discussion Series: Inclusive Open Educational Resources (iOER) Committee and PADU Committee Meetings	6 April 2022
9.	Field Trip and Briefing at the Independent Living Center (ILC) with the OKU Development Division, Pahang Department of Social Welfare, at UMP Pekan	29 April 2022
10.	Field Trip and Briefing at the Independent Living Center (ILC) with the OKU Development Division, Pahang Department of Social Welfare, at UMP Pekan	29 April 2022
11.	Field Trip with Seibu Shoko Co Ltd and Akar Indah Engineering Sdn. Bhd. to UMP Gambang Campus	12 May 2022
12.	Meeting with UMP's Vice-Chancellor, Prof. Dato' Ts. Dr. Yuserrie Zainuddin (Presentation of the Monthly Report of the Disabled Persons Service Unit)	20 May 2022
13.	Professional Talk Series: Society 5.0: Exploring Global Career Opportunities, Inclusive Leadership, and Community Sustainability by the President of Seibu Shoko Co. Ltd., Japan, Nobu Fujita	22 June 2022
14.	Professional Talk Series: Society 5.0: Exploring Global Career Opportunities, Inclusive Leadership, and Community Sustainability by the President of Seibu Shoko Co. Ltd., Japan, Nobu Fujita	22 June 2022
15.	Workshop Laboratory for OKU-Inclusive Open Educational Resources (iOER) Material Development UMP-KPT-UNESCO 2022	12-13 July 2022
16.	Benchmarking Visit with Media Prima (TV3)	17 August 2022
17.	OkUMP Disabled Persons Service Unit (BAHU) Direction Workshop 2022	22-23 September 2022
18.	Student Body Open Day (JHEPA)	22 October 2022
19.	Friendly Session with OKU Students at UMP's 17th Convocation Ceremony	5 - 8 November 2022
20.	Friendly Session with OkUMP Fellows	23 November 2022
21.	Opening Ceremony of UMP's World Disability Month Celebration Festival (fOKUs) 2022 and the Appreciation Awards Ceremony for UMP's OKU Icons 2022	14 December 2022

NO	PROGRAMME/ACTIVITY	DATE
22.	Inspiring OKU Showcase Programme	17 December 2022
23.	Casual Inspiring OKU UMP Talk (BIO-S): OKU Entrepreneur League Forum	21 December 2022
24.	National Inspiring OKU UMP Talk (BIO-N): Webinar on Disabilities and Web Accessibility	24 December 2022
25.	OkUMP Lens	15 December 2022 to 15 January 2023



11 SUSTAINABLE CITIES  
AND COMMUNITIES



## SDG 11: Sustainable Cities and Communities

### Smart and Sustainable Campus

**Table 31: Achievement Percentage of Sustainable and Smart Campus**

KEY PERFORMANCE INDEX	STATEMENT OF OBJECTIVES	2021 ACHIEVED	2022		
			TARGET	ACHIEVED	% ACHIEVED
<b>CORE 5C: SMART AND SUSTAINABLE CAMPUS</b>					
1. Smart Campus Development	Percentage of Smart Campus Development Progress	-	70%	84%	100%

Note: Among the key initiatives implemented under this KPI are the Virtualized Learning Environment, Complete Campus Connectivity, Integrated Command Centre, UMP Cloud Document Management, UMP Super App, Autonomous Vehicle, and Digital ID.

**Table 32: Key Initiatives Related to Information Infrastructure and ICT Infrastructure Capability Based on Smart Technology.**

NO	PROJECT	% PROGRESS
1.	Upgrading the database system and IMS applications for cross-browser access solutions and improving system performance.	100
2.	Transformation towards modernization of UMP's main application systems, Academic, and Student Information System.	40
3.	Transformation towards modernizing UMP's e-Community application system.	60
4.	Transformation towards modernizing UMP's Financial application system.	5
5.	Transformation towards modernizing UMP's Human Resources application system.	10
6.	Implementing campus Internet access at a speed of 10 Gbps and monitoring campus wide-area network (WAN) access at a speed of 10 Gbps.	90
7.	Implementation of a cloud-based digital telecommunication system for campus communication.	90
8.	Assessment of User Needs and Current WiFi Technology: <ul style="list-style-type: none"> <li>▪ Assessing user needs and current WiFi technology.</li> <li>▪ Designing the campus WiFi infrastructure.</li> <li>▪ Testing mock-ups.</li> <li>▪ Implementing and monitoring the campus WiFi project - RMK 12.</li> </ul>	40
9.	Evaluation of the Latest Network Technology: <ul style="list-style-type: none"> <li>▪ Evaluating the latest network technology.</li> <li>▪ Designing and implementing UMP's network infrastructure.</li> <li>▪ Designing the master plan for the optical fibre network - RMK 12.</li> </ul>	40
10.	Implementation, upgrading, and monitoring of resources at the UMP Pekan Data Center.	100
11.	Establishment of the UMP ICT Disaster Recovery Center at the UMP Gambang Data Center.	100
12.	Implementation of UMP Digital ID (myUMP-ID) for digital access to UMP services.	70
13.	Implementation of Virtual Desktop Infrastructure (VDI) for use in teaching laboratories.	40

**Table 33: Percentage Achievement of Smart and Sustainable Campus Reach.**

KEY PERFORMANCE INDEX	STATEMENT OF OBJECTIVES	2021 ACHIEVED	2022		
			TARGET	ACHIEVED	PERCENT ACHIEVED
<b>CORE 5C: SMART AND SUSTAINABLE CAMPUS</b>					
Development of Sustainable Campus	Percentage Progress of Sustainable Campus Development	-	74%	83.84%	100%

**Table 34: Details of Sustainable Campus Development**

NO	CATEGORY	TOTAL MARKS UI GREENMETRIC CRITERIA	BASELINE 2021 (UMP PEKAN)	TARGET MARKS 2022	ACHIEVEMENT MARKS 2022
1.	Setting Infrastructure (SI)	1,500	1,275	1,325	1,325
2.	Energy and Climate Change (EC)	2,100	850	900	1,675
3.	Waste (WS)	1,800	1425	1,500	1,500
4.	Water (WR)	1,000	900	900	900
5.	Transportation (TR)	1,800	1,475	1,475	1,475
<b>TOTAL</b>		<b>8,200</b>	<b>5,925</b>	<b>6,100</b>	<b>6,700</b>
<b>%</b>		<b>-</b>	<b>72.26%</b>	<b>74.39%</b>	<b>83.84%</b>

### ISO 9001:2015 Awareness Briefing

UMP aims to obtain ISO 9001:2015 certification for the scope of Academic Programme Development and Management of Bachelor's Degree programmes, targeting October 2022 for certification. Therefore, a briefing for the top management, deans, and department heads was conducted by the PHKK in collaboration with the Quality Management Consultant (IPQ), Universiti Utara Malaysia (UUM) on October 7, 2022. Consequently, an Understanding and Implementation Workshop for ISO 9001:2015 with 30 participants or process owners was held on October 31, 2022, at UMP Gambang Campus. Several workshop series and training sessions involving engagement with relevant parties are also planned for the year 2023.

### Information and Communication Technology Centre (ICTC)

#### ISO/IEC 27001:2013 Information Security Management System (ISMS) Certification

The implementation of ISMS at UMP began in 2012 with the establishment of an ISMS team consisting of the ISMS Steering Committee and the ISMS Implementation Committee (JK ISMS PTMK). The ISMS Steering Committee is responsible for approving policies, scope, resources, and endorsing corrective actions for ISMS.

The ISMS Implementation Committee is responsible for creating, implementing, monitoring, and maintaining ISMS at UMP. Internal auditors were also appointed to ensure that all processes and documents developed are accurate and meet the required criteria for certification. To ensure the security of critical information, UMP, through the ISMS Steering Committee, agreed to certify the operations and maintenance scope of the Data Centre at UMP Gambang. This scope was approved by the ICT Council on April 24, 2012.

To ensure the successful implementation and auditing process, various programmes and activities were conducted from 2012 to 2022. These activities were designed to meet the standard requirements and provide understanding to all parties involved in the implementation of ISO/IEC 27001:2013 ISMS.

## Continuous Improvement

Throughout the ten-year journey of ISO/IEC 27001:2013 (ISMS) certification at UMP, many weaknesses have been addressed, including the manual management of documentation processes. The document review process, which was previously conducted in hardcopy format, has been transformed into the ISMS e-Documentation system. This system was developed internally by PTMK and was used during the 2021 document review workshop. In addition to online document review processes, several forms (previously manual) have been digitized.

The requirement for continuous improvement is a key element in ISO 27001:2013 to ensure that UMP's information security is consistently managed effectively. Collaboration and awareness among all UMP members are crucial to instill compliance with the directives and controls outlined in the ICT Security Policy and current procedures. The UMP Information and Communication Technology Centre (PTMK) is in the process of developing an ICT security plan in alignment with the implementation of the ICT Strategic Plan 2021–2025 (ICT25) that supports the UMP Strategic Plan (UMP25) as well as the Public Sector Digitalization Strategic Plan (PSPSA) 2021-2025. Therefore, in the era of digitalization, adherence to policies and procedures issued by the university is essential to ensure that data security is



## CAMPUS DEVELOPMENT

**Table 35: List of Sustainable Projects for 2022**

NO	PROJECT	COMPLETION DATE
<b>CAMPUS FACILITY</b>		
1.	Supplying and installing rainwater harvesting tank systems (SPA) and related works around UMP Pekan.	August 2022
2.	Installation of occupancy sensor lighting systems.	October 2022
3.	Replacement of existing sink faucets with push system faucets.	November 2022
4.	Installation of separate water supply meters for chiller buildings.	
5.	Gradual replacement of existing lights with energy-efficient lights.	January 2023
6.	Providing environmentally friendly vehicles for students and staff, such as electric buses, electric scooters, and electric bicycles, on campus.	March 2023
7.	Upgrading OkUMP offices and studios.	
8.	Upgrading the pathway from the Faculty of Computing to the Tun Abdul Razak UMP Pekan Chancellor's Office for the convenience of Persons with Disabilities (OKU).	May 2023
9.	Establishment of a centralized parking facility with 100 parking spaces (Phase 1).	October 2023
<b>LANDSCAPE</b>		
1.	Workshop for UMP Green Campus Paper Preparation and Discussion of the Draft Budget or Layout for the Convocation Hall.	January 2022
2.	Official Opening of the KPT Career Advancement Programme (Cap)@State by the Minister of Higher Education and the Chief Minister of Pahang	
3.	Sustainable UMP Cycling Programme: Campus Greening Initiative.	February 2022
4.	Field trip to the Malaysian Cocoa Board and Mardi Bagan Datuk Perak for the Campus Cocoa Greening Project at the Property Development and Management Centre (PPPH), Bioaromatic Centre, and University Sports Complex at Universiti Pendidikan Sultan Idris (UPSI) in Tanjung Malim, Perak.	March 2022
5.	Visit the fruit orchard at Mangala Resort and Spa in Gambang, Kuantan.	April 2022
6.	Visit the Black Soldier Fly Production House and Commercial Organic Microgreen Production.	May 2022
7.	Fertigation Webinar by the Agriculture Department.	

NO	PROJECT	COMPLETION DATE
8.	Basic Gardening Course: Youth Atrocity Programme (IYC).	May 2022
9.	Deputy Vice-Chancellor (Research and Innovation) of UMP's site visit to the papaya plantation, lake area, and rare plant area.	June 2022
10.	Dean of the Faculty of Electrical and Electronic Engineering Technology site visit to the papaya plantation to explore opportunities for installing solar electric fences to prevent pest attacks.	
11.	Work visit to MAHA 2022.	
12.	Sustainable campus agenda featured in <i>Awani Pagi</i> news.	August 2022
13.	Working visit to Floria Putrajaya.	
14.	Attending a public awareness lecture on the Wildlife Conservation Act 2010 (Act 716) Amendment and subsidiary laws.	September 2022
15.	UMP Fun Ride Programme.	
16.	Visit of the Deputy Vice-Chancellor (Academic and International) of the Malaysian Technical University Network (MTUN) to UMP.	
17.	Visit of the Vice-Chancellor of Universiti Teknikal Malaysia Melaka (UTeM) to UMP.	October 2022
18.	Upgrading of the deer and swan enclosures and related works at UMP Pekan.	November 2022
19.	Working visit by the Malaysian Green Technology and Climate Change (MGTC) to Rimba Lestari.	
20.	Pahang State Museum Corporation and Way Out Pictures Company visit to the production crew of 'Keeping Pahang'	November 2022
21.	Planting black ginger.	December 2022
22.	Planting pandan coconut trees.	
23.	Planting papaya trees.	
24.	Stingless bees.	
25.	Kleva fertilizer showcase project.	
26.	Planting <i>Karas</i> trees.	
27.	Working visit to Universiti Malaysia Kelantan (UMK) for the management and methods of planting black ginger and black turmeric.	



Visit to Rimba Lestari

## Library



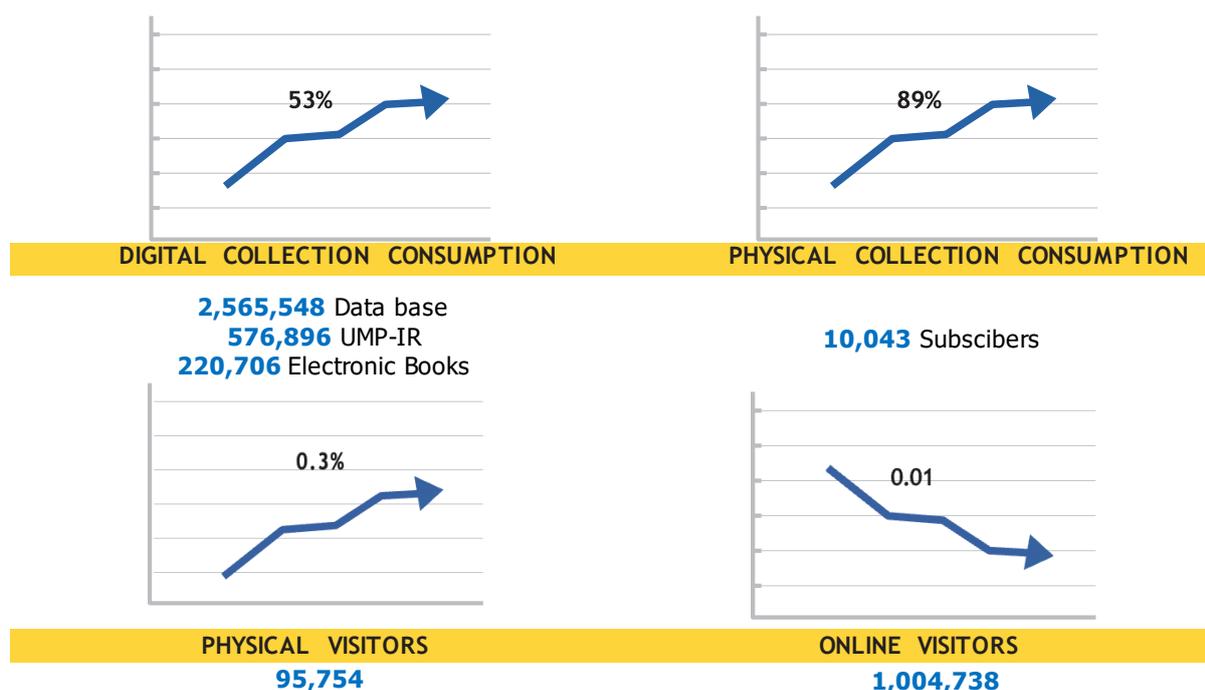
The library's mission to support education, research, and university services through knowledge management, digitization, and library services is realized through the implementation of new and current technologies following current trends. Open-source applications are chosen for the development of new systems based on cost-saving principles and ease of operation. Additionally, to engage with Generation Alpha, TikTok has been introduced as the latest social media platform.

### New Library Systems

To meet the needs of digital resource preservation, a new system called Digital Special Collection has been introduced. This system allows users to access UMP's digital archive, which includes photographs of events since the inception of UMP, newspaper clippings related to UMP, and other materials with historical value to UMP. Furthermore, UMP Library's involvement in collecting and disseminating the cultural heritage of Pahang demonstrates the library's commitment to supporting the university's role as a constructive partner to the state government in economic development, strategic planning, and cultural preservation. Users can access this cultural heritage collection at <https://tamadunpahang.ump.edu.my/>.

### Achievements in Library Services

Library service achievements at UMP can be measured through the usage of collections, both physical and digital, as well as the number of physical and virtual visitors. The usage of digital collections in 2022 is 53 percent increase compared to 2021. Meanwhile, the usage of physical collections increased by 89 percent compared to 2021. This data indicates that library services remain relevant in this digital era. The statistics for physical visitors in 2022 showed an increase of up to 393 percent (totalling 95,754) compared to 2021 (19,532), while virtual visitors slightly decreased to 1,004,738 in 2022 compared to 1,004,865 in 2021.

**Picture 33: UMP's Library Collections****User Education Programme**

The user education programme is a periodic programme conducted according to modules developed by UMP Library. The objective of this programme is to enhance literacy skills, information retrieval, and the use of reference sources that support research activities among library users.

**Table 36: List of Modules Developed in the User Education Programme**

NO	PROGRAMME NAME	FREQUENCY
1.	Introduction to the Library and Online Catalog (eFind)	4
2.	Information Literacy Skills	9
3.	Introduction to the Library and Basic Material Search	20
4.	Mendeley	9
5.	Information Retrieval Strategies	7
6.	Information Retrieval Strategies and Mendeley	2
7.	Turnitin	2
8.	Turnitin (Student Guide)	3

**Knowledge Management Programme**

The user education programme is a periodic programme conducted according to modules developed by UMP Library. The objective of this programme is to enhance literacy skills, information retrieval, and the use of reference sources that support research activities among library users.

**Table 37: List of Knowledge Management Programmes**

NO	PROGRAMME NAME	DATE
1.	Self-Development in Career	10 May 2022
2.	Two-Eyed in TQM	19 July 2022
3.	Customer-Friendly Service	29 to 30 August 2022
4.	Internet of Things: Smart Technology in Libraries	27 to 28 September 2022
5.	Introduction to Knowledge Management	22 to 23 November 2022
6.	Casual Chat Session or Morning Chit Chat	14 and 25 November 2022 7 and 20 December 2022

## Islamic and Human Development Centre

**58**  
Total Human Development  
Programs for UMP  
Personnel and the  
Community



### Picture 34: Total Program Base on Category

- 7** Islamic Celebration Days
- 16** Impactful Program
- 17** Religious Education
- 5** Staff Development
- 4** Talent and Skills
- 9** Woman's Affairs



Sketch of UMP mosque

12 RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



## SDG 12: Responsible Consumption and Production

### Sustainable Lifestyle Contributes to Environmental Preservation



Knowledge Discourse programme titled Environmental Preservation: From Computer Modelling to Global Agenda, organised by the UMP Institute of Civilisation and Strategic Studies (ITKAS), as part of UMP's efforts to achieve the 17 Sustainable Development Goals (SDGs) for a better and sustainable future.

Cycling and walking are sustainable lifestyle practices that contribute to the preservation of the environment. It can also reduce fuel consumption and traffic congestion in addition to making the environment carbon-free. Do simple things at a low cost and acculturate energy and water savings. It is estimated that 30 per cent of energy savings can be achieved through austerity practices as the first step, followed by an increased efficiency level.

Energy reduction is better, including using facilities that suit the needs by taking measures to save electricity and use water prudently since more water and energy resources are needed when more water is used.

UMP can become a collection centre for electronic waste (e-waste), including damaged, malfunctioning, or obsolete electrical and electronic items such as mobile phones, computers, televisions, washing machines, refrigerators and air conditioners. This is because e-waste has become a problem worldwide as more electrical and electronic items are manufactured, increasing the amount of e-waste that needs to be disposed or managed.

## UMP's EKSA Initiative



EKSA is the acronym in Malay for Public Sector Conducive Ecosystem. It is led by MAMPU (Administrative Modernization and Management Planning) and it is rebranding for 5S Implementation of Public Sector in 2010. The purpose is to foster a culture of organizational excellence and a more corporate image for the idea and the creative and innovative activities.

EKSA is an attempt to strengthen the management of the office to create a more conducive environment to help increase UMP employee productivity. The move is in line with efforts to strengthen the organizational culture of high performance and innovative work among personnel UMP through the provision of environmental, and workplace culture and values into practice for all citizens of public sector agencies. The implementation of these practices can produce a conducive work environment, improve the quality of service delivery to customers, and also can improve the safety and comfortability of the UMP community.

### 5 Elements in EKSA

- Corporate image
- Creative and Innovative
- Green Practices
- Conducive environment
- Diversity of agency

### Why We Need EKSA

- Make sure our workplace is clean and comfortable
- Create teamwork with colleagues
- Increase motivation and discipline
- Make work easier due to proper work area
- Keeping people and university safe from hazards and harm

### UMP collaborates with NanoMalaysia Berhad in the BICEP Research Project



UMP signed a MoU with NanoMalaysia Berhad (NMB) to carry out the Biomass Innovation Circular Economy Programme (BICEP) research project. The project will use biomass waste from agricultural activities in Malaysia to produce high-quality advanced materials and products that have various benefits, such as advanced materials like graphene, nanocellulose and nanosilica, that can be used in the IoT devices, EV components and fuels for renewable energy such as hydrogen.

This initiative aligns with the UMP Strategic Plan 2021-2025 (UMP25) towards university excellence involving offering academic programmes, leveraging the latest technology, exploring new technologies, financial and administrative management, and internationalisation and entrepreneurship. This collaboration also involves NMB in research, technical expertise sharing, training and consultancy involving various aspects of industrial relationships.

13 CLIMATE ACTION



## SDG 13: Climate Action

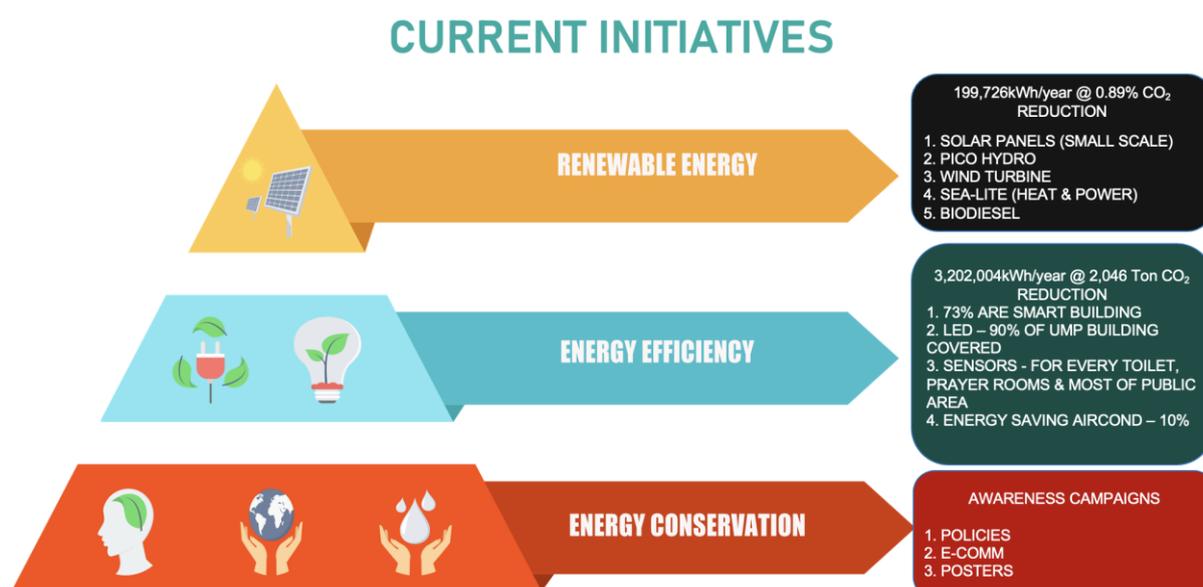
### UMP Carbon Footprint

UMP is highly committed to ensuring a reduction in carbon emissions. For this purpose, UMP has introduced three main initiatives, which are:

- Solar
- Electrical Vehicle
- Centralized Parking

### Initiatives

Picture 35: UMP Carbon Footprint Initiative



Throughout 2022, various programmes and initiatives supporting Energy and Climate Change have been implemented. For renewable energy, UMP has initiated efforts to generate electricity through:

- Solar
- Pico Hydro
- Wind turbines
- Heat and power
- Biodiesel

These five energy sources are expected to generate a total of 199,726 kWh per year. UMP has also implemented energy-saving initiatives through a Smart Building Requirements audit process for all buildings on campus. As a result of the audit, the need to replace energy-efficient equipment will be addressed to meet audit requirements and energy savings. One of the initiatives implemented is the replacement of fluorescent bulbs to LED bulbs. Overall, 90% of the lights in UMP are now LED lights.

UMP uses sensors to help regulate lighting usage in restrooms, prayer rooms, and public areas, in addition to requiring the use of energy-efficient air conditioning. These energy-saving initiatives have resulted in an annual energy savings of 3,202,004 kWh.

Furthermore, UMP has implemented various campaigns and policies to support energy-saving initiatives.

### Portable Sea-Lite uses seawater

UMP researchers has innovated portable lights using seawater electrolytes as the UMP campus in Pekan is close to the beach. According to the Director of the Centre of Excellence for Advanced Materials, Department of Research and Innovation cum the group's lead researcher, Dr. Izan Izwan Misnon, Sea-Lite is a portable lamp that uses seawater as a source of electrolytes.

This initiative supports the Pahang State Government's campaign to make Kuantan City a low-carbon city in line with Malaysia as a carbon-neutral nation by 2050, as announced by Malaysia's Prime Minister, Datuk Seri Ismail Sabri Yaakob. The research was also assisted by Senior Engineer, Centre for Property Management and Development (PPPH), Ts. Mohd Nurulakla Mohd Azlan.



A group of UMP researchers has innovated portable lights using seawater electrolytes as the UMP campus in Pekan is close to the beach.

Sea-Lite innovation started in March 2022 and the prototype was succeeded by mid-April 2022. The initial design of this device used materials found in the laboratory. In addition, the production of Sea-Lite electrodes also used recycled materials from the building renovation work at UMP.

Sea-Lite works through an ion reaction from seawater with electrodes, producing electricity capable of turning on the lights. Currently, the initial prototype can produce electricity consistently for up to seven days and this technology can also be used in areas with no electricity supply. In addition, this is a green technology and safe to use. Sea-Lite can also work by using table salt to replace seawater.

Sea-Lite does not produce carbon as a by-product and the risk of fire can also be avoided. It is also suitable for those passionate about outdoor activities such as camping, hiking, jungle trekking, fishing and cycling. The compact and easy-to-carry form of Sea-Lite can provide convenience to the users. In addition, it can be used as a preparation for natural disasters such as floods. It can also be used by rescue forces such as the army, the General Operations Force (PGA) and civil defence which requires them to be in a remote place for a long time.

14 LIFE  
BELOW WATER



## SDG 14: Life Below Water

### SORAS

Picture 36: ChM Dr. Nurlin Abu Samah



SORAS is a highly effective adsorbent material designed to remove arsenic from polluted water, particularly from landfill sites. It achieves an impressive arsenic removal rate of approximately 99.5%. The name "SORAS" is a combination of "sorber" (or "penjerap" in Malay) and the chemical symbol for arsenic (As).

This synthetic material is produced in the laboratory using bulk polymerization methods and features active sites with amino groups from the thiourea group. These groups are crucial for forming and breaking hydrogen bonds between SORAS and arsenic elements in water samples, resulting in a rapid adsorption process with nearly 90% removal in under five minutes.

This innovation addresses the issue of the less efficient use of activated carbon in wastewater treatment plants for arsenic removal and responds to the presence of arsenic in the Langat River Basin due to landscape changes, former mining sites, and pesticide use.

SORAS can be integrated into a two-stage water filtration system, offering a solution for obtaining arsenic-free water sources. Plans are underway to produce a prototype water filtration system equipped with SORAS for practical application.

### SMART Aqua System Monitors Water Quality to Produce Quality Crayfish

Lecturer of the College of Engineering, Universiti Malaysia Pahang (UMP), Professor Ir. Dr. Mohd Faizal Jamlos, produce a SMART Aqua system which can monitor water quality to ensure good crayfish production.



The Redclaw crayfish, also known as freshwater crayfish or lobster, is highly sought after in Malaysia despite its premium price. The growing demand for these crustaceans has led to an increase in freshwater crayfish farming, but inexperienced farmers risk financial losses. To address this, the SMART Aqua system employs IoT technology and data analytics to provide real-time predictions about crayfish growth and water quality.

This system utilizes various sensors like electrical conductivity (EC), total dissolved solids (TDS), dissolved oxygen (DO), pH, temperature, and humidity, which are integrated into a microprocessor known as the end node unit (ENU). It collects data continuously, with over 25,920 data points gathered between August 2020 and January 2021. This data is wirelessly transmitted to Cayenne Cloud via MQTT and stored in a server database through Wi-Fi.

Farmers can remotely monitor and access information on freshwater crayfish farming via a website accessible through browsers and Android devices. The collected data is analyzed using ARIMA forecasting, with 70% used as the training dataset and the remaining 30% as the test dataset. Notably, the system allows farmers to control and monitor crayfish tank levels through SMS alerts.

The SMART Aqua system has demonstrated an impressive forecasting accuracy rate of 90 to 95%, with an overall effectiveness of 92.8%. This innovation has also significantly reduced freshwater crayfish mortality, decreasing from 110 deaths in June 2020 to only 14 from August 2020 to January 2021.

15 LIFE ON LAND



## SDG 15: Life On Land

**Picture 37: Stingless Bees Honey Farming at Rimba Lestari UMP**



The Plant Management and Landscape Maintenance Unit of the Centre for Property Development and Management (PPPH), in collaboration with researcher Associate Professor Dr. Mohamad Firdaus bin Baswari and UMP Technology Sdn Bhd, has initiated a stingless bee farming project for the Campus Greening Program.

As part of this project, the honey harvesting process was carried out at the trial plot site using the "Sleek Pump," an innovation by UMP researcher Associate Professor Dr. Mohamad Firdaus bin Baswari.

Stingless bees hives and logs for this farming are placed around the UMP Pekan Campus area,

supporting the biodiversity-ecosystem towards campus greening objectives in alignment with the UI GreenMetric rating. Mr. Rahin bin Hasan, an Assistant Engineer at PPPH with expertise in related fields, also assisted in the stingless bee honey collection process.

### The Cannonball Tree



UMK Delegates listen to the briefing during their visit to Rimba Lestari

"The Cannonball Tree or scientifically known as *Couroupita Guianensis*, is the sole specimen found in the Rimba Lestari of UMP. This unique tree species, originating from South America, is considered an exotic plant in Malaysia, as it is primarily cultivated for research purposes and botanical studies. It can only be found in a few locations in Malaysia, including Taiping Lake Gardens, Penang Botanic Gardens, the Forest Research Institute Malaysia (FRIM), and Tenom Agriculture Park in Sabah.

Apart from the Cannonball Tree, Rimba Lestari also hosts various other tree species such as *Tongkat Ali*, *Meranti Tembaga*, *Cengal*, *Beruas*, *Ketapang*, *Jelutong*, *Simpoh Air*, *Meranti Rambai Daun*, and *Sungkai*, among 27 different types of rainforest and tropical wood trees. A total of 1,802 trees have been planted as part of the collaboration between UMP and FRIM. This includes the UMP-FRIM partnership (phase 1), spanning six acres, and the UMP-FRIM reforestation project (phase 2), known as Rimba Lestari, covering 5.6 acres.

### Campaign for Planting 100 Million Trees



UMP staff and student actively participated in the Environmental Sustainability Programme in collaboration with the Pahang State Forestry Department to plant approximately 2,000 trees of various species, including *Merawan Siput Jantan*, *Balau Pasir*, *Keruing Kertas*, *Kembang Semangkuk*, *Meranti Tembaga*, and *Meranti Sarang Punai* in the Tekam Forest Reserve. The opening ceremony was officiated by the Chairman of the Pahang State Tourism, Culture, Environment, Agriculture, and Commodities Committee, Dato' Sri Haji Mohd. Sharkar Haji Shamsudin. This effort was carried out to support the global initiative to green the Earth through the 100 Million Trees Planting Campaign announced last year. This campaign is crucial for preserving the well-being of forests and rejuvenating previously disturbed forest areas.

**16** PEACE, JUSTICE  
AND STRONG  
INSTITUTIONS



## SDG 16: Peace, Justice and Strong Institutions

### Legal Department

#### The presence of a Commissioner for Oaths at the UMP Legal Department

UMP Legal Assistant Officer, Nasri Nasution Najib, has been appointed as a registered Commissioner for Oaths. All UMP members, in particular, can visit the UMP Legal Department for all matters related to oath stamps in the presence of the appointed Commissioner for Oaths.



Courtesy Visit to Chief Judge

Table 38: Legal Department Programme for 2022

NO	PROGRAMME	DATE	VENUE
1.	Orientation Day Briefing (HSK Mac'22) <ul style="list-style-type: none"> <li>The Legal Officer, Nurul Ateeqah Othman, provided a briefing on the University and University Colleges Act 1971 and the Universiti Malaysia Pahang (Student Discipline) Rules 2009.</li> </ul>	6 March 2022	Online
2.	Briefing for New Student Registration for July 2022 Intake <ul style="list-style-type: none"> <li>The Legal Officer, Nurul Ateeqah Othman, provided a briefing on the University and University Colleges Act 1971 and the Universiti Malaysia Pahang (Student Discipline) Rules 2009 through a live broadcast in the Global Classroom, UMP Gambang Campus.</li> </ul>	2 August 2022	UMP Kampus Gambang
3.	Briefing for New Student Registration for July 2022 Intake <ul style="list-style-type: none"> <li>The Legal Officer, Nurul Ateeqah Othman, provided a briefing on the University and University Colleges Act 1971 and the Universiti Malaysia Pahang (Student Discipline) Rules 2009 through a live broadcast in the Global Classroom, UMP Gambang Campus.</li> </ul>	13 October 2022	UMP Pekan
4.	Courtesy Visit and Introduction of the Public University Legal Advisory Council with the Most Honourable Chief Justice of the Nation YAA Tun Tengku Maimun Tuan Mat.	22 November 2022	Banquet Hall, Level 1, Istana Kehakiman, Putrajaya

## Integrity and Compliance



**Table 39: Integrity and Compliance Department Programme for 2022**

NO	PROGRAMME	DATE	VENUE
1.	<p>Webinar: Discipline Management under Act 605 (Gifts and Ceremonies)</p> <ul style="list-style-type: none"> <li>This theme was chosen based on the current situation where many staff members still lack knowledge or understanding of the types of gifts that can be accepted as public servants. Every staff member needs to understand the types of gifts that can or cannot be accepted to prevent the elements of corruption. A total of 165 participants attended the webinar.</li> </ul>	10 March 2022	Online
2.	<p>Webinar: Discipline Management under Act 605 (Sexual Harassment)</p> <ul style="list-style-type: none"> <li>The webinar was presented by the Head of the Integrity Unit at Universiti Malaysia Terengganu (UMT), Mohd Juhari Ab. Kadir. Sexual harassment is one of the issues commonly addressed by Integrity Units in most public universities. Although UMP does not have serious cases of sexual harassment, explanations are still necessary to prevent larger issues from arising. This webinar was attended by 161 participants.</li> </ul>	26 May 2022	Online
3.	<p>Moot Trial Programme with Students for the Integrity and Anti-Corruption Course (KIAR)</p> <ul style="list-style-type: none"> <li>This programme involved 42 students. The Integrity and Anti-Corruption Course is an elective course introduced to university students.</li> <li>However, the Moot Trial programme only focused on the Corporate Liability module under Section 17A of the Malaysian Anti-Corruption Commission Act 20. Conducting simulations similar to courtroom situations, it provides students with a better understanding of the meaning and requirements of Section 17A.</li> </ul>	13 Jun 2022	Online
4.	<p>Benchmarking HEI and Discussion Session on Best Practices in the Integrity Unit's Work Process with the Universiti Malaya (UM) and the Universiti Kebangsaan Malaysia (UKM)</p>	27 July 2022	Universiti Malaya (UM) and Universiti Kebangsaan Malaysia (UKM)

NO	PROGRAMME	DATE	VENUE
5.	Induction and Professional Development Programme (UMP Pride) The objective of this programme is to provide exposure and explanation to new staff regarding the administration system, key procedures, directives, circulars, and effective guidelines at UMP, including aspects of governance management, human resource management, financial management, and related functions.	4 October 2022	UMP Pekan
6.	Orientation Week for Students Session 2022/2023 (MINDS'22/2)	13 and 14 October 2022	UMP Kampus Gambang
7.	Governance and Core Functions Alignment Workshop for Public University Integrity Units <ul style="list-style-type: none"> <li>• This workshop was organized to discuss the roles and functions of Integrity Units in each public university.</li> <li>• In addition, the main focus was also to achieve consistency in preparing reports that need to be submitted to the Anti-Corruption Committee, MOE.</li> </ul>	20 to 21 Oktober 2022	Institute of Leadership and Development (ILD), Universiti Teknologi MARA (UiTM), Negeri Sembilan
8.	The 9th Certified Integrity Officer (CeIO) Programme Convocation Ceremony in 2022 <ul style="list-style-type: none"> <li>• To meet the requirements set by the Malaysian Anti-Corruption Commission (SPRM), every Integrity Officer must possess the CeIO Certificate, which is a qualification certificate for integrity officers. The Certified Integrity Officer Programme (CeIO) is conducted by SPRM and is a primary requirement to become a certified integrity officer.</li> <li>• Noriza Hassan, the Head of the Integrity and Compliance Unit at UMP, attended the course and was awarded the CeIO Certificate as a Certified Integrity Officer.</li> </ul>	25 October 2022	Universiti Putra Malaysia (UPM)
9.	UMP Holdings (UMPH) Anti-Corruption Pledge Ceremony <ul style="list-style-type: none"> <li>• A total of 300 UMP Holdings (UMPH) staff and leadership members took part in the Anti-Corruption Pledge. This event was organized in response to the government's efforts to combat corruption within companies.</li> <li>• UMPH's initiative is also in line with Section 17A of the Malaysian Anti-Corruption Commission Act 2009, which holds commercial organizations liable if there is evidence of their employees being involved in corrupt activities. Such programmes demonstrate the efforts and commitment of UMPH management to curb corruption within UMP's subsidiary companies.</li> </ul>	29 November 2022	UMP Holdings

# 17 PARTNERSHIPS FOR THE GOALS



## SDG 17: Partnership for the Goals

### Internationalization - International Community Service Network

The first core focuses on strengthening the network between UMP and the international community. Through this network, initiatives for students to participate in mobility programmes, industrial training, and work abroad will be easier to implement.

### Confucius Institute UMP has been appointed as a panel for the Chinese Poem Translation Competition in China



Director of the Confucius Institute at UMP, Yong Ying Mei, was appointed as a panelist for the 16th Chinese Poem Translation Competition, along with ten experts from China, the United States, the United Kingdom, Singapore, Australia, and Jamaica on 3 July 2022. A total of 108 translations were received in this translation competition. This global translation competition was organized in China with the aim of translating classical Mandarin poems so that the general public can appreciate the poetry without language barriers.

### Confucius Institute UMP organized an online International Training for Mandarin Teachers in Malaysia

Training for Mandarin Teachers in Malaysia from 1 September to 3 August 2022, for 30 Mandarin language lecturers from the Mara Professional Colleges (KPM) in Malaysia, including KPM Ayer Molek, KPM Bandar Melaka, KPM Beranang, KPM Indera Mahkota, and KPM Seri Iskandar. The Director of Confucius Institute UMP, Yong Ying Mei, the Director of the China Confucius Institute, Associate Professor Dr. Wang Haiyan, and a Professor from Hebei University, China, were invited to deliver lectures on topics such as Game Pedagogy in Teaching Mandarin for Beginners, Strategies for Teaching Elementary Mandarin Speaking, Assessment Evaluation for Project Video, Attraction of Language Use by Teacher, and Time Arrangement in Teaching.

### University Internalization



UMP's internationalization agenda is a valuable strategy to enhance the integrity of its global brand reputation and provide added value in fostering the higher education ecosystem, especially in enriching the impact of globalization on national and international communities. In 2022, the UMP brand was further strengthened as a global entity through the establishment of new strategic collaborations via the signing of MoUs and MoAs with international strategic partner institutions, along with participation in several international conferences. These strategic collaborations serve as an inclusive platform to drive academic and research excellence through diverse

international activities and high-impact initiatives. The exploration of new internationalization initiatives and agendas implemented in 2022 has indirectly opened up various meaningful opportunities for UMP in its pursuit of excellence on the international stage.

**Table 40: List of International Conference Participations and Official International Working Visits**

NO	PROGRAMME	DATE	COUNTRY
1.	Yes2Malaysia Education Fusion Expo 2022	23 to 24 April 2022	Kuwait
2.	Yes2Malaysia Education Information Day 2022	12 to 6 May 2022	Saudi Arabia
3.	Strategic Collaboration Visit to 5 universities in Turkey	11 to 17 June 2022	Turkey
4.	Strategic Collaboration Visit to 5 universities in Indonesia	24 to 28 October 2022	Indonesia
5.	16th Annual Review Meeting of ASEAN International Mobility for Students (AIMS) Programme dan Working Visit to Chonnam National University	1 to 4 November 2022	South Korea

**Picture 34: List of Academic Collaboration 2022**

### International Student

Increasing international student enrolment is one of the critical elements in driving the country's internationalization agenda while also creating an international environment on campus. Cultural diversity, languages, and ways of life can foster the sustainability of culture and traditions among local and international communities. With cultural and linguistic diversity, it provides opportunities for

local students to gain new experiences through various activities with the international community. In 2022, a total of 500 international students pursued their studies at UMP.

**Picture 40: Details of International Student for 2022**



**Table 41: List of Undergraduate International Student**

NO	PROGRAM	TOTAL STUDENT
1.	Diploma	0
2.	Dual Degree	1
3.	Degree	141
4.	Preparatory Intensive English (PIE)	5
5.	Program Transfer	1
6.	Mobility Program (Inbound)	54
<b>TOTAL</b>		<b>201</b>

**Table 42: List of Postgraduate International Student**

NO	PROGRAM	TOTAL STUDENT
1.	Master's Degree (Research)	77
2.	Master's Degree (Coursework)	2
3.	Master (Mixed Mode)	1
4.	Doctor of Philosophy (PhD)	225
5.	Pre-sessional English Course (PEC)	0
6.	Mobility Program (Inbound)	8
<b>TOTAL</b>		<b>310</b>

### Student Mobility

The organization of student exchange programmes is in line with UMP's internationalization initiatives under Strategic Objective 6 (Internationalization of Graduates). These programmes provide local and international students with the opportunity to experience different learning environments, enrich their learning experiences, and expand their networks of friendship with students from other universities. In 2022, a total of 30 local UMP students had the opportunity to participate in credit-bearing student exchange programmes at UMP's strategic partner institutions abroad. UMP also welcomed 61 international students from various countries who participated in credit-bearing student exchange programmes at UMP.

**Picture 41: Credited Mobility Programme Outbound dan Inbound Year 2022**

Credited Mobility (Outbound)			Uncredited Mobility (Inbound)					
3	South Korea		31	Indonesia		16	India	
14	Indonesia		1	Bangladesh		10	Germany	
13	Turkey		1	Denmark		2	Pakistan	

**Table 43: List of Credited Mobility Programme Universities (Outbound) Year 2022**

SOUTH KOREA	INDONESIA	TURKEY
<ul style="list-style-type: none"> <li>• Chung Ang University</li> <li>• Chonnam National University</li> </ul>	<ul style="list-style-type: none"> <li>• Telkom University</li> <li>• Institut Teknologi Bandung</li> <li>• Institut Teknologi Sepuluh Nopember</li> </ul>	<ul style="list-style-type: none"> <li>• Sakarya Universitesi</li> <li>• Cukurova Universitesi</li> <li>• Istanbul Technical University</li> </ul>

### Academic Strategic Cooperation



### Alumni of the UMP Dual Degree Programme in Germany Recognized

Nur Khairiyah Hibatullah Md Rosley, a graduate with a Bachelor of Mechatronics Engineering with Honors (BHM) in 2017, has received the Royal Educational Award from UMP and the Verein Deutscher Ingenieure (VDI) Award (Association of German Engineers). She now serves as a Product and Process Engineer in the Research and Development (R&D) Department at Vacuumschmelze (VAC) GmbH & Co. KG, Hanau, Germany.

**Table 44: List of Academic Strategic Collaboration Programmes for 2022**

NO	PROGRAM	PURPOSE	DATE	VENUE
1.	Official working visit to Vacuumschmelze Gmbh & Co. KG (VAC) Hanau, Germany	Indicating the latest technology levels in Germany, including UMP's commitment to moving towards digital transformation and a smart campus within five years.	3 June 2022	Vacuumschmelze Gmbh & Co. KG (VAC) Hanau, German
2.	MoU between UMP and Hochschule Mannheim (HMA), Germany			
3.	Official working visit to The European Language Certificates (TELC) Frankfurt	UMP has offered to become one of the TELC examination centres in Malaysia. Leveraging UMP's capable facilities, it can serve as a TELC examination centre. This proposal has been warmly received by TELC. The centre will be managed by the Modern Language Center (PBM) in collaboration with PKSA. The establishment of the TELC examination centre will benefit UMP, especially in providing examination facilities for all UMP dual degree students.	18 July 2022	The European Language Certificates (TELC) Frankfurt
4.	Four Malaysian universities signed a Letter of Intent for TVET cooperation in China	The Letter of Intent (LoI) pertains to Technical and Vocational Education and Training (TVET) with the Guizhou Institute of Technology (GIT).	24 August 2022	Online



**Table 45: Student Details Base on Country**

NO	COUNTRY	TOTAL
1.	Singapore	4
2.	Germany	12
3.	Thailand	2
4.	South Korea	1
5.	Australia	1
<b>TOTAL</b>		<b>20</b>

**Table 46: Student Details Base on Industry**

NO	INDUSTRY CATEGORY	TOTAL
1.	Information Technology	4
2.	Manufacturing	3
3.	Automotive	12
4.	Broadcasting	1
<b>TOTAL</b>		<b>20</b>

**Picture 42: Students Participating in Industrial Training Abroad in the Year 2022.**

**Student Participate in International Industrial Training for 2022**

**20**

students underwent international industrial training

**5**

students underwent international industrial training in March 2022

**15**

students underwent international industrial training in July 2022



**UMP student excels in the Chinese Bridge Competition Malaysia and represents Malaysia on the global stage.**

On 4 June 2022, Alleyssa Syafinas Mazlan, a student from UMP's Faculty of Chemical and Process Engineering Technology, achieved first place in the 21st Chinese Bridge Chinese Proficiency Competition for Malaysian Preliminary. She represented Malaysia in the 21st Chinese Bridge Competition Global Finals held on 10 October 2022. Yong Ying Mei, the Director of the Confucius Institute at UMP, won an award for excellent coaching of the competition's participants. The Chinese Bridge Chinese Proficiency Competition Malaysian Preliminary, organized by Kong Zi Institute, Universiti Malaya and the Chinese Embassy in Malaysia since 2013, invites champions from each country to compete on the global stage in China. The competition includes quizzes on Chinese language and culture, talent performances, public speaking, and Q&A sessions. With great pride, the UMP student became the champion in Malaysia and represented the country on the global stage.

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